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Edward Gavrilov, Andrey Gavrilov

The Birds of Kazakhstan

(abridged edition)

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рисунок Федора Федоровича Карпова.

This Tethys Society annual edition presents scientific review on ornithofauna of Kazakhstan. The edition is provided for ornithologists, ecologists, students and other readers with interests in biology.

Picture on the cover : *Nycticorax nycticorax* (L., 1758)
picture by Feodor F. Karpov

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The Birds of Kazakhstan

(abridged edition)

Edward I. Gavrilov and Andrey E. Gavrilov

Introduction

With the publication of the 5-volume monograph "The Birds of Kazakhstan" (1960, 1962, 1970, 1972, 1974), organised and basic executed by outstanding ornithologist Professor Igor Alexandrovich Dolgushin, the long-term study of birds came to an end. The research emphasis was replaced by detailed study of biology of separate species and groups and their seasonal migration. However the necessity for faunistic works has not disappeared. Global changes in climate and economic activity result in changes of ecological conditions reflected in numbers and distribution of animals. They especially have an effect on birds, as the most mobile representatives of our animals. A number of northern species have expanded their area further south, and southern ones in a northern direction (Korelov, 1964; Varshavskiy, 1965; Kovshar, Berezovikov, 2001). On the reservoirs of Central Kazakhstan the ecological conditions periodically vary sharply depending on the amount of water, resulting in a natural pulsation of birds distribution (Chelzov-Bebutov, 1957, 1958, 1960). This rather interesting biological phenomenon, unfortunately, is still poorly investigated. The negative changes in ecological conditions in a number of regions of Kazakhstan and reduction of habitat and numbers of some animals have given rise to the creation in 1978 of the Red Book of Kazakhstan (subsequent editions in 1991 and 1996), where species are included whose destiny is cause for special alarm (Appendix 1).

The sporadic research in various regions in this respect remained poor (Dolgushin, 1960; Kovshar, Gavrilov, 1982), and the elimination such "blank spots" has resulted in the revelation of new species for Kazakhstan, details of their length of stay and the boundaries of distribution. In this respect the results of work executed in the Altai by B.V. Scherbakov and N.N. Berezovikov, and on a mid-stream part of the Ural river valley by A.S. Levin and B.M. Gubin are indicative. The passage from mobile expeditions to stationary study, sometimes long-term, and the application of various methods of mass bird catching for ringing have apparently been productive not only in deciding special biological tasks, but also for revealing species, new to the Republic. Practically, all ringing stations made interesting faunistic finds. Much new information about the birds distribution was received as a result of mobile trips to lesser known areas of Kazakhstan (Ustyurt, Betpak-Dala, Trans-Irtysh'e etc.). For the period, which has elapsed since publishing "The Birds of Kazakhstan", a substantial number of large faunistic works on various regions were published, which add much information about birds of Kazakhstan (Kovshar, Kovshar, 2000).

The problem of bio-diversity conservation on the planet has ceased to be an abstract concept. In the majority of the states, including the Republic of Kazakhstan, are not only anxious scientists, but also government. It has become obvious, that the future of mankind depends on how we continue to build our relationship with the environment. To continue only to consume - Michurin's slogan of Soviet time - "We can not wait for gifts from nature; to take them is our task" or, to strive for harmonious coexistence ensuring maintenance of ecological stability. Ecological problems are now our priority. The burning topic of the day is the organisation of recording the condition of the environment, animals and plants. Monitoring investigations should first record the increasing negative tendencies and draw public attention to the necessity for their elimination. Among them changes in the distribution of some animals is especially evident and should to be a priority. Animals particularly birds are one of the first to react for ecological changes such as climate, vegetation, increase in anxiety, reduction in food supply and so on. Probably this work will engage not only scientific establishments, but also regional monitoring stations. Establishing areas of distribution of bird species at the end of 20 century represents unequivocal practical interest.

The majority of ornithologists will carry out research on species level, which although is a basis, does not reflect biological differentiation available in a nature. Such a situation is not appropriate to the

modern level of ornithology and it is impossible to allow this. Partly it is possible to explain it by the absence of field guides with morphological diagnoses of sub-species, existing only in inaccessible multi-volume books by S.A. Buturlin and G.P. Dementiev (1934-1937), by G.P. Dementiev and N.A. Gladkov (1951-1954) and by L.S. Stepanyan (1975, 1978, 1990). The publication of the list of birds in "The Book of the Genetic Fund of the fauna of Kazakh SSR " (Gvozdev, 1989) has not solved this problem. Not all birds are listed in the book, distribution is given rather schematically and only at species level, and does not present morphological diagnoses of sub-species.

The above reasons have also induced us to write the present work. In general systematic and English names we follow mostly S. Cramp ("The birds of the Western Palearctic"), but in species and subspecies "The birds of Kazakhstan" (1960 –1974) and especially L.S. Stepanyan (1990), who the first paid attention on species independence of Hume's Warbler (*Phylloscopus humei*), Pale Sand Martin (*Riparia diluta*), Eastern House Martin (*Delichon dasypus*), Sykes' Warbler (*Hippolais rama*), and E.I. Gavrilov (2000). We retain species status of *Lanius phoenicuroides* and *Remiz coronatus*, which are considered by L.S. Stepanyan as geographical races. After E.N. Panov (1995), we consider Great Grey Shrike (*Lanius excubitor*) and Desert Grey Shrike (*L. meridionalis pallidirostris*) as separate species. The essential divergences are revealed in the treatment of geographical variability of separate species. So, we recognise the validity of the following races: *Perdix perdix arenicola*, *Streptopelia decaocto stoliczkae*, *Aegolius funereus pallens*, *Caprimulgus europaeus plumipes*, *Delichon urbica meridionalis*, *Galerida cristata tenuirostris*, *Alauda arvensis dementjevi*, *Acrocephalus arundinaceus zarudnyi*, *Muscicapa striata sarudnyi* and *Acanthis flavirostris kirghizorum*. We believe that the removal of any race also requires argued proof similar to that used in the description of new sub-species. As an example we mention *Perdix perdix arenicola*, which was removed by L.S. Stepanyan as a synonym of *robusta*, in spite of the fact that S.A. Buturlin (Buturlin, Dementiev, 1935) marked its sharp differences recognised "even by a such conservative in systematic, as G.E. Dresser" (page 197). Subsequent research by E.A. Pavlova (1987) convincingly proved the validity of this race. In systematic of "Large White-headed Gull" we follow Pierre Yesou (2002) who assigns 8 species and two semi-species which are better to consider as subspecies: *barabensis* (of *L.heuglini*) and *mongolicus* (of *L.vegae*). Concerning *Sylvia curruca* at last time V.M. Loskot (2001) confirms subspecies validity of *halimodendri*, *telengetica*, *jaxartica*, *snigirewskii* and *margelanica*. But H.Shirihai *et al*. (2001) consider four semi-species within *S.curruca* superspecies: *curruca* (subspecies *curruca* including *blythi,* and *halimodendri*), *margelanica*, *minula* and *althaea*. They consider *telengetica* as intermediate population between typical *curruca* and *margelanica/minula*, and then include *telengetica* in *halimodendri*. Southern desert forms *jaxartica* and *snigirewskii* they regard as synonyms of *minula*. We consider last position more precisely reflect the current knowledge of this bird and accept it for exception Hume's Lesser Whitethroat which species validity without any doubt. As independent species we consider *Motacilla lutea* and *M.feldegg* which breed in Kazakhstan by places together with *M.flava* but hybrids not known or very rare. *Motacilla calcarata* is a full species also as it settled from neighbour Kyrgyzsan and in new territories Grey-backed Citrine Wagtail replaced by Black-backed Wagtail. At first we consider *Buteo japonicus* as independent from *Buteo buteo* species. Though these birds have different wing structure and pass the winter in different continents (Asia and Africa), they need to further study. There are also distinctions concerning geographical distribution of some races and populations. So, the Red-necked Grebe occupying the Balkhash-Alakol' depression we have split to race *holboellii* to attract attention to the necessity for its study. In general, it is necessary once again to emphasise the necessity of continuing fauna research, collecting skins from various areas of Kazakhstan is one of ornithology's urgent task.

Breeding biology is fairly well known for those species, which were specially studied, *Tadorna tadorna*, *Alectoris chukar*, *Phoenicopterus roseus*, *Falco cherrug*, *Fulica atra*, *Chlamydotis macqueenii*, *Ibidorhyncha struthersii*, *Larus relictus*, *Pterocles orientalis*, *Melanocorypha calandra*, *Alauda gulgula* , *Eremophila alpestris albigula*, *Troglodytes troglodytes*, *Prunella atrogularis*, *Prunella fulvescens*, *Luscinia pectoralis*, *Phoenicurus caeruleocephalus*, *Turdus viscivorus*, *Sylvia hortensis*, *Phylloscopus humei*, *Leptopoecile sophiae*, *Lanius meridionalis*, *Lanius phoenicuroides*, *Pica pica*, *Podoces panderi*, *Corvus monedula*, *Sturnus vulgaris*, *Passer hispaniolensis*, *Loxia curvirostra tianschanica*, *Carpodacus rhodochlamys*, *Mycerobas carnipes*, *Emberiza bruniceps*, for example. No nest were found in Kazakhstan in Marbled Duck (*Anas angustirostris*), Daurian Partridge (*Perdix dauurica*), Great Rosefinch (*Carpodacus rubicilla*), Pallas' Rosefinch (*Carpodacus roseus*), Greater Red-mantled Rosefinch (*Carpodacus grandis*), Two-barred Crossbill (*Loxia leucoptera*), Common Redpoll (*Carduelis flammea*), Long-tailed Rosefinch (*Uragus sibiricus*), Olive-backed Pipit (*Anthus hodgsoni*), Moustached Warbler (*Acrocephalus melanopogon*), Siberian Blue Robin (*Luscinia cyane*), Red-flanked Bluetail (*Tarsiger cyanurus*), Pied Stonechat (*Saxicola caprata*) and some others. No nests

are known for many subspecies, breeding in different habitats. At bottom we have enough data on some species from one, two or three points only (Kovshar, 2004) and it is impossible now to compare productivity many birds in different areas.

Morphological diagnostics of races follow mainly L.S. Stepanyan (1990), though in some cases new information was added, and for sub-species not accepted by him on the basis of the skin collections at the Institute of Zoology, and literary data. It is necessary to remember, that sub-species identification in nature is very difficult, and the numerous skin collections of birds are necessary for reference. The existing diagnoses of many forms are imperfect and demand further research. This difficult, time-consuming task is a beneficial field of activity for young ornithologists.

In species accounts the main biological information – migration, status, habitat, time of moving and breeding, nests and their location, and other information – are included. To make the check-list more precise, all species not confirmed for at least 100 years or doubtful and erroneous, were removed to "Rejected species" section. Birds mentioned in "The Birds of Kazakhstan" and found on nearby territory only were placed in another section "Expected species". We hope that such an approach will stimulate the gathering of new facts (skins, photographs and drawings) for the inclusion of these birds in main check-list.

It is necessary to make some general remarks for users of the present work. All confirmed documented species found in Kazakhstan have a serial number. The name of each geographical race and its distribution is given, followed by an account of the species. If some races are in Kazakhstan, after each name a morphological diagnosis and distribution are given in very general line as ever for species with well significant morphology difference in sub-species (as in *Milvus migrans migrans* and *Milvus migrans lineatus*, *Oriolus oriolus oriolus* and *Oriolus oriolus kundoo*, for example) there are very few exact breeding points and they integrates widely, so it is impossible to outline its sub-species distribution exactly.

It is necessary to know, that after independence many towns and villages were re-named and we mostly use new names. For anyone using old papers, we give some new names:

Now	**Before**	**Now**	**Before**
Aktau	Shevchenko	Dzharkent	Panfilov
Aktobe	Aktyubinsk	Korday	Georgievka
Almaty	Alma-Ata	Kulan	Lugovoye
Atyrau	Gur'ev	Ridder	Leninogorsk
Dzhabagly	Novonikolaevka	Taraz	Dzhambul

All geographical points mentioned in the text you can find on coordinates given in Appendix 2.

We hope that this book will be of interest to those who study our birds or only visit our country for a short time. All critical remarks will gratefully accepted by the authors.

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KAZAKHSTAN and BIRD WATCHING

Kazakhstan Republic situated in the centre of Eurasian continent. Its territory has roughly 2715 100 square kilometres and stretch for 2925 km from west to east (Caspian Sea – Altai) and for 1600 km from north to south (southern part of Western Siberia plain – Kyzylkum Desert). In mostly plain, at western part on Mangyshlak Peninsula there is Karagie holllow situated at 132 m below sea level, and in eastern part there are mountain systems Tien Shan (main ridges Ugamskiy, Talasskiy, Kirgizskiy, Zailiyskiy, Terskey Alatau, Ketmen and Tengri-Tag with peak Khan Tengri, 6695 m above sea level, near border with Kyrgizstan and China). To north of Tien Shan between Ile valley and Alakol' depression, on the border with China, there is Dzhungarskiy Alatau ridge (peak 4464 m) and Tarbagatai ridge (peak 2991 m) which stretch out from west to east south of Zaysan depression to north of which there is Altai area (main ridges Narymskiy, Kholzunskiy, Lineyskiy, Kurchumskyi, Ivanovskiy, Manrak, Saur, Altayskiy Tarbagatai and Southern Altai, peak 3483 m). To north west of Zaysan depression there is Kalbinskiy Altai (ridge) of low mountains, and large area of Kazakh upland, which consist of old low mountains. Between Irgiz – Turgai depression and Ural river valley old low Mugodzhary ridge exist. Above Caspian and Aral Sea the main lakes are Balkhash, Alakul, Tengiz, Selety-Teniz and many smaller ones. The main rivers are Ural, Irtysh, Syrdaria and Ile, which have forested flood-lands. Vast different desert (sandy, stony, clay) with spots of saxaul forest, steppe (wormwoody, feather-grassy, fesque-grassy and others) with lakes and by places with groves and shrubs, which inhabited by many birds. In Northern Kazakhstan prevailed steppe with forest-islands (pine, birch, oak, poplar etc). But different habitats occur in mountains which can be forested (spruce, fir, juniper etc) or not, with steppe and meadow parts and stony peaks covered by snow, and many streams and rivers. Plain river valleys have deciduous forest and shrubs, as a rule.

Therefore not surprisingly that 503 bird species occur in our country. Out of them 90 are sedentary, 313 breeding migrant, 68 occur during migration only, 29 accident and 3 with unknown status. It needs to mention at first such ones as Black Lark (*Melanocorypha yeltoniensis*), White-winged Lark (*Melanocorypha leucoptera*) and Sociable Lapwing (*Vanellus gregarius*) which nesting areas disposed mostly in Kazakhstan and small parts in neighbouring Russia. It needs to mention Relict Gull (*Larus relictus*) and Yellow-eyed Stock Dove (*Columba eversmanni*) also, which have restricted breeding areas. But other birds distributed more widely.

In last years the numbers of some species decreased and their distribution reduced, therefore they included in The Red Book of Kazakhstan (formed in 1978). In the last edition (1996) 56 species of birds (and Lesser White-fronted Goose some later, in 2002) are included (Appendix 1).

Of course, this list can be discussed and on our opinion some species must be excluded. For example, Eagle Owl, Little Curlew, Blue Whistling Thrush, Great Rosefinch. But it exists more than 25 years.

The main form of conservation in Kazakhstan is special protected areas which included 9 reserves (in Western Tien Shan Aksu-Djabagly from 1926, in steppe area Naurzumskiy from 1930, in Zailiyskiy Alatau ridge Almatinskiy from 1931, on Aral Sea Barsa-Kelmesskiy from 1939, in Central Kazakhstan Korgalzhyn from 1958, on Altai Markakol'skiy from 1976 (Markakol' lake and adjasted area of Kurchum ridge), on Mangyshlak peninsula Usturtskiy from 1984, Western-Altaiskiy from 1992 (Black and White Uba river basins, eastern of Ridder town), and on Alakol' depression Alakol'skiy from 1998) and 6 National Parks (in Kazakhishe upland Bayan-Aul'skiy from 1985, in low Altyn-Emel' ridge Altyn-Emel'skiy from 1996, in Kokshetau upland Kokshetauskiy from 1996, and in Zailiyskiy Alatau ridge Ile-Alatauskiy from 1996, in Kazakhishe upland close to Karkaralinsk village Karkaralinskiy from 1999 and on Altai close to Katon-Karagay village Katon-Karagaiskiy from 2000).

No special works on conservation and increase numbers of some species was conducted and only in 2004 the project of Bird Life International on Sociable Lapwing ("Investigation into the causes of the decline of Sociable Plover") begins in Korgalzhyn reserve. In future special projects on Relict Gull (study of change breeding colonies by colour marking of nestlings in Kazakhstan, Russia and China) and Yellow-eyed Stock Dove (increasing numbers by special nest-boxes, as birds have shortage of tree-holes for breeding) will be perspective.

Our birds attract attention of foreign specialists and in last years hundreds of ornithologists and bird-watchers visit Kazakhstan yearly. There are several tourist firms, which organise such trips and supplied them with qualified ornithologists as a guide, "Silk Road" (sradventure@nursat.kz) and "Khan-Tengri" (kazbek@kantengri.almaty.kz), for example.

But it needs to remember that related species when breeding together hybridised freely. Out of them especially Grey Partridge (*Perdix perdix*) and Daurian Partridge (*Perdix dauurica*), Long-legged

Buzzard (*Buteo rufinus*) and Upland Buzzard (*Buteo hemilasius*), Hooded Crow (*Corvus cornix*) and Carrion Crow (*Corvus corone*), Western Jackdaw (*Corvus monedula*) and Daurian Jackdaw (*Corvus dauuricus*), Yellowhammer (*Emberiza citrinella*) and Pine Bunting (*Emberiza leucocephala*), Goldfinch (*Carduelis carduelis*) and Grey Goldfinch (*Carduelis caniceps*), Azure Tit (*Parus cyanus*) and Yellow-breasted Azure Tit (*Parus flavipectus*), Blue Tit (*Parus caeruleus*) and Azure Tit (*Parus cyanus*), Great Tit (*Parus major*) and Grey Tit (*Parus bokharensis*), Great Reed Warbler (*Acrocephalus arundinaceus*) and Clamorous Reed Warbler (*Acrocephalus stentoreus*), Booted Warbler (*Hippolais caligata*) and Sykes' Warbler (*Hippolais rama*), Red-backed Shrike (*Lanius collurio*) and Turkestan Red-tailed Shrike (*Lanius phoenicuroides*) and may be some others (Great Spotted Woodpecker (*Dendrocopos major*) and White-winged Woodpecker (*Dendrocopos leucopterus*). In such birds field identification is a problem in many cases, except *Corvus*. The better is to have such bird in hand. Some details you can read in the species accounts.

The more attractive and frequent visited by foreign tourists and bird-watchers such places.

Sorbulak Lake (desert area, 80 km north-west of Almaty; $43^0$46N $76^0$05E). It is artifical sewage-water reservoirs system with open or overgrowed with reed-beds shores and several forest belts. In summer here breed Ruddy Shelduck, Common Shelduck, Great Cormorant (colony of several hundred pairs), Little Bittern, Dalmatian Pelican (colony up to 300 pairs), Common Pheasant, Marsh Harrier, Shikra, Water Rail, Little Crake, Moorhen, Common Coot, Black-winged Stilt, Collared Pratincole, Little Ringed Plover, Northern Lapwing, Common Redshank, Black-headed Gull, Caspian Gull, Gull-billed Tern, Common Tern, Little Tern, Black Tern, Black-bellied Sandgrouse, Common Cuckoo, Common Kingfisher, European Bee-eater, European Roller, Hoopoe, Calandra Lark, Short-toed Lark, Eurasian Skylark, Eurasian and Pale Sand Martin, Barn Swallow, Tawny Pipit, Black-headed Wagtail, Bluethroat, Isabelline Wheatear, Cetti's Warbler, Grasshopper Warbler, Paddyfield Warbler, Reed Warbler, Great Reed Warbler, Clamorous Reed Warbler, Bearded Tit, Turkestan Red-tailed Shrike, Lesser Grey Shrike, Magpie, Western Jackdaw, Rook, Carrion Crow, Common Starling, Rose-coloured Starling (colony up to one thousand pairs), Common Mynah, Indian Sparrow, Spanish Sparrow, Tree Sparrow, Red-headed Bunting and Corn Bunting. During migration, especially in April-May and August-September, several hundred species can be observer here and White-headed Duck among them.

Kolshengel' village (desert area, 200 km north-west of Almaty; $44^0$30N $75^0$07E) is situated in area where sand dunes overgrown with grasses and bushes border on plain clay and stony desert. Small patches of saxaul forest exist nearby. There are several artesian wells, which used by birds for watering, especially during hot days. Such points are very effective for birding, catching and ringing birds. Out of breeding birds it needs to mention Houbara Bustard, Demoiselle Crane, Greater Sand Plover, Black-bellied Sandgrouse, Pin-tailed Sandgrouse, European Nightjar, Eagle Owl, Calandra Lark, Bimaculated Lark, White-winged Lark, Short-toed Lark, Lesser Short-toed Lark, Eurasian Skylark, Oriental Skylark, Barn Swallow, Isabelline Wheatear, Desert Wheatear, Asian Desert Warbler, Southern Grey Shrike and Red-headed Bunting and some others. Sometimes Egyptian Vulture, Long-legged Buzzard, Pallid Harrier and even Trumpeter Finch, which stay in Kazakhstan is not clear, can be observed too. During migration much more species can be met here, including very unexpected, as Little Bittern, Common Swift and others.

Djelturanga village situated near 200 km to north north west of Kolshengel' ($45^0$03N $75^0$47E), close to Ile valley. Here is the famous Grove of relict turanga tree (*Populus diversifolia*). Very old trees have many natural holes, which used by Yellow-eyed Stock Dove (may be 30-50 pairs), European Roller, Striated Scops Owl, Eurasian Scops Owl, Hoopoe, Western Jackdaw, Common Starling, Grey Tit and Saxaul Sparrow for breeding. White-winged Woodpecker also very common here and it make additional holes for other birds. Out of other species White-tailed Eagle, Shikra, Stone Curlew, Lesser Whitethroat, Sykes' Warbler and probably Booted Eagle breed here also. Grey Heron, Great White Egret, Night Heron and Ruddy Shelduck can be observed every day and they must breed nearby.

Big Almaty Lake ($42^0$59N $76^0$57E) situated 30 km south of Almaty in Zailiyskiy Alatau ridge (Tien Shan) at 2500 m above sea level. On road you pass along river through deciduous (apple, apricot, asp, birch) and coniferous (spruce) belts. Further the road is going up to Observatory (2750 m, here the Hotel exists) and Kosmostation (3300 m) through juniperus belt and alpine meadows surrounded by cliffs, crumbled stones with moraine and glacier nearby. Various habitats have different breeding species. Ruddy Shelduck, Black Grouse, Himalayan Snowcock, Chukar Partridge, Common Quail, Common Pheasant, Lammergeier, Eurasian Sparrowhawk, Eastern Buzzard, Golden Eagle, Common Kestrel, Merlin, Hobby, Barbary Falcon, Corn Crake, Ibisbill, Eurasian Woodcock, Oriental Turtle

Dove, Common Cuckoo, Hawk Owl, Eurasian Scops Owl, Tengmalm's Owl, Great Spotted Woodpecker, Three-toed Woodpecker, Shore Lark (probably), European House Martin, Tree Pipit, Water Pipit, Masked Wagtail, White-throated Dipper, Brown Dipper, Wren, Black-throated Accentor, Brown Accentor, Alpine Accentor, Himalayan Accentor, Himalayan Rubythroat, Blue-headed Redstart, Eversmann's Redstart, Common Redstart, Guldenstadt's Redstart, Northern Wheatear, Rock Thrush, White's Thrush, Blue Whistling Thrush, Blackbird, Mistle Thrush, Common Whitethroat, Greenish Warbler, Hume's Warbler, Olivaceous Leaf Warbler, Goldcrest, Severtzov's Tit-warbler, Tien-Shan Willow Tit, Coal Tit, Azure Tit, Great Tit, Wallcreeper, Eurasian Treecreeper, Turkestan Red-tailed Shrike, Magpie, Nutcracker, Yellow-billed Chough, Red-billed Chough, Western Jackdaw, Carrion Crow, Common Raven, Common Starling, Common Mynah, Red-fronted Serin, Grey Goldfinch (ssp. *paropanisi*), Hodgson's Rosy Finch, Brandt's Rosy Finch, Common Crossbill (ssp. *tianschanica*), Common Rosefinch, Tien-Shan Red-mantled Rosefinch, Red-breasted Rosefinch, White-winged Grosbeak and Rock Bunting can be observed as breeding here. On migration Spotted Flycatcher, Dusky Warbler, Black-throated Thrush, Bluethroat and some others can be met too. But for several days it is impossible to observe all these birds, as some of them are very rare and have restricted distribution.

Syugaty valley (170 km east of Almaty) surrounded with low ridges Syugaty, Boguty and Turaigyr, artesian well near Burundysu ($43^0$42'N $78^0$39'E), Charyn ash-tree Grove with Yellow and Red Canyons are visited by ornithologists often. Here many raptors breed (Lammergeier, Himalayan Griffon, Eurasian Black Vulture, Short-toed Eagle, Long-legged Buzzard, Upland Buzzard, Steppe Eagle (rare), Eastern Imperial Eagle, Golden Eagle, Booted Eagle, Lesser Kestrel, Common Kestrel, Hobby, Saker Falcon, Barbary Falcon) and Black Stork, Chukar Partridge, Demoiselle Crane, Greater Sand Plover, Black-bellied Sandgrouse, Pallas's Sandgrouse, Stock Dove (ssp. *yarkandensis*), Collared Dove (ssp. *stoliczkae*) and Laughing Dove (in villages on road), Common Cuckoo, Eurasian Scops Owl, European Roller, Hoopoe, White-winged Woodpecker, Bimaculated Lark, Short-toed Lark, Lesser Short-toed Lark, Asian Short-toed Lark, Crested Lark, Barn Swallow, Red-rumped Swallow (in villages on road), European House Martin, Tawny Pipit, Grey Wagtail, Masked Wagtail, Rufous Bush Robin, Common Nightingale, Isabelline Wheatear, Pied Wheatear (including *vittata*), Desert Wheatear, Cetti's Warbler, Savi's Warbler, Sykes' Warbler, Barred Warbler, Lesser Whitethroat, Orphean Warbler, Hume's Lesser Whitethroat, Long-tailed Tit, Great Tit, Grey Tit, Eurasian Treecreeper (very rare), Black-headed Penduline Tit, Golden Oriole (ssp. *kundoo*), Turkestan Red-tailed Shrike, Long-tailed Shrike, Lesser Grey Shrike, Magpie, Western Jackdaw, Rook, Carrion Crow, Common Raven, Common Starling (ssp. *porphyronotus*), Rose-coloured Starling, Common Mynah, House Sparrow, Indian Sparrow, Spanish Sparrow, Saxaul Sparrow, Tree Sparrow, Rock Sparrow, Greenfinch, Grey Goldfinch, Linnet, Crimson-winged Finch, Desert Finch, Mongolian Finch, Pine Bunting, White-capped Bunting, Rock Bunting, Grey-necked Bunting, Red-headed Bunting and Corn Bunting too.

Merke Gorge is very interesting in Kirgizskiy Alatau Ridge (near 350 km west of Almaty; $42^0$55N $73^0$14E) where decidous and juniperus forest with alpine meadows and vast rocky and crumbled stones parts exist. Here you can observe Himalayan Snowcock, Chukar Partridge, Lammergeier, Himalayan Griffon, Eurasian Black Vulture, Hobby, Blue Hill Pigeon, Wood Pigeon, Oriental Turtle Dove, Common Cuckoo, Eurasian Scops Owl, Grey Wagtail, Long-tailed Shrike, Lesser Grey Shrike, Common Mynah, Red-billed Chough, Yellow-billed Chough, White-throated Dipper, Brown Dipper, Black-throated Accentor, Common Whitethroat, Hume's Lesser Whitethroat, Greenish Warbler, Hume's Warbler, Olivaceous Leaf Warbler, Severtzov's Tit-warbler, Blue-headed Redstart, Eversmann's Redstart, Blackbird, Mistle Thrush, Blue Whistling Thrush, Black Crested Tit, Yellow-breasted Azure Tit, Black-headed Penduline Tit, Red-fronted Serin, Linnet, Common Rosefinch, Tien-Shan Red-mantled Rosefinch, Great Rosefinch, White-winged Grosbeak, Rock Bunting and some others, as this area not well investigated.

Korgalzhyn reserve (Central Kazakhstan close to new capital Astana, 1200 km north of Almaty; $50^0$29N $70^0$00E) also attract attention of foreign ornithologists as here the northernmost breeding colony of Greater Flamingo, small colonies of Sociable Lapwing exist, Black Lark and White-winged Lark are very common on breeding too. It is very interesting that Short-eared Owl hunted here for Steppe Lemming (*Lagurus lagurus*) by day, as this is day animal. Many ducks (including White-headed Duck), gulls, terns, waders and small Passerine inhabited reed-beds live here, and in summer thousands of waterfowl gathered for moult on Tengiz Lake (especially Common Shelduck) and swans and river ducks on fresh-water lakes. In July-August a lot of waders (up to 1 million of Red-necked Phalarope only) migrate through this area and stopped for rest and feeding on many lakes.

Kazakhstan Altai also attracts ornithological attention, but it is far of Astana (above 2000 km) and of Almaty (near 2000 km), have bad mountain roads and close borders with China and Russia do this

trip not easy. Though here you can observe on breeding such birds as *Melanitta deglandi*, Black-throated Diver, Hazel Grouse, Willow Grouse, Ptarmigan, Black Grouse, Capercaillie, Altai Snowcock, Black Stork, Eastern Buzzard, Long-legged Buzzard, Upland Buzzard, Osprey, Altai Falcon, Peregrine Falcon, Corn Crake, Common Crane, Dotterel, Common Sandpiper, Great Snipe, Pintail Snipe, Swinhoe's Snipe, Solitary Snipe, Oriental Cuckoo, Pigmy Owl, Ural Owl, Great Grey Owl, Tengmalm's Owl, White-throated Needletail, Pacific Swift, Wryneck, Grey-headed Woodpecker, Black Woodpecker, Great Spotted Woodpecker, White-backed Woodpecker, Lesser Spotted Woodpecker, Three-toed Woodpecker, European House Martin, Olive-backed Pipit, Tree Pipit, Citrine Wagtail, Masked Wagtail, White-throated Dipper, Black-throated Accentor, Himalayan Accentor, Siberian Rubythroat, Bluethroat, Siberian Blue Robin, Red-flanked Bluetail, Eversmann's Redstart, Black Redstart, Common Redstart, Guldenstadt's Redstart, Common Stonechat, Rock Thrush, Black-throated Thrush, Song Thrush, Fieldfare, Mistle Thrush, Sedge Warbler, Blyth's Reed Warbler (very numerous), Barred Warbler, Lesser Whitethroat, Common Whitethroat, Greenish Warbler, Hume's Warbler, Dusky Warbler, Olivaceous Leaf Warbler, Common Chiffchaff, Willow Warbler, Goldcrest, Spotted Flycatcher, Sooty Flycatcher, Long-tailed Tit, Marsh Tit, Willow Tit, Siberian Tit, Coal Tit, Great Tit, Eurasian Nuthatch, Eurasian Treecreeper, Penduline Tit, Red-backed Shrike, Turkestan Red-tailed Shrike (and hybrids between them), Great Grey Shrike, Eurasian Jay, Siberian Jay, Magpie, Nutcracker, Yellow-billed Chough, Red-billed Chough, Western Jackdaw, Rook (ssp. *pastinator*), Carrion Crow, Hooded Crow, Common Starling (ssp. *poltaratskyi*), House Sparrow, Tree Sparrow, Common Chaffinch, Brambling, Grey Goldfinch (ssp. *subulata*), Linnet, Twite, Common Redpoll, Hodgson's Rosy Finch, Rosy Finch, Two-barred Crossbill (breeds ?), Common Crossbill (ssp. *altaiensis*), Common Rosefinch, Pine Grosbeak, Long-tailed Rosefinch, Grey Bullfinch, Pine Bunting, Yellowhammer and their hybrids, Rock Bunting, Ortolan Bunting, Yellow-breasted Bunting and Red-headed Bunting. During migration some additional species can be observed too.

Who is interested in ringing and study of birds-in-hand (species and sex-age differences, moulting, photography) can visit **Chokpak Ringing Station**, which situated in Western Tien Shan (between Djambul and Chimkent, 600 km west of Almaty; $42^0$31N $70^0$38E). Here on joint of Djabaglytau ridge (2900 m) and Borolday ridge (1600 m) many birds concentrated (as in "bottle-neck") during migration especially in autumn when above 100 thousand can be count for two morning hours. Near 300 bird species registered here. When head wind birds fly wery low and some of them fly into stationary traps (12 m in height and 40 m in width), but when tail wind they pass by on great altitude. Therefore catching depends on weather condition and yearly numbers fluctuation of birds. Though passage migration on Chokpak Pass predominated, some birds stopped for rest in forest belts and mist netting used here succsessfully. From 1966, when the Station was organized, 1624342 birds were ringed here (at spring 1042528, at autumn 581814). Recoveries were received from Eastern and Western Siberia, China, Kyrgyzstan, Uzbekistan, Turkmenistan, Tadjikistan, Azerbaydjan, French, Kenya, South Africa Republik and India. Out of interesting species it can be mention such as Daurian Partridge, Oriental Honey Buzzard, Shikra, Eastern Buzzard, Upland Buzzard, Booted Eagle, Osprey, Lesser Kestrel, Merlin, Water Rail, Corn Crake, Stone Curlew, Eurasian Woodcock, Yellow-eyed Stock Dove, Striated Scops Owl, Eagle Owl, Blue-cheeked Bee-eater, Wryneck, White-winged Woodpecker, Eastern House Martin, Buff-bellied Pipit, Yellow Wagtail (ssp *leucocephala*, in spring), Black-backed Citrine Wagtail (*Motacilla calcarata*), Wren, Black-throated Accentor, Robin, White-throated Robin, Blue-headed Redstart, Eversmann's Redstart, Black Redstart, Pied Stonechat, Pied Wheatear, Desert Wheatear, Naumman's Thrush, Red-throated Thrush (hybrids with Black-throated Thrush), Song Thrush, Blyth's Reed Warbler, Upcher's Warbler, Garden Warbler, Barred Warbler, Orphean Warbler, Menetries's Warbler, Arctic Warbler, Pallas's Leaf Warbler, Yellow-browed Warbler, Olivaceous Leaf Warbler, Paradise Flycatcher, Red-breasted Flycatcher, Yellow-breasted Azure Tit, Grey Tit, Isabelline Red-tailed Shrike, Red-backed Shrike, Long-tailed Shrike, Brown-necked Raven, Rock Sparrow, Greenfinch, Siskin, Crimson-winged Finch, Desert Finch, Mongolian Finch, Tien-Shan Red-mantled Rosefinch, White-capped Bunting, Rock Bunting, Ortolan Bunting, Grey-necked Bunting, Reed Bunting, Red-headed Bunting and Corn Bunting. In last years we successfully try to attract some birds in mist nets or stationary traps by CD-player but this not well developed now.

When "dead" days, it is possible to visit nearby interesting points for birding and ringing. **Stone Lake** (42'49N 70'56E) situated east of Karatau ridge, 50 km of Chokpak. Nearby Little Bustard, Long-legged Buzzard, Lesser Kestrel (colony), Short-toed Eagle, Egyptian Vulture, Eagle Owl, Eastern Rock Nuthatch, Collared Pratincole, Rose-coloured Starling (colony), Bimaculated Lark can be observed. On lake very effective place for mist-netting exists and many breeding and migrating Passerines can be catched here (Great Reed Warbler, Clamorous Reed Warbler, Reed Warbler,

Paddyfield Warbler, Blyth's Reed Warbler, Savi's Warbler, Bearded Tit, Penduline Tit, Common Rosefinch, Cetti's Warbler, Moustached Warbler, Bluethroat, Common Chiffchaff and others, but Common Kingfisher, Water Rail, Little Bittern and Baillon's Crake sometimes too. Some Ducks, Gulls, Terns, Great Crested Grebe, Common Coot, Eurasian Bittern, Blue-cheeked Bee-eater and Black Stork can be observerved too. Near 30 km further **Berkara gorge** (42'57N 70'33E) exists, where Paradise Flycatcher, Spotted Flycatcher (ssp. *zarudnyi*), Lesser Grey Shrike, Common Nightingale, Grey Tit and Black-headed Penduline Tit breeds in quite high numbers.

Very beautiful for birding and mist-netting of small Passerine and waders is **Kyzylkol' Lake** ($43^0$44'N $69^0$31'E), situated in foothills of Karatau ridge 250 km from Chorpak. Here you can observe many ducks (Pintail, Gadwall, Common Pochard, Red-crested Pochard, Common Shelduck, Ruddy Shelduck, Marbled Duck), Common Coot, Great Crested Grebe, Dalmatian Pelican, Black Stork, Black-bellied Sandgrouse, Pin-tailed Sandgrouse, Oriental Turtle Dove, Baillon's Crake, Common Kingfisher, European Nightjar (ssp *sarudnyi, unwini*), Common Whitethroat, Lesser Whitethroat (ssp *halimodendri, curruca, minula, jaxartica*), Barred Warbler, Garden Warbler, Great Reed Warbler, Clamorous Reed Warbler, Reed Warbler, Paddyfield Warbler, Cetti's Warbler, Common Chiffchaff, Willow Warbler, Hume's Warbler, Greenish Warbler, Moustached Warbler, Yellow Wagtail (ssp *flava, beema, thunbergi*), White Wagtail, Black-headed Wagtail, Isabelline Red-tailed Shrike, Turkestan Red-tailed Shrike, Rufous Bush Robin, Bluethroat, Common Stonechat, Northern Wheatear, Isabelline Wheatear, Spotted Flycatcher, Common Rosefinch, Grey Goldfinch, Desert Finch, Red-headed Bunting. Many waders stop here for rest and feeding, Black-winged Stilt, Common Redshank, Greater Sand Plover, Caspian Plover, Red-necked Phalarope, Little Stint, Temminck's Stint, Curlew Sandpiper, Common Sandpiper, Little Ringed Plover, Ringed Plover, Kentish Plover, Terek Sandpiper, Northern Lapwing and some other. Many larks (Bimaculated Lark, Eurasian Skylark, Lesser Short-toed Lark, Short-toed Lark, Crested Lark) live in this area too and fly for water on lake and arthesian well (we saw several times White-winged Lark too). In August – September many White-headed Duck stop on migration (2838 were counted by Andrew Grieve in 14-17 September 2001, and 1000 9 April 2002), near 20 thousand Ruff and 12 thousand Demoiselle Crane in early September 2005. Near 30-40 km further in Karatau ridge there is **Griffon Vulture colony** (43'16N 68'40E), where near 15-20 pairs breeding (in September nestlings are at the nests else). Here you can observe White-throated Robin, Rock Thrush, White-throated Dipper, Red-headed Bunting, White-capped Bunting, Orphean Warbler, Hume's Lesser Whitethroat, Eastern Rock Nuthatch, Rose-coloured Starling and other birds.

From Chokpak Station it is possible to organise special ringing trip on above points and 600-1300 birds can be ringed for two weeks. As an example, we bring results of such trip in 2005 (Appendix 3). The oldest in Kazakhstan Aksu-Djabagly reserve located 30 km west of Chokpak Station with pictorial Aksu canyon can be visited too, where you can observe Lammergeier (*Gypaetus barbatus*), Eurasian Black Vulture (*Aegypius monachus*), Brown Dipper (*Cinclus pallasii*), Blue Whistling Thrush (*Myophonus caeruleus),* Black Crested Tit (*Parus rufonuchalis*), Tien-Shan Red-mantled Rosefinch (*Carpodacus rhodochlamys*) and some others. If you wish to visit Chokpak Station please write to Andrey Gavrilov (agavrilov@nursat.kz).

ANNOTATED SPECIES LIST

Main species list

ANSERIFORMES

1. **Mute Swan** *Cygnus olor* (Gmelin, 1789)

Breeds and migrating practically everywhere in plain Kazakhstan. In 7 November 1973 four birds recorded in highland (Big Almaty Lake; Kovshar, Lopatin, 1983). Wintering on Northern Caspian Sea, Mangyshlak. In mild winters observed on Aral Sea near Barsa-Kelmes I. (Gistsov, 1978), occasionally to the south of Turkestan and Chimkent.

Common breeding migrant. Inhabits fresh and salty lakes with reed beds and reed mace. Appears end February – early March in southern areas, and end March – early April in northern ones. Migration continues to end April – mid-May. Breeds in separate pairs up to 500-1500 m one another. The big nest is built in reed or mace beds in shallow water from dry reed stems. The inner cup is not lined especially, but some pieces of water grass and down appear in them during incubation. Clutches of 3-7 eggs mid-April – early May, but sometimes early – end June, which can be replacement clutches. Female mostly incubates, male only changes over for a short time. Juveniles hatch end May - June and begin to fly in August – September, but sometimes only at end October. Adults moult in the presence of brood, immature birds moult in flocks of several hundred individuals on big lakes. Autumn migration lasts from end August – September to mid – end October or mid December, when lakes begin to freeze. Adults with offspring leave together. Huge concentrations are formed in shallow water of Northern Caspian Sea in autumn. Birds ringed at Kurgaldzhino Lakes were found in winter on Caspian Sea (Kara-Bogaz-Gol, Dagestan), at Kabardino-Balkariya and at Kherson Region and Krym, Black Sea (Andrusenko, 1990).

2. **Bewick's Swan** *Cygnus bewickii* Yarrell, 1830

Occasionally occurs during migration in Naurzum Reserve (Blinova, Blinov, 1997; Bragin, Bragina, 2002), Volga-Ural region (Belik *et al*., 1997; Debelo *et al*., 1999), in Utva-Ilek area (Berezovikov *et al*., 1992; 2000), in Kustanay area (Erokhov, Berezovikov, 2002), on Turgay and Ul'kayak rivers (Khrokov *et al*., 1990), on Kurgaldzhino lakes (Andrusenko, 2002), in areas adjacent to Northern Caspian Sea (Varshavskiy, 1987), on Aral Sea, Alakol' depression at Tentek delta (25 and 27 April 2002; Berezovikov, 2002, 2002b), on Irtysh river and Markakol' lake. One obtained 17 January 1900 at Dzharkent on Ile river.

Rare passage migrant seen in April – May, exceptional large flock of 120 birds observed 4 June 1986 in lower Turgay river. Observed in small groups and more often singly with other Swans. Regularly recorded in end September – October.

3. **Whooper Swan** *Cygnus cygnus* (Linnaeus, 1758)

Breeds in northern half of Kazakhstan; south to lower reaches of Turgay river (Grachev, Eszhanov, 1999) and Balkhash-Alakol' depression; sometimes lives in deltas Ili and Lepsy, on Sasykkol lake (Dolgushun, 1960) and on Markakol' lake (Berezovikov, 1989a). Isolate breeds at Tekesskiy reservoir in Central Tien Shan (Berezovikov, Belyalov, 1999). Not nesting in Kurgaldzhin (Krivizkiy *et al*., 1985), but one nest was found 5 June near Shortandy (Kovalenko, Kovshar, 2004). On migration occurs everywhere in plain Kazakhstan. Wintering on Northern Caspian Sea, sometimes to the south of Turkestan and Chimkent, in recent years on Sorbulak lake (Belyalov, Karpov, 2005).

Common breeding migrant. Inhabits large fresh and slightly salty lakes with vast reed beds. Appears very early, when lakes not yet free from ice, mid – end February or early March in southern areas, and in early – end April in central and northern ones. Migrates in small flocks, rarely more than 50 birds. At breeding sites they arrive in pairs and don't nest close one another. The big nest is built among reed and mace beds and constructed from dry stems of reed and other vegetation. Inner cup lined with dry stems of reed, mace and sedge. Clutches of 3-7, more often of 4-6 eggs in early April – end May. Only female incubates 35-40 days. Juveniles hatch mid-May – June. Both parents rear them. Autumn migration from end August to end October – early December.

4. **Swan Goose** *Cygnopsis cygnoides* (Linnaeus, 1758)

Occurs in Zaysan depression, on Chernyy Irtysh and upper course of Irtysh rivers where recorded up to 2000. Previously seen on migration in Ile river at April 1944, in middle Syrdarya (mid April 1907, 1

March 1908), near Dzharkent (20 March and end April 1897) and on Markakol' lake (Dolgushin, 1960). Recent years add no new information. At once 17 January 1909 obtained on Syrdarya. On Markakol' not recorded recently (Berezovikov, 1989a).

Very rare breeding migrant. Inhabits edges of lakes and rivers with half-flooded willow thickets. Arrives early March – mid-April. Breeds in separate pairs. Nest is built in a shallow hole on ground from dry grass and lined with down. Clutches of 4-9, more often of 5-6 eggs. Only female incubates, male is nearby. Both parents rear juveniles, which observed early June, feathered juveniles in first decade to mid-July. Moulting birds from broods were shot in July. No information about autumn migration.

5. **Bean Goose** *Anser fabalis* (Latham, 1787)

fabalis *– extremely obvious individual variations. Lower mandible varies from less heavy and poorly curved to deeper and more bent. Male bill size: length 52-67 (61 at middle), height 26.4-34.5 (30.3), variation in height of the lower mandible 6-10 (7.8) mm. Scapulars and wing coverts are darker, brown, with smaller amount of grey colour. A strip on bill and legs are more often yellow-orange, less often pinkish or reddish. Male wing length 430-480 (450) mm.* Occurs on migration throughout Kazakhstan, and sometimes wintering in southern Kazakhstan, on Sorbulak lake (Belyalov, Karpov, 2005), on Kapchagay reservoir in December 2002, and in November – mid December last 10-15 years 1-5 thousand concentrates on Kolzhat lake near the border with China, though subspecies not identified (Zaynutdinov, 2002a; Erokhov, 2002b). In 18-21 December 2003 one bird recorded on Chardara reservoir (Erokhov, Belyalov, 2004), at Sorbulak 34 birds at 6 November-12 December 2004 (Belyalov, Karpov, 2005)

middendorffii *– individual variability rather insignificant. Lower mandible less heavy and also less curved. Male bill size: length 67-90 (76), height 32.6-37.6 (34.8), variation in height of the lower mandible 7-10 (9) mm. Feather colouring similar to fabalis. A strip on bill and legs are always orange. Largest race. Male wing length 465-553 (496) mm.* Probably before nested on Markakol' lake in Southern Altai, however not recorded recently (Berezovikov, 1989a). Occasionally occurs during migration.

Not rare, but sporadical distributed passage migrant and\or occasional winter visitor. In spring migrates from first half of March up to end March - mid May in southern Kazakhstan. In more northern areas, migration lasts from mid-March – early April to end April. Autumn movement continues from mid – end September to end October – early November. Migrates in independent flocks usually of some dozen birds and with other geese.

6. **White-fronted Goose** *Anser albifrons* (Scopoli, 1769)

albifrons – occurs on plains from Volga-Ural region and coast of Caspian Sea east up to Semipalatinsk, Zaysan and Chimkent.

Common passage migrant, numerous in western, north-western and northern Kazakhstan, common in centre and rare in eastern, south-eastern and southern areas. Occurs in areas of green grass or on cereal fields (feeding), and on lakes (resting). Prefers to be in large flocks and rarely observed singly or in small groups. In spring appears early or mid-March near Turkestan and Chimkent. In more northern areas arrives in April, though near Petropavlovsk at late spring first birds were observed 9 May only. Main migration second half of April – early May. Last birds observed early June. Autumn migration rarely starts early – mid-September, but normally during second half September and continues to mid – end October. Not wintering in Kazakhstan.

7. **Lesser White-fronted Goose** *Anser erythropus* (Linnaeus, 1758)

Occurs in plains of Kazakhstan from Volga-Ural area in the west up to Semipalatinsk, Karaganda and Turkestan. In 9 March three birds recorded on Kopa river (Karpov *et al*., 2004).

Fairly common passage migrant seen mostly in western and north-western Kazakhstan. Occurs in areas of green grass or on cereal fields (feeding), and on lakes (resting). Spring migration lasts from mid-April to early May; autumn migrating from mid – end September to end October. Not wintering in Kazakhstan. They prefer to be with White-fronted Geese; separate flocks of 20-50 birds are rare. Ringing has proved that birds from Finland have been found in Kustanay region, and from Yamal Peninsula in Aktobe, Kustanay and Akmola regions (Tolvanen *et al*., 1998).

8. **Greylag Goose** *Anser anser* (Linnaeus, 1758)

Breeds and migrating practically everywhere, except waterless areas and heigh mountain ridges of Tien Shan. Previously nested on Markakol' lake where now observed on migration only (Berezovikov, 1989a). In mild winters occur in small numbers in the lower Arys and Keles rivers.

Common breeding migrant. Inhabits fresh lakes with reed, reed mace, rush and other vegetation mostly in river valleys, wet meadows and marshes. On migration feeds in stubble fields and rests on steppe lakes. Appears very early, when there are small snow-free patches at end February – early March in the south, and mid-March – mid April in the northern regions. Migrates in flocks of several dozen up to a hundred birds. Migration continues for about two weeks. Breeds by singles pairs. Nest is built, as a rule, among reed-beds but on dry patches and also dense floating stems of old reeds, from dry reed stems and leaves, inner cup lined with reed and rush leaves, and also goose-down. Clutches of 3-9 eggs, of 4-6 eggs more often, mid-March – end May. Female incubates 27-28 days, male vigilantly guards nearby. Juveniles hatch end April – mid-June. Both parents rear young. Offspring begin to fly end June – early August. Adults moult from end May – beginning of June and became flying end July – beginning of August. Then they concentrate on stubble fields, feeding at dark and returning in morning to open water for rest. Autumn migration from early September or October and continues until reservoirs freeze in November.

9. **Snow Goose** *Anser caerulescens* (Linnaeus, 1758)

hyperboreus – stray birds recorded in plain Kazakhstan, from Urda up to Zaysan depression. Close to Urda one bird 20 June 1926, near Furmanovo 6 October 1958 two birds, on Kamysh-Samarsky lakes 10 August 1984 6 birds, on Bitik reservoir 17 April 1985 12 birds, in lower Irgyz river 10 October 1894 and two birds 4 October 1898, in delta of Selety river in end July three birds, north of Zaysan lake in September 1914. Above Taraz 21 January 1988 a flock of 10 birds observed (Kolbintsev, 1994).

Very rare passage migrant, which was observed in spring and autumn (January, April, July, August, September, October) singly or in small groups. D.Nankinov (1997) believes, that in Bulgaria the Snow Goose came from Western Siberia and also from areas adjacent to Caspian Sea.

10. **Barnacle Goose** *Branta leucopsis* (Bechstein, 1803)

Several stray birds (one was shot) observed in autumn 1900-1901 on Irtysh river (Yablonskiy, 1904). Next record was 4 May 1999 on wheat stubble field near Vishnevka village, Kustanay region. A flock of 22 birds observed 27 August 1998 on Sorkol lake (on the border with Russia) by G.A.Chervyakov (Erokhov, Berezovikov, 2000). One bird recorded on Kurgaldzhino lakes 19 October 1991 (Andrusenko, 2002).

Rare passage migrant. Occurs with flocks of other geese in May, August and October.

11. **Brent Goose** *Branta bernicla* (Linnaeus, 1758)

bernicla – singles and small flocks observed in Northern Kazakhstan (Drobovzev, Vilkov, 1997; Erokhov, 1999), on Naurzum Reserve (Bragin, Bragina, 2002), Selety lake, Kurgaldzhino lakes (21 October 1993; Andrusenko, 2002; Koshkin, 2003), in Zaysan depression, Sasykkol' lake (12 birds 15 October, 1994; Berezovikov, 1999b) and on Sorbulak lake close to Almaty (Erokhov, 1997). Regular autumn migration over lakes of Pavlodar area, where morning counts of small flocks of up to 30 during 1970s and throughout 1990s - only 2-3 in autumn (Solomatin, 1999b).

Very rare passage migrant. Often occurs on big lakes, together with other geese. In spring migrates in early March – end May, in autumn in October.

12. **Red-breasted Goose** *Branta ruficollis* (Pallas, 1769)

On migration seen mainly in Western and Northern Kazakhstan – in valley of Ural river 60 km east of Ural'sk and in Volga-Ural region (Levin, 1978; Vinokurov, 1982; Shevchenko *et al*., 1993; Debelo *et al*., 1999), and also in Naurzum Reserve (Bragin, 1991). When birds return to wintering grounds at Caspian Sea, its numbers on Turgay depression begin to grow from 1987 and now they are common in Naurzum Reserve (up to several thousand in 1990-1997; Bragin, Bragina, 2002) and in Northern Kazakhstan (in 1995 – 7.5 thousand; Drobovzev, Vilkov, 1997; Belezkaya *et al*., 1997). Less frequently observed on Kurgaldzhin lakes 17-23 April 1977 (Krivizkiy *et al*., 1985), in Pavlodar oblast (recently each autumn 2-3 flocks of 10-15 birds; Solomatin, 1991, 1999b), on Syrdarya river, in Zaysan depression and Ile river delta (Dolgushin, 1960; Pridatko, 1991). Stray birds recorded on northern cliffs

of Ustyurt, 10 October 1949, 12 birds (Varshavskiy *et al*., 1977), on Kopa river, 31 March 2001 (Belyalov *et al*., 2002), and on Markakol', 2 October 1900 (Yablonskiy, 1907).

Common, locally rare or accidental, passage migrant. Occurs on fresh and salty lakes in independent flocks, and together with other geese or Rusty Shelduck. In spring migrates end March – mid-April to beginning of May; in autumn – from end September to early November (mainly in first half of October).

13. **Bar-headed Goose** *Eulabeia indica* (Latham, 1790)

Status not clear. At beginning of XX century probably nested on Markakol' lake (Berezovikov, 1989a), where obtained 27 July 1900. Occasionally observed on Kaskelen River near Almaty, 29 May 1951 (Grachev, 1953), in Zaysan depression in early August 1946 (Samusev, 1958), north of Zaysan in September 1914 and on Kurgaldzhin lakes 3 July 1985, moulting bird, and in October 2000 (Andrusenko, 1986a; Koshkin, 2002) and at Dzharkent 13 April 1913. I.A.Dolgushin (1960) supposed breeding probably in Saur ridge and upper Tekes River, but this not confirmed up to present. At Bayankol obtained 25 April 1902. A pair of birds at source of Kegen' river observed on 8 June 1993 (Kovshar, Gubin, 1993a). One bird recorded at Bartagoy reservoir 16 May 2004 (Kovshar, 2005).

Accidental vagrant, which was obtained and recorded in April – May and August – October.

14. **Ruddy Shelduck** *Tadorna ferruginea* (Pallas, 1764)

Breeds and also widespread on migration, both on plains, and in mountains up to 2500-3000 m in Tien Shan and 1500-2000 m on Altai. Wintering south of Chimkent, sometimes on the middle current of Ile river close to Dzharkent and in lower reaches of Charyn river. In mild winters near Barsa-Kelmes on Aral Sea (Gistsov, 1978), 50 birds recorded 2 December 2002 in Western Tien Shan (Chalikova, 2002), two birds observed 11 January 2004 on unfreezing sream near Aksuek, and on Sorbulak lake Up to 150 birds in January 2004, up to mid December 2004 300-700 birds recorded on fields, but when frost begins only 3 birds observed at 25 December (Belyalov, Karpov, 2004).

Common breeding migrant. Inhabits steppe and desert near fresh and salty lakes, ponds and small temporary water source, and rocky mountains near lake, usually not well forested up to 3000 m in Tien Shan and 2000 m on Altai. During migration occurs mostly on lakes; cereal and stubble fields are also visited. Appears mid February or March in south of Kazakhstan and April in more northern areas. Migrates in pairs or small flocks, up to ten birds. Breeds in separate pairs, often not far apart. Sometimes it nests as far as 10 km away water and small chicks are obligated to go this distance by foot. Both parents escort them, many perish and fall victim to prey. Nest is built underground in holes of mammals (fox, corsac, marmot and wolf) or under stones in cliffs, and in holes of Asiatic Poplar or rarely in old haycocks. Clutches of 7-17, more often of 9-12 eggs in early April – mid-May. Only female incubates, male guards nearby. Juveniles hatch in mid-May – end June. Both parents care juveniles, which stay on wing in middle of July – first decade of August. Sometimes in July several broods join up; 8 adults were observed with 30 young, and 10 with 60 offspring. Migration on moult of flight feathers occurs end May – early July, large concentrations (hundreds and thousands) formed on Tengiz lake, Balkhash and Sorbulak lake not far from Almaty. Before migration they very often feed on stubble fields. In autumn they migrate in flocks of 50 and more birds, mostly in September, latest records end October – late November.

15. **Common Shelduck** *Tadorna tadorna* (Linnaeus, 1758)

Breeds and also widespread on migration everywhere in plain Kazakhstan, and at Tuzkol lake about 2000 m, close to Tekes village. Sometimes winters on Syrdarya river at the confluence of Keles river and Arys river. Stray bird observed 25 April 1977, two birds, on Markakol' lake (Berezovikov, 1989a). In mild winter observed on Sorbulak lake in small numbers (Belyalov, Karpov, 2004).

Common, in places numerous breeding migrant. Found in vicinity of salt lakes on plains. Appears with first thawed patches, when most land is snow covered from mid-February in south and in March or April in more northerly areas. Migrating mostly in small flocks, but large flocks of 50 and more birds can be met too. Arrives at breeding sites in pairs, nesting not far from one another. Prefers to breed in flat desert and steppe plains near (up to 2-3 km) to salt lakes, where *Artemia salina* is their main food. Nests are placed in old underground holes of fox or marmot, in old graves, winter huts, stone piles, but open nests among salt-marsh vegetation and reed beds are rare. In some cases, birds burrow underground holes by themselves. Nest cup lined with dry grass and down. Clutches of 6-18, more often of 8-10 eggs in early April – mid June, but latest ones are probably repeated. Only female incubates, male watches

nearby. Downy chicks observed from mid-May to early July, juveniles fly mid-June – end August. Both parents care for chicks and different broods sometimes join up to more than 50 offspring with one or several adults. In July - August adults fly for moult to large salty lakes (Tengiz, Karasor, Selety-Teniz and others), where they concentrate in thousands. Autumn migration begins in September – first half of October, some birds linger to mid-November.

16. **Eurasian Wigeon** *Anas penelope* Linnaeus, 1758

Breeds in northern part of Kazakhstan, south to Ural'sk, Kurgaldzhino (Khrokov *et al*., 1977), Karaganda and Markakol' lake. Probably, nests in Naurzum Reserve, but this not proved jet (Bragin, Bragina, 2002). Widespread during migration.

Common breeding migrant. Inhabits forested and shrubby river valleys and mountain lakes up to 1600 m. Appears early March – April, main movement end March – first decade of April, but in more northern areas end April – early May. Latest records mid-May in southern Kazakhstan. Nest is built under canopy of bush or high grass near water, but in some cases up to 1 km away, in shallow hollow lined with dry grass stems and down. Clutches of 6-9 eggs recorded from late May – end June. Juveniles hatch mid-June, mainly July, and begin to fly mid-July – late August. Most males moult in shallow steppe lakes with reed-beds in Central and Northern Kazakhstan, where they also gather from Siberia and Kazakhstan (June – July). Autumn migration begins mid-August, peak movement September – beginning of October. Some birds linger to end November. Last years singles and small groups wintering on Sorbulak lake near Almaty and at more southern areas.

17. **Falcated Duck** *Anas falcata* Georgi, 1775

Several times recorded near to borders of Kazakhstan, close to Omsk, in steppe adjacent to Aley river. At first time obtained by N.A. Zarudnyy 28 October 1906 on Syrdarya at the mouth of Keles river. On Sorbulak lake close to Almaty a single male was collected 3 April 1999 (Zhiryakov, 1999a, 1999b) and one male observed 31 March 2002 (Belyalov, Karpov, 2002). Very rare passage migrant.

18. **Gadwall** *Anas strepera* Linnaeus, 1758

Breeds and widespread during migration on plains, except waterless areas of Mangyshlak, Ustyurt and Betpak-Dala, in Southern Altai and by places in Tien Shan. Three birds recorded in highland, at Big Almaty Lake 29 August 1972 (Kovshar, Lopatin, 1983). Wintering in the extreme south of the Republic, in mild winters at Barsa-Kelmes I. on Aral See (Gistsov, 1978). But 15 males recorded on Sorbulak lake close to Almaty 15 December 2002 (Belyalov, Karpov, 2002).

Common breeding migrant, locally abundant. Inhabits steppe, desert and forested lakes or rivers, prefers reservoirs with reed and mace beds, both on plains and in mountains up to 2000 m. Appears end February – early March in the south of Kazakhstan, and end March – mid-April in central and northern areas. Migrates in small flocks of up to three dozens birds, often with other ducks. Nest is built near the shore, but sometimes up to 2 km from water. Breeds in separate pairs, but at western shore of Alakol' lake loose colonies on small islands of 15-20 pairs with nests 5-20 m distance from one another were observed. Nest is a shallow hollow on the ground, lined with dry grass stems and down under canopy of grass or bush, and very rarely among reed-beds. Clutches of 5-11 eggs end April – late June. Female incubates 27-28 days. Juveniles hatch late May – mid-July, and begin to fly end July – late August. Repeat brood after loss of clutches is common (late broods recorded end September – early October). After females begin to incubate males gather in flocks and flying for moult on shallow steppe lakes in Northern and Central Kazakhstan (from end May, mainly June – July). Autumn migration in Northern Kazakhstan not well marked, and birds leave here in September – first decade of October, but in southern areas they begin to migrate mid-August, mainly September – October. Latest records in end October – first decade November.

19. **Baikal Teal** *Anas formosa* Georgi, 1775

Stray birds were shot 17 April 1950 on Irtysh river close to Ust-Kamenogorsk, 15 April 1950 in Zaysan depression and 24 December 1907 near confluence of Keles and Syrdarya river. Very rare passage migrant.

20. **Eurasian Teal** *Anas crecca* Linnaeus, 1758

crecca – occupies northern half of Kazakhstan, south to Ural'sk, Atbasar, Naurzum Reserve (Bragin, Bragina, 2002), Southwest Altai and Zaysan depression, but not nesting in Kurgaldzhin

(Krivizkiy *et al*., 1985). Widespread on migration, occasionally in highlands (Big Almaty Lake, 27 August and 4-7 September 1971; Kovshar, Lopatin, 1983). Sometimes wintering in the south and south east of country, at once recorded at Kul'sary settle on Emba river. (Neruchev, 1968).

Common breeding migrant, locally numerous. Inhabits largely forested lakes, rivers, streams and marshes on plains and in mountains up to 2000 m on Altai. Appears end February – early March in southern areas, and end March – mid-April in the northern. Main migration in April and it finishes early May. Migrates in separate flocks up to some dozen specimens, often with other ducks. Nest is built on ground under shelter of grass or bushes in shallow hollow lined with dry grass and down. Clutches of 6-9 eggs mid-May – end June. Only female incubates. Juveniles hatch mid-June – mid-July, and begin flying from end July. Repeated breeds are common (downy chicks recorded mid-July, and not flying juveniles at end August – mid-September). While females incubate, males gather in flocks and fly away to moult on shallow steppe lakes in Central Kazakhstan. Such moult migration observed from mid-July. Autumn migration begins end August, most intensive movements second half September – early October. Some birds linger up to first decade of December.

21. **Mallard** *Anas platyrhynchos* Linnaeus, 1758

platyrhynchos – breeds and recorded on migration throughout Kazakhstan, including mountain lakes (Markakol' lake; Berezovikov, 1989a) and on Dzhabagly ridge in Talasskiy Alatau ridge (Kovshar, 1999). Wintering in the south, sometimes in south-eastern Kazakhstan, where are common, and on unfrozen lakes at Kul'sary village (Neruchev, 1968). In mild winters observed on Aral Sea near Barsa-Kelmes (Gistsov, 1978). Annually common on Sorbulak lake and in Western Tien Shan foothills.

Common breeding migrant. Inhabits fresh or salty lakes, rivers and also small streams both on plains and in mountains up to 2200 m in Western Tien Shan, and 1500-1800 m in Altai. Arrives very early in spring, when first thawed patches of earth appear. In south Kazakhstan migration begins mid- or end February, in more northern areas in March, and near Petropavlovsk and on Markakol' lake early – mid-April. Migration occurs in pairs or small separate flocks, but mostly with other ducks. Nest is built under grass, bushes, among reeds and in old Crow nests in trees. It is constructed from grass stems and lined with down which is plentiful close to hatching. Clutches of 5-11 eggs mostly in April – May, probably repeat clutches recorded in early – late June. Juveniles observed from mid-May onwards, mainly June – July, and in July – August they often fly. After females begin incubation, males gather in flocks and fly away for moult to shallow steppe lakes with reed-beds mainly in Central Kazakhstan (Kurgaldzhin, Turgay, Naurzum etc). Autumn migration begins end August, but in most areas they disappear in October - November, before open water freezes.

22. **Pintail** *Anas acuta* Linnaeus, 1758

acuta – breeds in northern half of Kazakhstan south to Kamysh-Samarskiye lakes, lower reaches of Turgay and Zaysan depression, sporadically up to Almaty area (Sorbulak lake). Occasionally lives on mountain lakes (Markakol' lake). Widespread on migration, sometimes winters to the south of Chimkent. A pair recorded on Sorbulak 15 December 2002 (Belyalov, Karpov, 2002).

Common, locally abundant breeding migrant. Inhabits steppe and semi-desert lakes and rivers with reed-beds, and very rarely forested lakes in Altai up to 1500 m. Appears very early, with first thawed patches, when lakes are covered with ice. In southern areas arrives end February – early March; in more northerly areas March or early April. Migrates in separate flocks, mostly in tens and hundreds, males are dominant. Latest records in southern areas end May. Nest is built in a dry place near water, but in some cases up to 6 km away, under canopy of grass or bush in shallow hollow lined with grass stems and down. Clutches of 6-10 egg from end April, but mostly May or early June. Female incubates 22-23 days. Juveniles hatch end May – mid-July, and begin to fly from mid-June, late broods observed first decade of August. Repeat broods after loss of clutch are common (mid – end June). When females begin to incubate males gather in flocks and migrate for moult in steppe and semi-desert lakes in Northern and Central Kazakhstan mainly end May – June. Females moult whilst with brood. Autumn migration not so obvious as in spring, and begins end August, mostly in September. Main movements in October, and some birds linger to end November.

23. **Garganey** *Anas querquedula* Linnaeus, 1758

Breeds throughout Kazakhstan, including southern Altai (Markakol' lake; Berezovikov, 1989a) and Ural river delta (Gistsov, Berezovikov, 1995), excluding Aral Sea and adjacent deserts. Widespread on migration, sometimes visits highlands (Big Almaty Lake, 7 September 1971, 29 August 1972 and 5

August 1973; Kovshar, Lopatin, 1983). Occasionally winters south of Chimkent, in lower reaches of Arys and Keles rivers.

Common, locally numerous, breeding migrant. Inhabits open lakes and marshes in steppe and desert, avoiding forest lakes, and also locally in mountains up to 1500 m in Altai. Appears somewhat later than other ducks mid-March, but mainly April. Migrates in small flocks, often with other ducks, and movement finishes about mid-May. Nest is built on ground near water (sometimes up to 2 km away) under canopy of grass or bush and on dry tussocks at marsh edge. Shallow hollow lined with dry grass and down. Clutches of 7-10 eggs end April – mid-July. Female incubates 21-24 days. Juveniles hatch mid-June – end July and fly mid-July – early August. Repeat brood after loss of clutches is common. After females begin incubation, males fly away for moult in shallow steppe or desert lakes (end May, mainly June – early July). Autumn migration begins mid-August or early September, peak movement September – October and completed end October, though some birds linger to early November.

24. **Shoveler** *Anas clypeata* Linnaeus, 1758

Widespread on breeding in plains of Kazakhstan, except Mangyshlak and Ustyurt. Occurs in Southern Altai (Markakol' lake; Berezovikov, 1989a). Seen everywhere on migration. Very rarely wintering south of Chimkent, near Keles and Syrdarya confluence. On Sorbulak lake 15 birds recorded 1 December 2002 (Belyalov, Karpov, 2002).

Common, locally abundant breeding migrant. Inhabits plain and mountain lakes and rivers with reed and reed mace beds, up to 1500 m in Altai and 2000 m in Tien Shan. Appears somewhat later (for 10-15 days), than Mallard and Pintail, in early March or April. Migrates in small independent flocks, rarely with other ducks, and by mid-May migration is over. Nest is built under cover of grass or bush, in colonies with gulls and terns often for protection from prey, not far from water, on ground in shallow hollow lined with dry grass and down. Clutches of 7-11 eggs end May – early July. Juveniles hatch early June – end July, and begin to fly from mid-July up to mid-August. Clutches loss from prey frequent and repeat nesting is common. After females begin incubation, males gather in flocks up to a thousand and fly for moult (end May – July) in shallow steppe and desert lakes with reed-beds and other rich vegetation (Naurzum, lower Turgay, Kurgaldzhin). Autumn migration begins mid-September and continues until mid – end October.

25. **Marbled Duck** *Anas angustirostris* Menetries, 1832

Previously nested on Northern Caspian Sea, Kamysh-Samarskiye lakes, in valley of Syrdarya and on Telekol' lakes. Last observed in Western Kazakhstan in September 1953 (six birds; Debelo, 1991) and two birds recorded 15 April 1963 in Tuma natural boundary (Shevcheko *at al*., 1993). Restoration of this species in Uzbekistan (Mukhina, 1999) enables to assume it can occur as a nesting bird in Kazakhstan. On Kyzylkol' lake near Karatau mountains two birds were recorded on 2 August 2000 (Knistautas, 2001) and on 15-18 September 2003 (Gavrilov, Kolbintsev, 2004).

26. **Red-crested Pochard** *Netta rufina* (Pallas, 1773)

Breeds mostly in the south of Kazakhstan, to north up to Kamysh-Samarskiye lakes, Ilek river, Kustanay, Kokchetav, Semipalatinsk and Chernyy Irtysh river. On dispersal and migration seen throughout, sometimes winters south of Turkestan. On Sorbulak lake 36 birds recorded 1 December 2002 (Belyalov, Karpov, 2002).

Common, locally numerous, breeding migrant. Inhabits fresh and salty lakes with reed-beds and large areas of open deep water on plains. Arrives somewhat later, than other ducks, rarely in end February but mostly in March – mid-April. Migration finishes in mid-May. Migrating in small (one-two dozen) flocks, in pairs and singly. Nest is built in shallow hollow from dry grass stems and down, on ground near water under cover of bushes, or more often in reed-clamps among water, from dry reed leaves and lined with down. Breeds in separate pairs or in small groups of 5-15 pairs close together often with White-eyed Pochard. Clutches of 5-12 eggs in second half of April, but mostly in May. Female builds nest and incubates 28 days roughly. Juveniles hatch from mid-May to early July. They fly end of July – late August. After females begin to incubate, males gather on lakes with deep water and reed beds in big numbers and moult here (end June – July). Autumn migration in big flocks (up to hundred and more) begins September and from northern areas they leave mid - end October. In southern areas they migrate in October up to water freezing.

27. **Common Pochard** *Aythya ferina* (Linnaeus, 1758)

Breeding in northern half of Kazakhstan, south to Kamysh-Samarskiye lakes, lower reaches of Turgay river and Zaysan depression; sporadically further south up to Ile river delta and Syrdarya valley. Widespread on dispersal and migration. Wintering in the extreme south of the Republic. On Sorbulak lake 20 birds recorded 15 December 2002 (Belyalov, Karpov, 2002).

Common breeding migrant and numerous on migration. Inhabits fresh and salty steppe lakes and rivers with well developed reed-beds, prefers deep water, both on plains and in mountains up to 1500 m in Altai. Appears somewhat later than river ducks, in early March – mid-April. Migrates in separate flocks from some dozen up to 100-150 birds. As a rule, movement is finished by mid-May. Nest is built in reed-beds, on shallow water or on meadow tussocks and in flooded forests from dry reed leaves and other vegetation and lined with down. Clutches of 5-14 eggs in late April – end June. Female incubates 24-26 days. Juveniles hatch end May – early July, and begin to fly end July – late August. After females begin incubation, males gather on large deep lakes and moult here (end May – mid-July). Autumn migration begins in September, peak movement end September – October; some birds linger into November, when water freezes.

28. **Ferruginous Duck** *Aythya nyroca* (Guldenstadt, 1770)

Breeding mainly in southern half of Kazakhstan. Northern limit is not well known and probably passes through lower reaches of Kushum and Ilek rivers, Selety lake, around Semipalatinsk, Chiliktinskaya valley (a brood recorded 12 July 1963) and Chernyy Irtysh river delta. Previously (in 1930-1950) nested in Naurzum Reserve, but now only recorded during migration (Bragin, Bragina, 1999). Widespread on migration and occasionally winters south of Chimkent and in lower reaches of Charyn river. Vagrant observed 1 October 1900 on Markakol' lake (Yablonskiy, 1907).

Before it was common, but now a rare breeding migrant. Inhabits deep lakes with rich reed-bed and other vegetation. Appears early March – late April, sometimes even early May. Migrates in small groups of 10-30 birds and also in pairs. Nest is built in reed-beds, on floating old reed stems, muskrat homes or very rarely at edge of water under cover of bushes, from old reed leaves and lined with down. Clutches of 6-15 eggs early May – end of June. Only female incubates 25-28 days, male stay nearby. Juveniles hatch early June – mid-July, and begin to fly end July – August. Often both parents rear brood. No moult migration or moult concentration recorded. Autumn migration begins third decade September; some birds recorded end October – mid-November.

29. **Tufted Duck** *Aythya fuligula* (Linnaeus, 1758)

Breeds in northern Kazakhstan, south to lower reaches of Uzen', Irgiz and Turgay rivers, mouth of Kengir river, Ust-Kamenogorsk area, on Markakol' lake, upper Bukhtarma river (Dolgushin, 1960) and in foothills of Altaiskiy Tarbagatay ridge (Berezovikov, Rubinich, 2001). A brood recorded 18 July 1990 on Alakol' lake (Berezovikov, Erokhov, 2004). Widespread on migration; occasionally winters in Ile valley, and in lower reaches of Keles river. On Sorbulak lake near 100 birds recorded 10 February and 200-1000 birds 3 November – 15 December 2002 (Belyalov, Karpov, 2002),

Common breeding migrant and numerous during migration. Inhabits steppe lakes and rivers with reed-beds or willow bushes, and mountain lakes with forested shore up to 1500 m in Altai. Appears end February – early March in southern regions, and early – mid-April in the north. Migrates mainly at night and at dawn in small flocks of several dozen, but sometimes 100-150, resting by day, gathering in big numbers. Migration completed by end May. Breeds in separate pairs. Nest is built on shore near water in shallow hollow, on small islands or on floating reed stems from dry grasses, reed leaves and lined with down. Clutches of 6-12 eggs end May – early July. Juveniles hatch early June – end July, and may not fly until end August. Moulting males noted mid-July – August, but it is not known where they concentrate. Autumn migration is very late, from mid- or end September, and continues until water freezes, early – mid-November.

30. **Greater Scaup** *Aythya marila* (Linnaeus, 1761)

Migrates throughout Kazakhstan plains from Volga-Ural area to Balkhash-Alakol' depression. Single bird recorded in Volga-Ural territory 27 July 1935 , in Naurzum 22 July 1935, 12 June 1945 and 30 June 1934, on Alakol' lake 21 May and 15 July 1987 (Khrokov *et al*., 1993). Observed on Aral Sea at Barsa-Kelmes I. in mild winters (Gistsov, 1978). On Sorbulak lake singles recorded 18 January – 13 March 2004 (Belyalov, Karpov, 2004). One shot near Tashkent 18 December.

Passage migrant, common in western half of Kazakhstan, but rare in eastern. Occurs on large deep lakes, and on wide rivers. Appears in first decade or mid-April in small groups and flocks up to 50 birds; latest record end May. Single birds observed June – July. Autumn migration continues from mid-September – mid-October.

31. **Long-tailed Duck** *Clangula hyemalis* (Linnaeus, 1758)

Migrates mainly in western half of Kazakhstan, to east up to Petropavlovsk (Drobovzev, Vilkov, 1997b), Kokchetav, Kurgaldzhino (Krivizkiy, 1965; Andrusenko, Khrokov, 1981) and Turkestan. Occasionally winters on Chardara reservoir (Auezov, Bikbulatov, 1972), one bird recorded on Sorbulak lake end October – mid December 2002 (Belyalov, Karpov, 2002), 2 February 2003 (Belyalov, Karpov, 2004a) and seven birds 12-19 December 2004 (Belyalov, Karpov, 2005). On lake in Ilek river basin obtained 7 July, close to Aktuybinsk 20 June 1883 moulting male obtained, in Naurzum 6 birds recorded 19 July 1929, on Mangyshlak near Bautino 26 June 1951 a moulting duck was caught, and 8 June 1952 one male.

Rare passage migrant. Occurs on fresh and salty lakes and on rivers. In spring recorded April – first decade May in small flocks of one-two dozen birds. Singles and small groups seen in June and July; shot males had moulting primaries. In autumn singles and small groups of Long-tailed Duck recorded October and first decade November.

32. **Common Scoter** *Melanitta nigra* (Linnaeus, 1758)

Seen on migration near Presnovka village in Northern Kazakhstan (Drobovzev, Vilkov, 1997b), on Shiganak in Pavlodar region (Solomatin, 1999b), around Kustanay, on Chu (17 September 1925, one bird) and Syrdarya (30 October 1909) rivers. Male and female recorded 2 June 1963 near Presnovka.

Very rare passage migrant. Occurs on big lakes and rivers. In spring observed mid-April, in autumn recorded mid-September and end October.

33. **White-winged Scoter** *Melanitta deglandi* (Bonaparte, 1850)

stejnegeri – breeds on mountain lakes of Southern Altai, in Bukhtarma valley near Rakhmanovskiye lakes, on lake at source of Bukhtarma river, in western Kara-Alakhinskoye upland to plateau Ukok (Dolgushin, 1960; Starikov, 1991; Pridatko, 1991; Berezovikov, Rubinich, 2001). One brood recorded at Kalbinskiy Altai, on lake in pine forest, in 1961 by I.A. Dolgushin. On Markakol' lake observed during seasonal migration only (Berezovikov, 1989a).

Rare breeding migrant. Inhabits forested mountain lakes at 1760-2300 m. Appears end May – early June. One nest found near water under bush, in a hollow amongst moss lined with down. Clutches of 6-9 eggs in June – July. Only female incubates and cares for juveniles, recorded end July – early September. Males gather to moult on big mountain lakes. Autumn departure in October.

34. **Velvet Scoter** *Melanitta fusca* (Linnaeus, 1758)

Breeding by places on lakes in Central and Northern Kazakhstan (Kurgaldzhino, Saumalkol' lake, Borovoye lake), also on Malybay lake in the Pavlodar region (Solomatin, 1999b). Seen at summer in Semipalatinsk area adjacent to Irtysh river, where in mid-July 1961 a pair observed during several days and later a male only (possibly nesting?) (Panchenko, 1968). At once second-year male shot 18 July 1984. On migration recorded from coast of Mangyshlak and lower reaches of Ilek river to middle Syrdarya river, around Semipalatinsk and on Kapchagay reservoir (Erokhov, 2002d).

Rare breeding migrant. Inhabits fresh and slightly salty lakes with reed beds and large areas of deep water. In spring migrates mid-April –end May in pairs and small flocks of up to a dozen birds. Nest is built on ground under grass canopy (up to 1 km from lake) from dry grass and reed leaves or on floating dry reed-bed heaps among shallow water. Clutches of 7-10 eggs mid-June – early July. Most juveniles hatch in July. Autumn migration continues mid-September – end November.

35. **Common Goldeneye** *Bucephala clangula* (Linnaeus, 1758)

clangula – breeds in valleys of middle parts of Ural and Ilek rivers, in Naurzum Reserve on Malyy Aksuat lake (Bragin, Bragina, 2002), in Kokchetav upland, in Semipalatinsk area, on Chernyy Irtysh river and on Southern Altai (Markakol' lake). At once a brood recorded in upper Bukhtarma river, on lake near Uryl' village 23 June 2001 (Berezovikov, Rubinich, 2001). Widespread during migration. Rare wintering in southern and south-eastern Kazakhstan; in particular on Sorbulak lake, where two birds recorded 15 December (Belyalov, Karpov, 2002) and 10-30 from November till April (Belyalov,

Karpov, 2004); in mild winters on Barsa-Kelmes I. in Aral Sea (Gistsov, 1978) and also on Markakol' lake (Berezovikov, 1989a). Two birds observed on Kzylkol lake 20 April 2005.

Common breeding migrant. Inhabits forested lakes and slow flowing rivers with fish, both on plains and in mountains up to 1700-1750 m in Altai. Appears very early, in southern areas migrates from end February to mid- or end April; in northern areas from April to mid- or end May. Migrates in flocks of 10-30, rarely 100 birds by day and by night. Nests in separate pairs in tree holes (Poplar, Birch, Larch) 2-10 m above ground, and very rarely on ground between tree roots or in rock faces. Readily accepts wooden nest boxes. Female clears old nest from tree hole. Nest cup lined only with down. Clutches of 7-12 eggs in mid-May – mid-June. Female incubates 30 days and rears juveniles which hatches mid-June – mid-July, latest birds begin to fly mid-September. Males and unmarried birds gather for moult on big lakes end May – early July. Autumn migration lasts from early September to end October – mid-November.

36. **Smew** *Mergus albellus* Linnaeus, 1758

Breeding on valley of Chernyy Irtysh river, on middle and lower parts of Ural river, south to Mergenevo village. Widespread on migration, including Altai (Irtysh river, Markakol' lake). Rare wintering on open water of Sorbulak lake, in valley of Chu river, middle part of Syrdarya river and on Caspian Sea. One recorded 15 Febuary 1964 near Kul'sary village (Neruchev, 1968).

Rare breeding migrant, but during spring and autumn its numbers are quite high. Inhabits forested rivers and lakes. Appears on small patches of open water mid February – April, in pairs or small flocks, and migration ends mid – end May. Breeds in separate pairs. Nest is built in tree holes (Poplar, Willow, Elm), lined with plenty of down, not far above ground. Clutches of 8-11 eggs, probably in June as small chicks observed early July. Autumn migration lasts often in flocks of 50-100 birds from September, most numerous in October. Movement finishes in November when lakes freeze.

37. **Red-breasted Merganser** *Mergus serrator* Linnaeus, 1758

Breeding on Balkhash lake, Alakol' lake, on lakes of Kokchetav uplands and in Southern Altai (middle part of Bukhtarma river, Markakol' lake). Widespread on migration, occasionally winters to the south of Turkestan, also on Irtysh river near Ermak (Solomatin, 1999a) and on Sorbulak lake where 3 birds recorded at 1 December 2002 (Belyalov, Karpov, 2002).

Rare breeding migrant. Inhabits fresh or salty fish lakes and rivers, both on plains and in mountains up to 1500 m on Altai. Appears early – end April in pairs and small groups. Breeds in separate pairs not far apart, probably in loose colonies. Nest is built in holes between stones from dry grass, nest cup lined with plenty of down. Clutches of 9-12 eggs in early June; broods observed July – mid-August. At autumn migrate during October.

38. **Goosander** *Mergus merganser* Linnaeus, 1758

merganser *– male in breeding plumage has darker upper parts; light stripes on rump are more conspicuous and sharper; black edges on scapulars and inner secondaries are narrow, no more than 1.2 mm wide. Female head is dark chestnut. Male bill length 51-61 (57); female 40-52 (48) mm.* Breeds in Kokchetav uplands, in Kalbinskiy Altai at Sibinskiye lakes, in Western and Southern Altai on Ul'ba and Bukhtarma rivers (Berezovikov, 2002e), on Saur, Tarbagatay and Dzhungarskiy Alatau ridges. Widespread on migration. Rare wintering on Irtysh river, Bukhtarma river, Markakol' lake and lakes of southern and south-eastern Kazakhstan; in mild winters on the Aral Sea at Barsa-Kelmes (Gistsov, 1978).

comatus *– male in breeding plumage has lighter upper parts; light stripes on rump are more dense and a little less sharp; black edges on scapulars are wide, reaching 2.2 mm. Female head is somewhat lighter. Male bill length 48-56 (51.5), female 40-47 (44) mm.* Breeds in Tien Shan, two broods recorded mid-June 2002 on Bartagoy reservoir (Zaynutdinov, 2002b).

Quite common breeding migrant. Inhabits lakes and rivers where fish is plentiful, both on plains and in mountains to 1500-2000 m. Appears early before ice breaks, mid February or early March, but at Markakol' lake sometimes as late as end April or early May (Berezovikov, 1989a); and migration finished mid – end April. They fly singly, in pairs or in small flocks. Breeds in separate pairs. Nest is built from dry grass lined with plenty of down near water, in tree holes, in cliffs between stones or on ground under bushes. Clutches of 8-15, usually 8-9 eggs in third decade May – first half June. Female incubates about 32 days. Juveniles hatch early June, but mainly first half of July, and fly end June – late September. Sometimes several broods join with one female. Autumn migration is late; end September – October and continues until water freezes in November – mid December.

39. **White-headed Duck** *Oxyura leucocephala* (Scopoli, 1769)

Before bred very widely on fresh or slightly salty lakes of Kazakhstan (Dolgushin, 1960). Latterly occasionally found in central and western areas (Pridatko, 1991), in Naurzum Reserve (Gordienko *et al*., 1986; Bragin, Bragina, 2002), and also in Northern Kazakhstan (Drobovzev, Koshelev, 1980). Not found in lower reaches of Syrdarya river (Poslavskiy, 1991c). One male recorded 14 July 2001 on Shoptykol' lake near Zharma station (Berezovikov, Rubinich, 2001). A brood recorded 11 June 2004 on Alakol' lake (Berezovikov, Levinskyi, 2005). In last decade its numbers increased. Widespread on migration. A total of 2833 birds recorded on Kyzylkol' lake near Karatau ridge 14-17 September 2001 (Balmer, Betton, 2002), almost 1800 mid-September and 800 birds mid-October 2002 (Gavrilov, Kolbintsev, 2002a), and 2000 in September 2003 (Gavrilov, Kolbintsev, 2004).

Rare breeding migrant. Inhabits fresh and slightly salty deep lakes with reed-beds and open water on plains. Appears very late, rarely mid March, mainly April – end May. Migrates in small flocks of up to two dozen; migration probably mainly at night. Breeds in separate pairs. Nest is built from fresh reed leaves and rarely lined with down, on water in reed-beds or on floating old reed stems. Clutches of 5-7 very large eggs end May – mid-July. Juveniles recorded mid-June – end August. I.A. Dolgushin (1960) suggested White-headed Duck does not brood eggs constantly as they can incubate independently. Barely noticeable autumn migration from mid-September to end October; some birds linger until mid-November.

GALLIFORMES

40. Hazel Grouse *Tetrastes bonasia* (Linnaeus, 1758)

septentrionalis – breeding in mountain forest of Altai and in pine forest of Kalbinskiy Altai.

Rare resident. Inhabits dense mixed forests with bushes and high grass, and in fir and spruce forest very rare, at 1450-1700 m. Breeds in separate pairs. Nest is built at dense forest on ground in shallow hole under bush, tree or in moss and lined with grass and leaves, thin twigs are included sometimes. Clutches of 6-10 eggs from early May onward. Only female incubates and care juveniles, which hatch in June – early July. Sometimes males stay nearby. Broods of flying juveniles observed in August. Autumn displaying in September, when pairs formed, and during winter they stay in pairs or in groups up to 10-14 birds, which occurs very rare.

41. **Willow Grouse** *Lagopus lagopus* (Linnaeus, 1758)

major *– black colour on upper parts well developed, sated. Black centres of feathers well developed too. Cross strips pale, their colour varies from pale-rusty to whitish. Feathers of upper parts with wide white or whitish top borders. Picture on upper parts motley. Crop and breast pale-rusty. Male wing length 208-235 (224), female 208-222 (215) mm, bill length of males 11-13 (12.4), of females 11.3-12.2 (11.8) mm.* Breeds in forest steppe of Northern Kazakhstan on east up to foothills of Western Altai. At once a pair recorded at Ural valley near Budarino village 11 June 1950 (Kuzmina, 1960). In Naurzum Reserve disappears in mid 1960-th and northern border go to north more than 150 km (Bragin, Bragina, 2002). In winter sometimes occurs at Kurgaldzhino village (Krivizkiy *et al*., 1985) and at once a flock was met in 25 January 1982 not far of Urdzhar (Starikov, 2002).

brevirostris *– black colour of upper parts has sated tone. Cross strips light, their colour varies from yellowish to whitish, they are narrow and located frequently. Black colour of crop and breast more developed than* ***major****. Male wing length 187-216 (205), female 182-208 (193) mm, bill length of males 8.5-11.4 (10.3), of females 7.5-10.5 (9.4) mm.* Breeds in highlands of Southwest Altai, from 1300 up to 2700 m, where autumn-winter dispersion took place too. The isolated population found in Saur ridge (Scherbakov, 1999a).

Rare, in places common resident. Inhabits birch-asp groves, hummock marshes with willow bushes and riparian forest (*L.l.major*), or alpine meadow with pygmy birch thickets (*L.l.brevirostris*) at 1300-2700 m. Breeds in separate pairs, which forms in end February – March, but most of the year lives in flocks of 30-80 birds. Nest is built on ground under bush or grass close (50-100 m) to grove or inside it in shallow hole lined with thin twigs and grass, but sometimes without anything. Clutches of 9-12 eggs in early – end May. Only female incubates beginning from last egg for 18 days, male guards nearby. Chicks hatch in May – June, and both parent rear them a long time. *L.l.brevirostris* breeds some later. Clutches found in end May – mid-June, juveniles hatch in late June or early July.

42. **Ptarmigan** *Lagopus mutus* (Montin, 1776)

nadezdae – breeds in mountain tundra with stony looses on Southwest Altai and in Saur ridge.

Rare resident. Inhabits alpine tundra with many stones and scarce vegetation at 2000-2700 m. Breeding biology is known very poorly. Begins to nest in end May or early June, the nest with 4 eggs was found 12 June 2004 (Starikov, 2005b). Small chicks observed in end June – mid-July. No vertical movements were registered (Berezovikov, 1989a).

43. **Black Grouse** *Tetrao tetrix* (Linnaeus, 1758)

viridanus *– wing "mirror" wide. White colour developed on inner primaries. Metal shine has greenish-bluish shade, at populations to east of Irtysh river valley mainly bluish – dark blue shade. Tertials and greater coverts in full dress have poorly expressed spotted picture. General colour of female lighter, more ochre and greyish, less rusty. Rare females of dark morph with prevalence of brown tones occur. Male wing length 250-282 (268), female 225-250 (239) mm.* Breeds in northern plains of Kazakhstan from Ural river valley up to foothills of Altai and in Kalbinskiy Altai. The southern border distribution known badly. Observed in Kyzyltau Mts. near Zhaman-Dalba (Chelzov-Bebutov, 1978a), in Kazakhskiy upland nests south up to Ulytau and Zhel'tau (*per* Yu.S.Lobachev). Between Altai, Tarbagatay ridge and Chingiztau intergrades with ***mongolicus***.

mongolicus *– wing "mirror" a little narrower than* ***viridanus****. Metal shine dark blue with purple or pink shade. General colour of female somewhat darker than* ***viridanus****. In upper parts dim-brown shades well developed, black streaks less expressed. A median under part somewhat darker; whitish feather tops on upper parts developed more poorly, grey shade also developed more poorly than* ***viridanus****. Male wing length 273-296 (277), female 242-263 (250) mm.* Breeds in Tien Shan, Dzhungarskiy Alatau, Tarbagatay and Saur ridges, in Kalbinskiy Altai and Southwest Altai. Both subspecies occur in the Kalbinsky Altai, while intergrades occurs between Kalbinsky Altai, Tarbagatay and Chingiztau.

Common, in places rare resident. Inhabits riparian woods, deciduous (birch, oak, elm, asp and other) and coniferous groves with shrubs, both on plains and in mountains at up to 1900 m on Altai and 2500 m in Zailiyskiy Alatau. Spring displaying (up to one hundred males) begins in March (on plains) or in April (in mountains), and continues up to end May or early June. Nest is built by female near of mating place usually, under shelter in shallow hole lined with grass and moss. Clutches of 4-12 eggs in mid-April – end June. Only female incubates for 19-25 days and cares of juveniles, which hatch in early June – mid-July. In August – September birds joined in flocks (males separately of females), which fly to cereal stubble fields for food (when available) and to forest for roost regularly.

44. **Capercaillie** *Tetrao urogallus* Linnaeus, 1758

taczanowskii *– general colour of males darker than* ***uralensis****. Grey tone on head, upper neck and back, and white colour on under parts less developed than* ***uralensis****. General colour of females non significantly darker than uralensis.* Breeding in Southwest Altai.

uralensis *– general colour of males lighter than* ***taczanowskii****. Upper parts with maximal development of grey tone; brown tone here lighter than* ***taczanowskii****. White colour on under parts widely distributed. General colour of females a little lighter than* ***taczanowskii****. Male wing length 384-418 (400), female 291-314 (303) mm.* Occurrence in tape pine forests on right shore of Irtysh river is possible. Dispersing birds observed in Chaldayskiy pine forest at Galkino village (Solomatin, 1999a). What subspecies lives in Kalbinskiy Altai is not known.

Rare resident. Inhabits pine and spruce groves and larch forests with bushes and deciduous trees on plain and in mountains at 1450-1900 m. Males display in small groups (of 3-10 birds) in April or May. Nest is built by female on southern slopes mostly, under bush in shallow hole lined with thin twigs and grass. Clutches of 6-8 eggs in early – mid-May – early June. Only female incubates and care juveniles, which hatch in end May – early July. In September – October they join in flocks (males separately of females) and begin to disperse in nearby areas with plenty of food at more than 50 km.

Note. Capercaillie was introduced in Kokchetav pine forest of in 1912 (Kuzmina, 1962), and also in 1964 and 1986 from the Kirovskaya Province and Novosibirskaya Province, where it successfully lives until present (Kovshar, 1996a).

45. **Himalayan Snowcock** *Tetraogallus himalayensis* G.R.Gray, 1843

sewertzowi *– upper parts more light.* Breeds in Dzhungarskiy Alatau and Tien Shan.

saurensis *– upper parts more dark, white stain on under breast almost or completely absent.* Breeds in Saur and Tarbagatay ridges (Potapov, 1993).

Common, but in places rare resident. Inhabits alpine and sub-alpine meadow with rocks and cliffs, small patches of meadow and juniper bushes at 900-1500 m in Dzhungarskiy Alatau and 2500-3300 m in Zailiyskiy Alatau. Breeds in separate pairs, males sing loud from March. Nest is built by female under stone or in hole between stones, on ground from dry grass stems and twigs lined with grass and feathers. Clutches of 5-16 eggs in mid-April – early June, one lay every two days. Copulation observed as late as early May. Only female incubates for a month roughly, chicks hatched in mid-May – late June. They stay in broods with one or two parents up to September - October, then birds join in flocks and when snow cover ground somewhat lower to southern slopes with rocks, where vegetation exist. In places several hundred or thousand occurs in winter.

46. **Altai Snowcock** *Tetraogallus altaicus* (Gebler, 1836)

Breeding on Southern Altai, occupying alpine meadows with outlets of rocks.

Very rare resident. Inhabits alpine meadows with rocks and stone slopes, alpine tundra with many stones and scarce vegetation. Breeding biology is known very poorly. Broods of small chicks observed in early July, at 1300-3000 m. No nest found up to present.

47. **Chukar Partridge** *Alectoris chukar* (J.E.Gray, 1830)

shestoperovi *– general colour light. Crown brownish, slightly pinkish. Olive colour on lower back well expressed. Black cross strips on flanks wide enough. Male wing length 160-168 (162), female 152-160 (156) mm.* Breeding on Mangyshlak and in Ustyurt.

subpallida *– general colour the same as* ***shestoperovi****, but with more sandy and less greyish shade. Male wing length 161-165 (163), female 148-157 (152) mm*. Breeding in Kyzylkum desert and occurs in southern Kazakhstan.

falki *– general colour darker than* ***shestoperovi*** *and* ***subpallida****. A little more intense of grey and wine tones of upper parts do these paints by more contrast. Male wing length 155-175 (167), female 151-163 (158) mm.* Occupies Tien Shan, including Karatau ridge and Chu-Iliyskiye Mts, rocks on Ile and Kurty rivers.

dzungarica *– general colour darker, brown colour on crown distributed more widely, olive colour on wings more poorly developed than* ***falki****. Male wing length 157-160 (159), female 152-160 (156) mm.* Breeding in Dzhungarskiy Alatau, Tarbagatay and also in Saur, Monrak and Southern Altai (Berezovikov, 1992).

Common, in places rare resident. Inhabits broken terrain, deserted mountains, chinks and rocky gorges with shrubs, open slopes and water nearby, up to 2700 m. Most of the year lives in flocks of up to 50-100 birds, which in spring (March or April) break on pairs. Breeding territories not large, and pairs can nest at 100-150 m one of other. Nest is built by female or with help of male under bush, grass or stone in shallow hole lined with grass. Clutches of 7-22 eggs in end March – early June. When conditions are favourable, female builds two nests and lay two clutches, one of which incubated by male (brood patches formed), other one by female. After hatching, both broods join. Incubation begins from last egg and continues 23-25 days. One (female or male) or two birds care juveniles. Repeated breeding after loss of first clutches not rare. In August broods join in flocks, and birds disperse nearby from its breeding territories. Rainy summer (May – June) and snowy winter (December – February) the main reasons for decline numbers at separate years, which restore rapidly.

48. **See-see Partridge** *Ammoperdix griseogularis* (Brandt, 1843)

It was met in June 1941 on Ustyurt (to the south of Sam sands, approximately 45^0N, 56^0E) and in Central Kyzylkum desert near to border of Kazakhstan (Kuzmina, 1962). No recent information. Usually occupies lover zone of deserted mountains, clay and sandy precipitates with ravines and very scarce vegetation. The biology is not known.

49. **Grey Partridge** *Perdix perdix* (Linnaeus, 1758)

lucida *– general colour dark, with the poorly expressed olive or ash-grey shade on upper parts. Sizes somewhat smaller than* ***robusta****. On upper wing coverts, on back and lower back cross picture from brown or brownish-black strips (on rump and upper tail coverts they rather wide) developed. "Cap" on crown formed from almost merging black spots and bordered with narrow grey strip. Ear feathers brown or black-brown. Throat and head sides greyish-red. Jetting picture on craw very fine at males and almost invisible at females. Belly stain brownish-red or brown. Flanks with reddish-brown spots.* Breeding in Volga-Ural area.

robusta *– general colour more light, grey tone cleaner than* ***lucida****. Size larger, than at other races, wing rather long and narrow. Ashy shade on upper parts absent often or is insignificantly developed only on scapulars and lower back. Crossed strips on rump and upper tail coverts narrow. Sides of head and neck in front brownish-reddish. Ear feathers somewhat darker than general background. "Cap" bordered precise grey (frequently bluish-grey) strip. Breast cleaner of grey colour. Crop covered with precise rough picture from thin and rare black cross strips. Spots on flanks brownish-red or light brown. Stain on belly dark-brown or black-brown.* Breeding in northern Kazakhstan from Ural river valley up to Altai (Bukhtarma, Markakol' lake), to the south up to Mugodzhary ridge, upper reaches of Tobol and Ishim rivers and Zaysan depression.

arenicola *– general colour lighter, sizes smaller, wing more rounded and wide than* ***robusta****. "Cap" small, brownish, grey bordering it strip frequently absent. Sides of head and throat light, yellowish-red. Ear feathers and hind neck grey. Picture on crop precise and rare, but not such bright, as at* ***robusta.*** *Belly stain small (at females frequently absent), dark brownish-red or chestnut-red. Flanks dark-red or chestnut-red spots which significantly darker than at other races. Upper parts greyish-beige with picture from dim cross brown or light-brown strips, frequently with sandy or smoking shade. Rectrices with chestnut or reddish shade.* Breeding in southern Kazakhstan from Mugodzhary ridge up to Tarbagatay and Zaysan depression, to the south up to northern Ustyurt (Varshavskiy, 1965), Syrdarya valley, foothill plains and low altitude of Tien Shan.

Common resident. Inhabits forest edges, riparian forest, forest-belts, groves and shrubby steppe both on plains and in mountains up to 2000 m. Most of the year they live in flocks, which in spring (March) break up on pairs. Nest is built under bush or grass in shallow hole lined with grass stems and leaves. Clutches of 11-26 eggs in April – May. Only female incubates from last egg for 21-26 days, but rare male helps her. Chicks hatch in June, but in August – early September some broods with half-grown chicks recorded also. Repeated breeding probably recorded. In autumn they disperse on fairly big distance, though details not known.

Note. Grey Partridge from Naurzum Reserve on sizes, colour and form of wing top essentially differs from ***robusta*** and ***arenicola***, deserving allocation in independent race, but it is not enough of collection skins from this area (Pavlova, 1987).

50. **Daurian Partridge** *Perdix dauurica* (Pallas, 1811)

dauurica – breeding in shrubbery places at low altitude and in highlands of Northern and Western Tien Shan (up to Chokpak pass; Gavrilov, Gistsov, 1985), in Dzhungarskiy Alatau, Saur, Monrak ridges and on Southern Altai. In early December a flock observed in Karachingil, close to Kapchagay Reservoir (Bevza, 2004),

Rare resident. Inhabits mountain low (1500-2000m) and alpine (up to 3200-3400 m) steppe with bushes, high or low grass and cereal fields. In March they occurs in groups of 5-7 birds, and in April they break up on pairs. Nest is built under bush or grass on ground. Clutches of 13-20 eggs in May – June, a brood with small chicks observed in mid-July. In autumn and winter they live in areas with thin snow cover.

Note. In south-eastern Kazakhstan it hybridizes with Gray Partridge(*Perdix perdix*). Such specimens with signs of both parents obtained and observed on Sorbulak (12 December 2004), in Malay Sary (20 November 1987), at Chokpak (19 September 1967) and Zaysan (February 1910; Karpov, Belyalov, 2005).

51. **Common Quail** *Coturnix coturnix* (Linnaeus, 1758)

coturnix – widespread on breeding in Kazakhstan practically everywhere, excepting deserts and Syrdarya valley. Occupies high-grassed, shrubby meadows and river valleys both on plains and in mountains. On migration occurs everywhere.

Common, in places numerous breeding migrant. Inhabits meadows in river valleys and near lakes, lucerne, clover and cereal fields, edges or clearings in forests, in mountains at up to 2000 m on Altai and 2800-3000 m in Zailiyskiy Alatau, where high grass is growing. Appears in second half of April – mid-May. Migration is going very swift, and latest birds observed in end May. Pairs are formed on period of egg lay only. Nest is built under bush or dense grass on ground in shallow hole lined with grass. Clutches of 7-20 eggs May (may be from late April?) – mid-August. Such long period can be explained both by more late nesting of first breeders and early maturing of young from early broods (Gavrilov, 1989), which are ready for breeding at late summer. Re-nesting after loss of first clutches can be the third reason too, as many clutches perished during hayfield. Two broods of one female per year

rejected (Kuzmina, 1962). Only female incubates from last egg for 15-17 days and cares for chicks, which at 35-40 days old not differs from adults by dimensions. As young males gladly going to female's voice, may be latest clutches are belong to young birds? Autumn migration begins in August. From northern areas disappears in end September, but some birds linger up to mid-October. At Chokpak Pass mass migration observed in end September – first half of October. After frost and snowfall many birds perished in mountains. Latest Quails were observed here up to mid-November. In mild winter single birds occurs on the south of Kazakhstan, in Chimkent area.

52. **Common Pheasant** *Phasianus colchicus* Linnaeus, 1758

turcestanicus *– back, especially upper back, rather intensive coppery-red colour with weak green shine. Feathers on crop and upper breast with purple shade and usually without black terminal borders or they poorly developed. White collar usually not closed in front. Rump and upper tail coverts more intensively red, head less bronze-green, back with less developed green shade than* ***mongolicus.*** Common breeding on Syrdarya valley. Three birds recorded 7 September 2002 on lover reaches of Sarysu river, subspecies not identified (Grachev, 2002a).

mongolicus *– back, especially upper back, rather intensive rich coppery-red colour with well developed green shade. Feathers on crop and upper breast with green shade and usually with underdeveloped, sometimes absent, picture from black terminal borders. Rump and upper tail coverts less red, head more bronze-green, back with more developed green shade than* ***turcestanicus****. White collar usually not closed in front, better developed than* ***turcestanicus****.* Breeding in Chu river valley, at Balkhash-Alakol' and Zaysan depressions, where recorded in middle of XIX century and in 1983 only re-introdused here (Scherbakov, 1995a). At last years settles to west (Chu-Iliyskiye Mts., Zhetyzhol ridge; Karpov, 2004a) and in 1998 appears at Chokpak Pass and upper reach of Arys river (basin of Syrdarya river), where it becoming common now.

septentrionalis *– general colour lighter, more golden, less purple shade than nominate race. On black streaks of back, crop and flanks prevails greenish shade. Dark colour of upper belly limited by green colour. Throat, sides of neck and rump more greenish. Upper tail coverts with greenish shade. White collar absent.* Breeds before at coast of Northern Caspian Sea, however from delta of Ural river disappeared in middle XIX century (Gladkov, 1952). The information on pheasant on the Kazakhstan part Northern Caspian adjacent to delta of Volga was absent (Kuzmina, 1962). However local hunter shot two females mid-October 1999 near Zaburunye close to Atyrau (*per* A.P. Gistsov), that means beginning restoration of population from Volga river delta.

Common, in places rare resident. Inhabits riparian forests and reed-beds with bushes on plain rivers and lakes, and deciduous forest with bush tickets in mountains up to 1800 m, and in 2003 even recorded in Big Almaty Lake, 2500 m. Males begin to utter mating call in February, but mostly in March. Each one attracts on the territory several females. Nest is built under bush or grass on ground from grass leaves. Clutches of 8-24 eggs laid in April – mid-June. Repeated breeding after loss of nest took place often. Female incubates from last egg during 22-26 days and cares for chicks, which hatch in end of May – mid-June mostly. At autumn and winter they live in flocks (up to more than one hundred birds) and sometimes disperse, up to 200 km of breeding places.

Note. In 1972-1973 near 300 birds successfully introduced close Almaty from Tokmak (Chu valley, Kyrgyzstan) and now it dispersed widely, including mountains and nearby deserts.

GAVIIFORMES

53. Red-throated Diver *Gavia stellata* (Pontoppidan, 1763)

stellata – recorded on migration in western part of Kazakhstan (Ural river, Caspian Sea), less often observed to the east – up to Syrdarya river and Telekol'skiye lakes.

Rare passage migrant. In spring occurs on large reservoirs in end April – early May, in autumn recorded in end September - October. Probably occasionally wintering close to Caspian Sea shore.

54. **Black-throated Diver** *Gavia arctica* (Linnaeus, 1758)

arctica – breeding on northern plains, central and eastern areas of Kazakhstan, the south up to lower Turgay river, Balkhash lake, Sasykkol' and Alakol' lakes. Breeds on lakes of Altai (Markakol' lake; Berezovikov, 1989a; and Yazevoe lake; *per* S.L. Sklyarenko) and Zaysan lake (Prokopov, 2004). Widespread throughout Kazakhstan on migration including Big Almaty Lake 24 May 2002 (Sklyarenko,

2002a). Wintering in southern Kazakhstan rare: south of Chimkent (Dolgushin, 1960) and in Ile delta (Zhatkanbaev, 1996).

Rare breeding migrant. Spring occurrence in end April – late May. Nesting on large reservoirs with surface vegetation in forest-steppe, steppe and on mountain taiga lakes. Breeds in separate pairs at 0.5-1.5 km from each other. Nest is built along the shores of lakes or on old floating vegetation in reservoirs from dry reed stems and leaves, sometimes eggs laid in shallow hole in wet ground. Clutches 2, rarely 3 eggs in mid-May - end of June. Incubation lasts 28 days. A brood consists of one nestling often. Juveniles recorded from end May to mid-September. Autumn migration singly and in flocks of up to 7 birds from second half of September before reservoirs freeze over (generally up to mid-October – early November).

PODICIPEDIFORMES

55. **Little Grebe** *Tachybaptus ruficollis* (Pallas, 1764)

capensis – occupies southern Kazakhstan, to north up to lower Syrdarya river, Balkhash lake and Alakol' depression. Probably breeds in Western Kazakhstan, where adults and juveniles were collected in June–July 1957 on Kushum river (Shevchenko *et al*., 1993) and on Kurgaldzhin lakes (Erokhov, Berezovikov, 2001). Vagrant birds shot in lower Ilek river at Burannaya village early August 1883 (Zarudnyy, 1888) and in Utva-Ilek area 6 August 1991 (Berezovikov *et al*., 2000). Wintering on Sorbulak lake and in Taraz (Kolbintsev, 1999).

Common resident or short distant migrant. Inhabits mainly small reservoirs with standing or slow flowing water and plentiful vegetation (reed, cane, reed-mace). Appears at end February - early March. Breeding begins early May. Floating nests are built on water, among vegetation, from decayed reed leaves. Clutches usually 4-5, less often of 3 or 6 eggs in May. Juveniles have been noted up to the beginning of August. Dates of autumn migration are not known. Late birds have been seen end October.

56. **Great Crested Grebe** *Podiceps cristatus* (Linnaeus, 1758)

cristatus – breeding and migrating on lakes and reservoirs throughout Kazakhstan, including southern Altai (Markakol' lake; Berezovikov, 1989a) but excluding arid Mangyshlak and deserts where reservoirs are absent. Wintering in small numbers in south Kazakhstan, in the lower reaches of Arys, Keles and on Syrdarya rivers. In mild years wintering on Aral Sea at Barsa-Kelmes (Gistsov, 1978) and on Sorbulak lake where 12 birds recorded 15 December 2002 (Belyalov, Karpov, 2002).

Numerous and common breeding migrant. Inhabits large fresh or brackish lakes with reed-beds, reed mace, cane and other vegetation. Prefers lakes with fish, but sometimes occurs on water without. On large lakes (*eg.* on Alakol' lake) often well away from reed-beds. Appears end February – early March in south Kazakhstan, or at end April – early May in the northern areas. Migrates singly, in pairs or in small flocks of 6-8 birds. Breeding in single pairs begins approximately one month after arrival. Nest built among floating vegetation mainly, but sometimes they are fixed sites, from reed stems, leaves, reed mace, rush, algae and others. Clutches of 3-7 eggs from end of April to mid-July. Broods from 3-4, less often 1 or 5-6 juveniles observed from end May up to end August – early September. Both parents care for them. Repeated breeding after loss of clutches is common. In autumn migrates mainly in small groups of up to 10-14 individuals but along northern coasts of Caspian Sea they accumulate in huge numbers. Autumn dispersal begins in late July; migration occurs from end August up to end of October - early November, when reservoirs freeze up.

57. **Red-necked Grebe** *Podiceps griseigena* (Boddaert, 1783)

griseigena *– male wing length 160-183 (172), female 156-172 (164) mm; bill length of males 55-71 (62), of females 52-64 (59) mm; the outside finger (with claw) is shorter than 72 mm.* Inhabits reservoirs of plain Kazakhstan, excluding Balkhash-Alakol' depression. In July 2003 2240 birds counted on Aral Sea (Erokhov, 2004).

holboellii *– male wing length 185-212 (196), female 173-204 (188) mm; bill length of males 55-71 (62), of females 52-64 (59) mm; the outside finger (with claw) is longer than 72 mm. Description of subspecies* ***balchaschensis*** *from Balkhash lake unklear, as some authors lumps it with* ***holboellii*** *(Korelov, 1948), others - with* ***griseigena*** *(Stepanyan, 1990).* Inhabits Balkhash-Alakol' depression. Accidental occurrence 18 June 1974 one bird at highland observed (Big Almaty Lake; Kovshar, Lopatin, 1983). At Sorbulak lake 10 birds recorded 1 December 2002 (Belyalov, Karpov, 2002).

Common breeding migrant. Inhabits lakes richly covered with surface vegetation and smaller lakes, some almost entirely covered by reed-beds. Prefer lakes in which reed-beds alternate with small spaces of open water. Appears at end March - early May. Migrates singly, in pairs or small flocks of up to 4-6 birds. Breeds in single pairs not close one another. Nesting begins late April - June. Floating nests from decayed stems and leaves are built among vegetation, but they are more often fastened to reed stalks. Clutches of 3-6 eggs, found from early May – mid-June. Both parents incubate for 23 days. Brood usually 3, less often of 4-5; juveniles noted from early June up to mid August. Autumn migration occurs mainly in September; latest birds observed end October – first decade of November.

58. **Slavonian Grebe** *Podiceps auritus* (Linnaeus, 1758)

auritus – breeding in northern plain areas, south up to confluence of Utva and Ilek rivers (Berezovikov *et al.*, 1997; 2000), Bolshoy Aksuat lake (Gordienko *et al.*, 1980), Karaganda, and on Southern Altai (Bukhtarma valley, Markakol' lake), and in southern spur of Azutau ridge, where two broods were recorded 27 July 2001; Berezovikov, Rubinich, 2001). Seen in other areas on migration. Several birds recorded on 11 July 1958 on Kushum river (Shevchenko *et al.*, 1993). Occasionally observed on Kurgaldzhin lakes (Krivizkiy *et al.*, 1985; Erokhov, Berezovikov, 2001) and in Alakol' hollow, where single bird recorded 30 August 1989 and two – 2 September 1989 (Berezovikov, Erokhov, 2004). Record of female with juvenile 19 June 1992 on Peshnoy I., Caspian Sea, (Berezovikov, Gistsov, 2201) very far south of breeding area is not explained.

Rare breeding migrant. Inhabits small lakes, ponds and deep-water bogs etc. with rich surface vegetation. Appears mid-March – April; migration comes to an end in late May. On migration recorded singly or in pairs and flocks up to 10 individuals. Nesting by single pairs and small colonies of up to 10-15 pairs. Floating nests are built from decayed stems and leaves among vegetation, but stationary ones on tussocks or on shores among weeds are not uncommon. Breeding begins in May. Clutches of 4-5, rarely of 6 eggs found from late May. Juveniles recorded by end June – mid-August, but one brood observed 29 September. Autumn dispersal already in evidence by late July, and migration occurs in August – September. Late individuals have been observed mid-November.

59. **Black-necked Grebe** *Podiceps nigricollis* C.L.Brehm, 1831

nigricollis – breeding everywhere, excluding arid Mangyshlak and deserts, both on plains and in mountains (Markakol' lake; Berezovikov, 1989a); on migration occasionally visits high altitude lakes (Big Almaty Lake, 4 September 1971, 9-11 August 1973, 6 June 1976; Kovshar, Lopatin, 1983).

Common, locally numerous breeding migrant. Inhabits lakes and slow-flowing steppe rivers and their overflows with reed, cane, reed-mace and other vegetation on plains and in mountains up to 1450 m on Altai. On migration recorded on open reservoirs, usually in flocks of 10-15, occasionally up to 100 birds. Breeding in colonies of some hundreds or tens pairs, often with gulls and terns. Appears in mid-April – early May at southern areas, and end April – mid-May at northern ones. Breeding begins from mid-May. Floating nests are built among vegetation though on Sorbulak lake they sometimes construct nests on sandy shores of small islands (may be water level drops and birds continue incubating). Both parents build it from decayed wet stems and leaves. Clutches usually 3-5 eggs, but up to 8, and repeated clutches - 1-2, found from mid-May to early July. Juveniles noted from mid-June till August. Both parents care for juveniles. We often observed small chicks sitting on back of one adult, and other adult diving for food and feeding them. Repeated breeding after loss of clutches is common. Autumn migration begins in mid-August and finishes in the first week of November. Wintering in small numbers in lower reaches of Arys, Keles rivers and on Syrdarya river at Chinaz.

PELECANIFORMES

60. **Great Cormorant** *Phalacrocorax carbo* (Linnaeus, 1758)

sinensis – breeding in Syrdarya valley, Balkhash-Alakol' and Zaysan depressions, irregularly on Kamysh-Samarskiye lakes (Shevchenko *et al*., 1993), in lower reaches of Turgay river, in Naurzum Reserve (Vinogradov, Auezov, 1991b; Bragin, Bragina, 2002) and on Kurgaldzhin lakes. Between 1980-1990 a colony existed on Sorbulak lake close to Almaty, where birds nested in 2001-2003 too. In recent years nesting renewed on northern Caspian Sea, near delta of Ural river. During migration and dispersal they occur everywhere, including Southern Altai (Markakol' lake; Berezovikov, 1989a) and Zailiyskiy Alatau ridge, when in end October over Almaty can observed some flocks (up to 100-150 birds) migrate in direction of Issyk-Kul' lake.

Common but locally rare breeding migrant. Inhabits only fish lakes and reservoirs, sometimes salty. Arrives after opening of reservoirs, at early – end March in southern areas, and at the early – mid-April in northern ones. During migration and dispersal occurs of flocks, from 5-10 up to several hundred specimens. Breeding in large colonies, sometimes numbering hundreds up to thousand pairs, but more often smaller. Frequently it settles together with Grey Heron, Spoonbill, Night Heron, Pelican, *etc*. Breeding begins in April. Bulky nests are built among reed-beds, on shore rocks and on stony or sandy islands, on flooded trees, or in forest-belt on small islands, from dry twigs or reed stems, inner cup lined with grass and reed leaves, often very close one to other. Breeding is prolonged even in one colony. Fresh eggs found from mid – end April up to mid-June. Very late nesting is recorded in Ile river delta (Zhatkanbaev, 1991). It can be connected with first time breeders beginning to nest much later, than the adults. Clutches of 3-5 eggs end April – mid-June. Both parents incubate 28-30 days. Young fly from early June. Later they are united in flocks and conduct wandering life. Migration from northern half of Kazakhstan in September (last birds seen early October), from south in October – mid-November, though separate birds observed up to the early December.

61. **Pygmy Cormorant** *Phalacrocorax pygmaeus* (Pallas, 1773)

Previously nested on Syrdarya river valley and, probably, in delta of Ural river. Several birds were observed in delta of Ural river in 2000 (Kovshar, Berezovikov, 2001) and probably breeds close to Atyrau in 2002 (Erokhov, 2002a). Vagrant birds observed 16-21 April 1967 (2 and 4 birds) on Chu river (Gavrilov, 1981) and 30 May 1995 12 birds on Sorbulak lake (Erokhov, 2002e.). In 2001 it was common in Syrdarya valley and on Chushkakol' lakes, where probably bred in 2002 (Erokhov, 2002c and *per* V.V.Khrokov). One bird recorded in Kurgaldzhino Reserve 16 May 2001 (Koshkin, 2003). In mild winters seen on Syrdarya river near Dzhulek settlement, in Tashkent area it winters regularly in small groups or singly. In 18-21 December 2003 near 100 birds recorded on Chardara reservoir (Erokhov, Belyalov, 2004).

Rare breeding migrant. Inhabits fish lakes and river channels with rich reed-beds or riparian trees and bushes. Appears end February – early March. Breeding in small colonies, usually together with Cormorant, Grey Heron and Night Heron, or in single pairs. Nests are built in reeds, on bushes and trees from dry reed stems and leaves. Clutches of 4-6, less often 3 or 7 eggs, which found end May – mid-June. Both parents incubate and feed juveniles. Autumn migration not well marked.

62. **White Pelican** *Pelecanus onocrotalus* Linnaeus, 1758

Inhabits Balkhash-Alakol' depression, lower Turgay river, occasionally nests in Naurzum Reserve (Gordienko, 1986a; Bragin, 1991; Vinogradov, Auezov, 1991a; Blinova, Blinov, 1997), in 2003 two colonies were found on Sarykopa lake (Bragin, 2004), on Teniz lake in valley of Tobol river (Bragin, 1999). Since 1970 breeding resumed on Zaysan reservoir, where in 1985 about 300 pairs counted (Survillo, 1971; Berezovikov *et al.*, 1995). On Chushkakol' lakes a colony was found in 1988 (Lopatin *et al*., 1991). On migration and as a vagrant it occurred throughout the Republic. Accidental vagrants observed on Markakol' lake 16 August 1908, three birds, and 23 November 1908, one (Polyakov, 1912), on Irtysh river between Ust-Kamenogorsk and Pavlodar and at Chokpak Pass 2 October 2002, one bird (Kovalenko *et al*., 2002a) and 26 birds 8 September 2000.

Rare breeding migrant. Inhabits large fish reservoirs with reed beds. Usually nests in large colonies sometimes numbering hundreds or thousand pairs. During migration occurs mainly in large flocks. Appears nearly two weeks after Dalmatian Pelican, at end February - March, when many waters are still partially frozen. Latest migrants recorded mid-May. Breeding begins soon after arrival. Nests are usually built on dry heaps of reed, less often on sandy or stony islands of large lakes (*eg*. on Balkhash lake) from dry reed stems and leaves. Both parents build it for 2-3 days. Clutches of 2 eggs usual, less often of 1 or 3 eggs found mid-April – early May. Both parents incubate. Juveniles hatch after 33-39 days, at the end of May – early June and take to flight at beginning of August. Though breeding activity in most colonies is synchronised, in the Ile river delta, nesting has been recorded much later (Zhatkanbaev, 1991, 2002). After breeding they disperse widely. Autumn migration begins after the first frosts. Last birds observed in mid-November.

63. **Dalmatian Pelican** *Pelecanus crispus* Bruch, 1832

Inhabits Balkhash-Alakol' depression, Kurgaldzhin lakes, lower Turgay river and lakes of Naurzum Reserve (Teniz and Karakamysh lakes in valley of River Tobol; Bragin, 1999), in 2003 colony existed on Sarykopa lake (Bragin, 2004). After the 1960s nesting resumed on Zaysan lake, where colonies observed in 1980, 1985, 1989 and 1990 (Samusev, 1975, 1977; Berezovikov *et al*., 1995). In

recent years (from 1969) nested on Kamysh-Samarskiye lakes and Dongulyuk Reservoir on Kushum in Volga-Ural region (Shevchenko *et al*., 1993). In 1986-1989 nested in delta of Ural river and Zaburunskiy Gulf (Gistsov, Auezov, 1991; Rusanov, 1992). In the 1980s small colonies were found on Akchatau lake in an area adjacent to the east of the Aral Sea (Poslavskiy, 1991a) and on Chushkakol lakes (Lopatin *et al*., 1991). Since 1990s yearly nesting observed on Sorbulak lake near Almaty (in 2000 *ca*. three hundred pairs). On migration and as a vagrant occurs anywhere, including Northern Kazakhstan (Belezkaya *et al*., 1997) and the foothills of the Western Tien Shan (Gavrilov, Gistsov, 1985), where 17 birds observed 29 September 2004. In 18 –21 December 2003 nine birds recorded on Chardara reservoir (Erokhov, Belyalov, 2004).

Rare breeding migrant. Inhabits large and average sized reservoirs with fish stocks and suitable nesting islands with or without surface vegetation. Arrives in end February – early April in small groups of 5-10 birds, sometimes singly or occasionally in large flocks of up to 100. Colonies are occupied soon after and nests are constructed on clumps of dry reed, or on stony and sandy islands with no vegetation. Here nests are especial large, up to 1.5 m in a diameter and up to 1 m in height and are constructed from twigs, reed stems and dry herbaceous drift collected from water's edge; inner cup lined with thin grass. Both parents build it. Settles in single pairs or in small colonies (3-20, very rare up to 150-200 pairs), frequently together with White Pelicans and Cormorants. The breeding cycle of each pair tends not to be synchronised. In the colonies juveniles of different ages and clutches at different stages of brooding can be recorded on a single visit. Clutches of 2-4, occasionally of 5-6 eggs, recorded in early April - early July. Both parents incubate for 30-40 days and continue to bring material for nest at first 7-12 days. In the Ile river delta late summer nesting has been discovered (Zhatkanbaev, 1991, 2002). Juveniles recorded end May – August. In autumn birds disperse and fly considerably to the north of breeding sites. Autumn migration late, from mid-October – end November, and odd birds linger to mid-December.

CICONIIFORMES

64. **Eurasian Bittern** *Botaurus stellaris* (Linnaeus, 1758)

stellaris – widespread breeding on lakes and reservoirs of plain areas. On migration also observed on plains; mountain lakes are very seldom visited (Markakol' lake; Berezovikov, 1989a) and in foothills of Western Tien Shan (14 October 1978; Gavrilov, Gistsov, 1985). Wintering in small numbers to the south of Baygakum, Turkestan and Chimkent.

Common breeding migrant. Inhabits lakes or rivers with weak current and plentiful reed-beds, mace-reed and cane. Appears early (identified by voice), at early March – mid-April (at Semipalatinsk in second half of April - early May) singly, less often in pairs. Nest is built among reed-beds from reed stems and leaves or reed mace, and continues to be constructed during incubation and growing of juveniles. Clutches usually 3-5, rarely 6 eggs, which found in mid – end May. Recently hatched juveniles found mid-June – mid-July; flying young observed mid-July – August. Courtship 'booming' of males heard prior to early July. Repeated breeding after loss of clutches is possible. Autumn migration (singly or in small flocks of 3-8 birds) begins at end August, most birds depart in September – October; singles recorded to mid-November.

65. **Little Bittern** *Ixobrychus minutus* (Linnaeus, 1766)

minutus – widely breeds and migrates on plain lakes and reservoirs, north up to Ural'sk (Shevchenko *et al*., 1993), Utva-Ilek area (Berezovikov, 2002a), Naurzum Reserve (Gordienko, 1983; Bragin, Bragina, 2002), Kurgaldzhino Reserve (Krivizkiy *et al*., 1985), Semipalatinsk (Panchenko, 1968) and Zaysan lake. In June 1986 recorded in Chernyy Irtysh valley (Solomatin, 1999). During migration occur on plains mostly, but many birds recorded in foothills of Western Tien Shan (mainly in mid – end September; Gavrilov, Gistsov, 1985).

Common and in places abundant breeding migrant. Inhabits mainly rivers, ponds and small lakes with reed-beds, bushes and trees on plains. Arrives in early April - early May in singly or in small groups, and migration comes to an end in mid-May. Breeding in single pairs sometimes not far from one another. Nest is built in reeds very close to water (up to 0.5 m above) from reed stems and leaves, or on bushes or trees from dry twigs scantily lined with dry grass up to 3 m off ground. Clutches of 4-9 eggs found in May. Both parents incubate 16-19 days, and feed juveniles both by day and by night. If disturbed, they leave nest at 17-18 days old, but return after some time. Flying young observed from end of July up to early September. Autumn migration in small flocks begins in second half of August, but peaks in

September. Last birds observed end September, but in southern areas they seen up to end October or even early November.

66. **Night Heron** *Nycticorax nycticorax* (Linnaeus, 1758)

nycticorax – occupies lakes and reservoirs in southern half of Kazakhstan north, to north-east coast of Caspian Sea (Gistsov, Berezovikov, 1995), lower reaches of Ural river (Levin, Gubin, 1978), Raygorodok village in Trans-Ural'e (Shevchenko *et al*., 1993), lower reaches of Turgay river, Kurgaldzhino (not observed recently; Krivitsky *et al*., 1985) and Alakol' depression. In 1985 nesting was proved for Zaysan depression on Chernyy Irtysh delta (Egorov, 1999). On migration occurs everywhere excluding arid deserts and highlands, but yearly recorded in foothills of Western Tien Shan (31 August 1975, 12 September 1970 and 1971, 13 September 1967, 14 September 1972, 21 September 1970 and 1975, 22 September 1975; Gavrilov, Gistsov, 1985). Not wintering in Kazakhstan.

Common breeding migrant. Inhabits rivers and lakes with trees and bushes growing on islands or in water on plains and in foothills. Occasionally nests on reservoirs, only where reed-beds are available. Appears end March – early April, but sometimes only in mid-April. It migrates singly or in small flocks, calling regularly. Migration finishes early – mid-May. Breeding begins mid-April – May. Usually lives in colonies, frequently together with Cormorant and Grey Heron, less often in independent groups. Nests are built on bushes and trees (Asiatic Poplar, Willow, Russian Olive, Elm) at 5-10 m above ground, usually lower than other birds, very rarely among reeds. Both partners build it from dry twigs or reed stems, flat inner cup scantly lined with dry grass. Clutches of 2-5, more often 4 eggs, found end April – mid-June. Incubation lasts 21-22 days. Repeat clutches after destruction observed even in second half of July. Juveniles hatch early May, both parents feed them. Flying young (at about one month old) sometimes seen end May (on Syrdarya river at Chinaz), but usually in June – July. Dispersal begins in August, autumn migration peaks in September, and last birds recorded at early – end October.

67. **Squacco Heron** *Ardeola ralloides* (Scopoli, 1769)

Nests on the Kazakhstan part of Volga river delta, on Ural river delta and on its lower reaches north of Atyrau (Levin, Gubin, 1978; Gistsov, Berezovikov, 1995), previously occupied lower reaches of Syrdarya river. Vagrant birds observed on Gor'kaya river in Volga-Ural area 24-25 May 1984 (Shevchenko *et al*., 1993), on Aksuat lake in Naurzum Reserve 29-30 May 1980 (Gordienko, 1991), near lower reaches of Temir river 26 July 1966, at mouth of Irgiz river 20 July 1971 (Varshavskiy *et al*., 1977) and two birds on Sorbulak lake close to Almaty 30 May 1982 (Erokhov, 1991).

Rare or accidental breeding migrant. Inhabits rivers, river channels and coast of Caspian Sea with trees, bushes, reed-beds and shallow water nearby. Appears end March - early April in flocks of up to 100 birds. Breeding begins early – mid-May. Nesting in colonies (up to 150-170 pairs), usually together with other *Ardeidae*. Nests built in trees and bushes, from thin twigs at 5-10 m above ground, or in reed beds from reed stems and leaves, by both partners. On each tree may be 10-15 nests at distance 0.5 m or more. Clutches of 4-5, sometimes of 6 eggs, found mid – end May, but sometimes to mid-August (probably repeated clutches after destruction of first ones). Chicks hatch after 20-21 days in early – mid-June. Both parents care for and feed juveniles, which begin to fly at 17-20 days old, in end June – mid-end July. Autumn migration is early, in lower Ural river latest birds were observed 30 August 1975 and 11 October 1974. Not seen in winter.

68. **Cattle Egret** *Bubulcus ibis* (Linnaeus, 1758)

ibis – doubtless bred in Ural river delta on Peshnoy island in 1992 (two pairs) and in 1993 (four pairs) (Berezovikov, Gistsov, 1993). Vagrants collected at Mangyshlak 16 May 1947 (Dolgushin, 1960) and at Sholakkol' lake on lower reaches of Turgay river 15 July 1971 (Auezov *et al*., 1978). There is no other data from Kazakhstan.

Accidental breeding migrant. Inhabits tree groves in marshes near shallow water. Arrives end March – early April. Breeding in colonies (up to 50 pairs on one tree) together with other *Ardeidae*. Nest is built in trees at 3-10 m above ground, from thin twigs, or in old nests repaired by both partners. Clutches of 4-5, very rarely up to 9 eggs, at end April – May. Both sexes incubate 21-24 days, and both feed juveniles, which begin to fly in July. Autumn migration is early, probably in August – September, no exact dates.

69. **Little Egret** *Egretta garzetta* (Linnaeus, 1766)

garzetta – occupied the lower valley of Syrdarya river and northern coast of Caspian Sea in the past. In 1974-1975 nested in lower valley of Ural river 60 km to the north of Atyrau (Levin, Gubin, 1978). Now common in Ural river delta and along northern coast of Caspian Sea (Berezovikov, Gistsov, 1994). Vagrant birds recorded in Western Kazakhstan on Kushum river up to Pyatimar village end June – August (Shevchenko *et al*., 1993), in Naurzum Reserve (Bragin, Bragina, 2002), on Kumkol' lake in lower reaches of Turgay river end May 1975 and early July 1983 (Auezov *et al*., 1978; Poslavskiy, 1991b), in Kurgaldzhino Reserve 16 May 2000 (Koshkin, 2003), at mouth and lower reaches of Syrdarya river early – mid-May (Berezovskiy, 1991; Poslavskiy, 1991b) and on Alakol' lake 18 June 1972 and 21 July 1968 (Auezov, Grachev, 1977). Vagrant bird recorded 15 May 2002 not far of Chilik (Kovshar, 2002b) and a group of four birds 29 December 1993 in Western Tien Shan in upper reaches of Arys river (Kolbintsev, 1997).

Rare or accidental breeding migrant. Inhabits lakes, rivers and coast of northern Caspian Sea with reed-beds, trees, bushes and shallow water nearby. Arrives in flocks of 8-12 birds mid-April – early May. Breeding begins soon after arrival in colonies together with other *Ardeidae*. Nests are built in trees (Willow) and bushes from dry twigs 6-10 m above ground, or in reeds. Clutches of 4-5, less often of 3 or 6 eggs found in mid-May. Juveniles hatch in early June and begin to fly early July. Soon birds begin to disperse to the south. Lasts records end August – end-September.

70. **Great White Egret** *Egretta alba* (Linnaeus, 1758)

alba – breeds on reservoirs in southern half of Kazakhstan, north up to Kushumskie reservoirs (Shevchenko *et al*., 1993), on lower reaches of Uil river, in Naurzum Reserve (Blinova, Blinov, 1997; Bragin, Bragina, 2002), on Kurgaldzhin lakes (Krivizkiy *et al*., 1985) and in Zaysan depression. On dispersal observed to north up to Ilek river, Sergeevskoye reservoir in Northern Kazakhstan (Drobovzev, Vilkov, 1997) and Pavlodar on Irtysh river. Accidental recorded on Markakol' lake 20 August 1980 (Berezovikov, 1989a). Observed in valleys of Syrdarya, Chu and Ile rivers in winter, also on Irtysh river near Ust-Kamenogorsk 4 January 1995 (Scherbakov, 1999b), on Sorbulak lake close to Almaty (Belyalov, Karpov, 2002) and in foothills of Talasskiy Alatau ridge (Kolbintsev, 1999).

Common breeding migrant. Inhabits lakes on plains with rich reed-beds, trees, bushes and shallow water nearby. In spring arrives early, when there are only patches of thawed water, but the majority migrate in small flocks from mid-March – beginning of April, and in a late spring only at the end of April. Breeding begins soon. Nests in singly pairs or in small colonies of one-two dozen pairs, frequently with Grey Heron and Spoonbill. Nests are built in reed beds from dry reed stems and leaves, or rarely from thin twigs, on trees. Clutches of 3-4, less often of 5 eggs were found mid-April – beginning of May. Young begin to fly in mid-May – beginning of August. At first they disperse in families, later they are united in flocks sometimes numbering up to 1500 specimens. Autumn migration peaks mostly in September – beginning of October. On Chokpak Station a flock of 14 birds observed 14 October 2001.

71. **Grey Heron** *Ardea cinerea* Linnaeus, 1758

cinerea – occupies reservoirs throughout plain Kazakhstan, in small numbers it winters to the south of Turkestan and Chimkent, 5 birds recorded on Sorbulak lake 15 December 2002 (Belyalov, Karpov, 2002). On dispersal and migration it occasionally visits mountain lakes (Markakol' lake; Berezovikov, 1989a).

Common, in places abundant breeding migrant. Inhabits reservoirs with reed-beds, trees and bushes in shallow water. Arrives very early, when reservoirs are covered with ice and much snow. Appears end February – March in the south and in mid – end April in the northern areas. Migrates singly and in small flocks, which rarely consist of up to 50 individuals. Nests in singly pairs and in colonies up to 200-300 nests, usually together with Cormorant and other *Ardeidae*. Bulky nests are built by both partners in trees, bushes (Russian Olive, Asiatic Poplar, Willow) from dry twigs, lined with some grass at 6-10 m above ground, or in reed-beds from dry reed stems and leaves at 0.2-0.8 m above water early April – early May. Clutches of 2-6, usually 4-5 eggs early April – early June. Both parents incubate 26-27 days and feed juveniles, which hatch at early May – early June, and flying at end May – end July. Autumn migration begins end August – early September and in northern areas comes to an end at early – mid-October. In southern Kazakhstan migration takes place up to early – mid-November.

72. **Purple Heron** *Ardea purpurea* Linnaeus, 1766

purpurea – occupies reservoirs on plains, north up to Kamysh-Samarskiye lakes (though nests not found recently; Shevchenko *et al*., 1993); lower reaches of Turgay river and probably Kurgaldzhin lakes, where they were recorded 14 April 1968, 8-9 April 1977 and 27 April 1980 in spring and autumn

(Andrusenko, Khrokov, 1981); Ile river delta. Singles seen near Tavolzhan village in Pavlodarskoye Trans-Irtysh'e (Kovshar, Khrokov, 1993). Occasionally observed in autumn in foothills of Western Tien Shan (5 October 1976; Gavrilov, Gistsov, 1985).

Common, in places accidental breeding migrant. Inhabits lakes with rich reed-beds and shallow water, seldom visited by people. Arrives early April – early May. On Mangyshlak, where they do not nest, migration is very obvious (singly and groups of 5-7 birds) from mid-May, last birds recorded mid – end June. Lives in pairs and in small colonies, sometimes together with Grey Heron, Great Egret and Spoonbill. Nest is built by both partners on heaps of old reeds from reed stems and leaves, thorn twigs also used if available. Clutches of 3-5, occasionally 6 eggs, found from early May to mid-June. Both parents incubate 24-28 days and feed juveniles, which fly at roughly from July – early August. Migrates in September; singles recorded up to mid-October. Not wintering in Kazakhstan.

73. **Black Stork** *Ciconia nigra* (Linnaeus, 1758)

Occupies mountainous areas of Tien Shan, Dzhungarskiy Alatau, Tarbagatay, Saur, Monrak, Southwest Altai, Kalbinskiy Altai and Kazakh uplands. Rarely breeds in Tentek river delta and in Charyn river valley (Berezovikov, Levinskiy, 2002; Kovshar, 2002c). Nests were also found on Mugodzhary ridge (Varshavskiy *et al*., 1977). Widespread during migration. Unusual concentrations of 6-34 birds (at all 94) recorded 29 August – 7 September 1995 on Ters Asthibulak reservoir (Berezovikov, Gistsov, 1998-1999).

Rare breeding migrant. Inhabits mountain regions with meadows and shallow water nearby (not further than 10-15 km from nest), seldom visited by the people. Arrives end February – early March in southern areas, and end March – mid-April in northern ones, but in highlands of Western Altai at early May. Late migrants observed up to early June. Pairs nest separately. Birds with sticks in their bills were observed at Western Altai end April – early May. Nest built (and usually occupied for some years) on trees or in niches and on inaccessible rock-ledges, from thick twigs. Inner flat cup lined with dry grass, leaves and hair. Clutches of 2-5, rarely of 6 eggs early May – early July. Parents incubate 32-46 days and feed juveniles, which fledge mid-July – August. Autumn migration begins end August, most birds leave in September – October, in flocks of 40-50 birds. Singles occasionally winter in the south of Kazakhstan, on lower Keles river and on Chirchik river.

74. **White Stork** *Ciconia ciconia* (Linnaeus, 1758)

asiatica – episodically nests in Southern Kazakhstan, north up to Turkestan and east to Merke (Pfeffer, 1991a). In lower Assa river one bird with stick in the bill observed early May 2002 (Erokhov, 2002f). Wandering birds were observed close to Mugodzhary Mts. (Varshavskiy *et al*., 1977), near Ulanbel', in Andasayskiy Reserve (Kovshar, Levin, 1993) and 8 May 1989 on Kapchagay reservoir (Erokhov *et al*., 1991). Stray birds were recorded on Manas Island (Aral Sea) and on lower reaches of Syrdarya river (Dolgushin, 1960). A winter record (January 10th, 1992) of one bird near Taraz is known (Kolbintsev, 1997). On Chokpak singles recorded 24 March 1974, 8 September 1971, 29 September 1967, 25 September 1981 and 26 October 2000, a flock of 19 birds (Gavrilov *et al*., 2001). Occasionally single birds observed in winter to the south of Chimkent.

Rare breeding migrant. Inhabits a cultivated landscape with separate trees, meadow sites and small areas of shallow water. Appears at end February – end March. Nesting in quite widely separated pairs. The bulky nest arranged on man-made constructions (ancient mosques, water-pressure tanks, sheep-sheds, uninhabited houses, electricity and telegraph poles) or on trees (Elm, Mulberry, Russian Olive) at 3.5-7 m above ground. It is build by both partners from thick twigs; inner flat cup lined with dry grass, rags, pieces of paper and other soft material. If not disturbed, nest is used for several years and only repaired. Clutches of 3-5 eggs, found mid-March – April. Juveniles fly end June – mid-July. Autumn migration peaks in September – October.

75. **Glossy Ibis** *Plegadis falcinellus* (Linnaeus, 1766)

Episodically nests on northern coast of Caspian Sea, on Volga and Ural deltas, also in lower reaches of Ural river north of Atyrau (Levin, Gubin, 1978; Erokhov 2003a). Previously nested in lower reaches of Syrdarya, Turgay river and Ile delta. Probably breeds on Chushkakol lake, where its numbers increase (Erokhov, 2004). On migration and dispersal observed in Western Kazakhstan on lower reaches of Kushum (Shevchenko *et al*., 1993), on Mangyshlak (Gubin, 2002a) and on Ustyurt (Dyakin, 1991; Kovshar, 1995). Vagrants recorded on Naurzum Reserve, two flocks in spring 1986 and 1989 (Bragin,

Bragina, 2002), on Kurgaldzhin lakes 7 April 1971 (Krivizkiy *et al*., 1985) and on Ile delta (30 birds on 23 April 1983; Eszhanov, 1991) were also observed.

Rare or accidental breeding migrant. Inhabits lakes, river channels and islands on Caspian Sea with rich reed-beds, trees, bushes and shallow water nearby, seldom visited by the man. Appears end March – early April, migration finishes end May - early June. Migrates in flocks on one front or in a triangular formation. Settles in colonies of several dozen pairs, usually together with Rook, Night Heron, Grey Heron, Great and Little Egret, Squacco Heron and Cormorant, but sometimes in single pairs too. Nest is built on bushes and trees (Willow) from dry twigs and reed stems and lined with soft reeds and grasses at a height of 8-11 m, less often among reed-beds from reed stems lined with green reed leaves. Clutches of 2-5, usually 4 eggs from end April – early July (repeats nesting after destruction of first clutches). Both parents incubate and feed juveniles, which hatch early June and fledge at 16-18 days old. They fly end June – late July. Autumn dispersal (adults and young in separate flocks) begins end July and gradually becomes migratory, peaking end August – September, some birds lingering to mid-October. Not wintering in Kazakhstan.

76. **Eurasian Spoonbill** *Platalea leucorodia* Linnaeus, 1758

leucorodia – episodically occupies plains of Kazakhstan north up to Sorkol lake east of Dzhanybek (Lindeman, 1991), Kirovskoye reservoir on Kushum river (Shevchenko *et al*., 1993), Naurzum Reserve (1975, 1983-1992), Kurgaldzhin lakes and Zaysan depression. On dispersal recorded on Irtysh river up to Semipalatinsk. In autumn occasionally migrates along of Western Tien Shan foothills (Gavrilov, Gistsov, 1985). One record for Markakol' lake 3 April 1983 (Berezovikov, 1989a) and Sorbulak lake 22 May 2001 (Kovalenko, Gavrilov, 2002b). Two birds recorded on Chardara reservoir 18-21 December 2003 (Erokhov, Belyalov, 2004).

Rare or accidental breeding migrant. Inhabits steppe lakes with rich reed-beds, river channels with trees, bushes and shallow water nearby. Appears early – mid-March, but usually in April. Migration ends in mid-May. Migrates in flocks in one front. Settles in colonies of up to 75 pairs, sometimes together with Grey Heron, Great Egret and Cormorant. Nest is built by both partners in reed-beds from reed stems, or in bushes and trees (Willow) from dry twigs with some reed stems and leaves at a height of 2-7 m. Clutches of 3-5, more often 3-4 eggs in early May, but usually mid-May – early June. Juveniles hatch end May – early July. When juveniles begin to fly birds disperse in flocks of 15-100. Autumn migration begins mid-August, most birds leave in September. Singles linger to mid-October – end of November. On Chokpak Station a flock of 19 birds observed 14 October 2001.

PHOENICOPTERIFORMES

77. **Greater Flamingo** *Phoenicopterus roseus* Pallas, 1811

Episodically nests in Central Kazakhstan (Zhamanakkol, Chelkar-Teniz, Aschitastysor, Tengiz lake), and also on Caspian Sea on Mertvyy Kultuk gulf. On dispersal and migration over plains it occurs very widely: in Siberia up to Tomsk, Eniseysk, Minusinsk, Angara, Baykal, and in Kazakhstan too. Occasionally in foothills of Western Tien Shan: 20 October 1973, 9 birds (Gavrilov, Gistsov, 1985).

Rare breeding migrant. Inhabits highly saline lakes with extensive shallow water, where *Artemia salina* is their basic food. Appears end March – late April in small groups and flocks of 100-600 birds. Migration extends mid – end May, when immature birds arrive. Settles in colonies of 50-30,000 pairs. Nests are constructed from mud surrounding colony (salty silt, sand and seaweed) and are 7-60 cm in height, but sometimes eggs are laid directly on sand, even without nest hollow. Clutches of 2-3, less often 1 egg, laid early May – end of June. Such extended breeding, though in each colony practically all birds begin to lay eggs simultaneously, is explained by vagaries of weather in the current year and, probably, different times of laying by first-time breeders and by older birds. Young begin to fly in August – early September. Autumn migration September – October. Some birds linger before freezing over of reservoirs. Birds breeding in Kazakhstan (Tengiz lake) and in Iran (Urmiye lake) form one population, as ringed juveniles in Iran in subsequent years were repeatedly met on moult at Tengiz lake (Andrusenko, in print). Not wintering in Kazakhstan.

ACCIPITRIFORMES

78. **Honey Buzzard** *Pernis apivorus* (Linnaeus, 1758)

Breeds occasionally in Southern Altai in Bukhtarma valley; brood recorded 20 July 2001 (Berezovikov, Rubinich, 2001); probably in Malaya Ul'ba valley and on Markakol' lake (Berezovikov, 1989a, Scherbakov, 1999c). Also lives in middle part of Ural valley (Gubin, Levin, 1982). Probably episodically breeds in Naurzum Reserve (Bragin, Bragina, 2002, Bragin, 2004). Isolated nests are known for Mugodzhary Mts., in Urkach forest (Varshavskiy *et al*., 1977). Widespread on migration.

Very rare breeding migrant, only common during migration. Inhabits plains and mountains up to 1500 m in Altai, deciduous and riparian forests. Appears late, mid – end April, latest migrants seen in May. Nest is built in trees from dry twigs and small leafy twigs are often found in nest cup. Clutches of 2-4 eggs end May, chicks hatch end June – July and begin to fly end July – August. Autumn migration begins end August and continues during September; in southern areas (Chokpak Pass), where it very common, recorded until 22 October 1971. As in spring, they migrate singly or in small groups, often with buzzards.

79. **Oriental Honey Buzzard** *Pernis ptilorhynchus* (Temminck, 1821)

orientalis – seen in eastern half of Kazakhstan on migration (Altai, around Balkhash lake and in foothills of Northern and Western Tien Shan).

Rare, in places common passage migrant. In spring observed from first decade of April to mid June; in autumn – from September to mid-October. Migrates singly or in small groups often with buzzards.

80. **Black Kite** *Milvus migrans* (Boddaert, 1783)

migrans *– head light-brown, much lighter than dark-brown back; crown with sharp shaft streaks; belly, sides of body, long leg feathers and under tail coverts with well developed red-brown colour. Inner webs of primaries black-brown, less often light marble pattern at base and very rarely insignificant development of white at base. On outer web of P 6 slight narrowing but sometimes absent. Male wing length 430-460 (445), female 440-475 (460) mm.* Nests and also migrates in southern parts of Kazakhstan, on Syrdarya and Chu valleys, where intergrades with ***lineatus***.

lineatus *– head darker and less contrast with colour of back; crown less sharply streaked; belly, body sides, long leg feathers and under tail coverts have mainly brown tone. Inner webs of primaries at base have well developed white, sometimes with brown cross bands. On outer web of P 6 sharp narrowing. Male wing length 465-495 (478), female 470-520 (491) mm.* Nests in Western, Northern Kazakhstan, in Altai, Kalbinskiy Altai, in Zaysan depression, Tarbagatay ridge and in Tien Shan. Widespread on migration, including highlands (Big Almaty Lake; Kovshar, Lopatin, 1983).

Common, in places numerous breeding migrant. Inhabits riparian woods and forested lakes. Appears early – mid March or in April and latest migrants observed mid-May. They fly singly, in small groups or loose flocks of up to a hundred birds. Nest is built in trees, on rock shelf or cavity, from twigs, nest cup lined with various soft material (animal hair, rags, dry grass *etc*.). Usually used for several years. Clutches of 2-5, usually 2-3 eggs in mid-April – May. Female mainly incubates for 30 days; male brings food for her and later for chicks. Young of different ages were found in nests from end May to 22 July. Autumn movement begins in August, peak migration observed in September in loose flocks (sometimes up to several hundred) and latest birds observed mid – end October. In autumn 2004 on Chokpak Pass were ringed 104 *lineatus* and 3 *migrans*.

81. **Pallas's Fish Eagle** *Haliaeetus leucoryphus* (Pallas, 1771)

In past nested on Mangyshlak, in Syrdarya valley at Karauzyak station, on Ile river at Kapchagay and Dzharkent and on Markakol' lake (Korelov, 1962). One verbal record about finding nest with nestling in Ile delta (Zhatkanbaev, 1990). However in the following year this nest was occupied by White-tailed Eagle (*per* A.Zh. Zhatkanbaev). In lower reaches of Ile river opposite Malay Sary Mts. at one point two adults were observed 9 May 1985, one adult – 18 June 1985, and 2 May 1986 (*per* F.F. Karpov). Migrant and vagrant birds recorded several times in Volga – Ural – Emba area (two birds seen in wood near Urda end June 1990; Moseykin, 1991), in area of Aral Sea 28 July 2003 (Erokhov, 2004), on Turgay river, in area of Topar lakes (at 1 June 2003, adult bird; Dzhanyspaev, 2004a), in Kurgaldzhino Reserve, on Irtysh at Pavlodar 1 June 1994 (Solomatin, 1999b), on Chernyy Irtysh river, Chu and Ile valleys and in Alakol' depression (Berezovikov, 1991, 2002d).

Very rare breeding migrant, but there are no breeding records for last 50 years. Inhabits riparian forests and big lakes with reed-beds and single trees. Appears end February – early March (non-breeding birds observed April). Nest is built in tree (elm, Russian olive or willow) or on pile of old reed stems from twigs and reeds lined with thin twigs and hair. Clutches of 1-2 eggs March – early April. Autumn migration September – October, latest birds recorded November – early December.

82. **White-tailed Eagle** *Haliaeetus albicilla* (Linnaeus, 1758)

albicilla – nests on and near reservoirs with wood vegetation, on Ural valley, in Naurzum, Pavlodar area adjacent to Irtysh river, on Markakol' lake, in Zaysan and Balkhash-Alakol' depressions, in valleys of Ile, Chu rivers and in lower reaches of Syrdarya (Berezovikov, 1991). At last years its numbers increased. On migration and dispersal occurs everywhere. Wintering on not freezing reservoirs of southern Kazakhstan (on Sorbulak lake in particular) and at area adjacent to Northern Caspian sea, sometimes on Barsa-Kelmes I. (Gistsov, 1978). On channel Irtysh-Karaganda one bird recorded 10 February 1982 (Solomatin, 1999b). Near 120 birds observed on Chardara reservoir 18-21 December 2003 (Erokhov, Belyalov, 2004).

Rare breeding migrant. Inhabits riparian woods, steppe forest spots near fish lakes with reed-beds. Appears in end February or in March, latest birds, which fly in northern direction, observed in early April. Breeds by separate pairs, not close than 1-2 km one of other. Nest is built in tree (Asiatic poplar, Russian olive or larch) at 3-12 m above ground from thick twigs lined with dry grass, green leafed twigs are found in them often. Each pair has 2-3 nests, which used by turns. Yearly birds repaired them and old ones are very big. Clutches of 1-3 eggs in March, both parents incubate, but female mostly. Juveniles hatch in April. Both parents feed them and they fledge in early June – July. Autumn migrations in September – October, when they observed singles or in small groups at place with plenty of food (ducks and other birds). Latest birds registered in end October – mid November.

83. **Lammergeier** *Gypaetus barbatus* (Linnaeus, 1758)

hemachalanus *– larger race. Male wing length 790-870 (855), female 820-910 (880) mm. Dark breast band almost continuous.* Breeds in Dzhungarskiy Alatau and Tien Shan, behind exception probably Western Tien Shan. In 1989-1992 regularly occurs in Saur ridge (Starikov, 1997). Stray birds observed in Altai (Yablonskiy, 1907; 27 July 1989) and on Kurchumskyi Ridge (Zinchenko *et al*., 1992).

aureus *– smaller race. Male wing length is 805-815 (810), female 810-840 (830) mm. Throat and crop white or ochre with separate black strips, not forming necklace.* Breeds in Western Tien Shan.

Rare resident. Inhabits mountains at 2000-4000 m, above wood zone often, but when search for food occurs in lover belt also. Breeds very early, mating-behaviour and nest building observed in October – December. Nest is built in rock cave, inaccessible often, from thick twigs lined with rags, hair and other soft material. Both parents build it for around 55-60 days (observations in Almaty Zoo). Each pair has 2-3 nests, which used by turns and repaired each year. Clutches of 1-2 eggs in December – February. Both parents incubate for 55-57 days, brood and feed nestling. Juveniles hatch in March and fledge in early June – July, at around 3.5 months old and long time after they dependent of parents for food. In autumn birds are nomad, but details not known.

84. **Egyptian Vulture** *Neophron percnopterus* (Linnaeus, 1758)

percnopterus – breeds on Mangyshlak, in Karatau ridge, Talasskiy and Kirgizskiy Alatau, in Chu-Iliyskiye Mts. and in xerophytic spurs of Zailiyskiy and Dzhungarskiy Alatau (probably up to Alakol' lake). Here occurs on migration also. Occasionally recorded in western, central and eastern areas, including lower Ural and Uil valleys (end May 1963, 25 August 1969 and early September 1971; Djubanov, Troshchenko, 1978), Betpak-Dala (28 June 1984, juvenile; Kovshar, 1991), Sarysu lower valley (27 July, 3 August 1953), Saur (6-10 July 1863) and Southern Altai (5 September 1946; Dolgushin, 2002; Korelov, 1962).

Rare breeding migrant. Inhabits low desert mountains, chinks and river precipices among desert. Appears in end March – early April, and latest migrants observed in end April – mid-May. Nest is built in niche, small cave or on rock ledge from dry twigs lined with hair, pieces of sheep's clothing, rags and feathers. They are used yearly. Clutches of 1-3, usually 2 eggs in end April – May. Both parents incubate and feed juveniles, which fledge in July – August. Repeated breeding after lost of clutches is possible. Autumn migration begins in end August, latest birds observed in end September. During migration they occurs singly or rarely in groups of 2-3 birds, on Chokpak Pass recorded 3 and 18 September 2000.

85. **Griffon Vulture** *Gyps fulvus* (Hablizl, 1783)

fulvus – breeds in Zailiyskiy Alatau (Tien Shan) and in Karatau ridge where several colonies existed (Belyalov, 2002g; Kolbintsev, Chalikova, 2002a). New colony of near 20 pairs found in 2002 near Chulak-Kurgan village (Gavrilov, Kolbintsev, 2002b). On dispersion seen almost everywhere, including Naurzum (Gordienko, 1983; Bragin, Bragina, 2002), Central Kazakhstan (Andrusenko, Khrokov, 1981; Krivizkiy *et al*., 1985), southern Ustyurt (Gubin, 2002a; Plakhov, 2002), Betpak-Dala (Kovshar, Levin, 1993), Saur (Dolgushin, 2002) and Southern Altai (Berezovikov, 1989a), except for Western Kazakhstan. Clear migration is not known. Collected in Turaigyr gorge 15 February 1913, two birds recorded 18-21 December 2003 on Chardara reservoir (Erochov, Belayalov, 2003).

Rare breeding migrant. Inhabits rocky low mountains (1100-1200 m.) with xerophytic vegetation. Nests in colonies of one-two dozens pairs, at 30-50 and sometimes up to 100 m one of another. In colony in Karatau not far of Chulak-Kurgan village more than 12 juveniles fledge in 2002. Nest is built in small cave, hole or on ledge under rock protuberance from twigs, old grass stems lined with grass. Clutches of one egg in March. Both parents incubate by turns and feed juvenile. The time of fledge is unknown, but in 14 September 2002 young birds with full grown wings observed on nests. As Black Vulture, birds concentrate at places with plenty food (dead mammals) by hundreds. May be, that non-breeding specimens only take part in wide nomadic life over all territory of Kazakhstan in summer. No data about season migration are present.

86. **Himalayan Griffon** *Gyps himalayensis* Hume, 1869

Breeding in rocky parts of Dzhungarskiy Alatau, Northern and Central Tien Shan. Colony found in Zailiyskiy Alatau (gorge Chilik) in July 1989 (Dzhanyspaev, Belyalov, 1991) and the second one on Charyn river, 1700 m., in July 2002 (Sklyarenko et *al*., 2002; Sklyarenko, Belyalov, 2004). In April – June 2001 birds were observed in Kirgizskiy Alatau near Merke (*per* O.V. Belyalov). The colony in Dzhungarskiy Alatau spurs (on Usek river) described by N.A.Zarudny and B.P.Koreev (1905) as Himalayan Griffon, was reidentified by Sklyarenko *et al*. (2002) as Griffon Vulture, but later as Himalayan Griffon. One bird recorded at 4 January 2003 on Sorbulak lake (Belyalov, Karpov, 2004a).

Rare resident. Inhabits mountains of main ridges at 1700-3100 m. The known colonies of 3-5 pairs situated on big rock. Nests were in holes at 100-400 m above ground, they are built of dry twigs lined with grass and hair, and used some years in succession. Nests in April and early May contain on one egg. Chicks hatched in end-May and in mid-July juveniles were near the same dimension, as adult. No other data. On Chokpak Station one bird observed 20 September 2003.

Note. As Himalayan Griffon easy differs from Griffon Vulture in full dress only, but begins to nest in intermediate plumage, which resemble of Griffon Vulture plumage, it needs to be careful in bird determination, especially near the nest.

87. **Eurasian Black Vulture** *Aegypius monachus* (Linnaeus, 1766)

Breeding in Tien Shan, its spurs (Chu-Iliyskiye Mts., Karatau), Dzhungarskiy Alatau and probably Saur (Dolgushin, 2002). Inhabited nests known at Western chink of Ustyurt in 1998 (*per* R.G. Pfeffer), on Chu valley between Furmanovka village and 105-th geological party (Kovshar, Levin, 1993) and in Saur ridge (Berezovikov, Scherbakov, 1995). On dispersion occurs in Kazakhstan very widely, including Naurzum (Gordienko, 1983; Bragin, Bragina,2002), Tengiz-Kurgaldzhinskaya depression (Andrusenko, Khrokov, 1981; Krivizkiy *et al*., 1985), Pavlodar area adjacent to Irtysh river (Solomatin, 1999b), Southern and Western Altai, Kalbinskiy Altai, Zaysan depression, Monrak, Tarbagatay ridges (Berezovikov, Scherbakov, 1995) and Semipalatinsk area adjacent to Irtysh (Khakhlov, Selevin, 1928). Very rarely observed in winter, near Ust-Kamenogorsk, in Terskey Alatau 20 December, in Matay Mts. a pair recorded 1 November, on road Almaty – Bakanas 2 birds15 November 2004 and on Chardara reservoir 5 birds 18-21 December 2003 (Erochov, Belayalov, 2004).

Rare breeding migrant. Inhabits rocky low mountains and gently sloping hills of high ridges at 1300-1500 m. Appears in end February - early April. Breeds in separate pairs not closer 200-1500 m apart and in loose colonies of 2-4 pairs. Nest is built on rock face, steep slope near bush or in tree (spruce), from dry twigs lined with hair, felt pieces, grass and feathers and used many years, repaired yearly. Clutches of 1 egg in mid-March – April. Both parents incubate for 55 days and feed chick, which fledge in July – August. Sometimes many birds concentrate (up to one hundred and more) in areas of Saiga kittens (at summer) or where this antelope is hunted in big numbers (at autumn). Autumn migration not clear, at Chokpak Pass singles and groups of 2-4 birds observed from mid September up to end October.

88. **Short-toed Eagle** *Circaetus gallicus* (Gmelin, 1788)

gallicus *– smaller race. Male wing length 520-552 (532), female 420-570 (539) mm.* Nests on Mugodzhary ridge, in Central and possibly Northern Kazakhstan. One bird probably immature seen 16 July 2000 near Sary-Moin lake (Bragin, Bragina, 2002). Widespread on migration.

heptneri *– larger race. Male wing length 542-585 (552), female 561-605 (589) mm.* Nests in south Kazakhstan from Mangyshlak up to Dzhungarskiy Alatau (Korelov, 1962), in foothills of Narymskiy ridge on Southern Altai (Berezovikov, 1982; Berezovikov *et al*., 1997). In 1990 nested on south-western spurs of Monrak ridge and seen in summer at Kalbinskiy Altai (Starikov, 1997). It also breeds on Ile valley (Berezovikov, Zhatkanbaev, 1995), in Taukum desert and Zhusandala (*per* N.N. Berezovikov). Observed here on migration.

Rare breeding migrant, but common in places. Inhabits low xerophytic mountains and foothills of main Tien Shan ridges, river valleys with scattered trees, sandy and clay deserts with low and sparse grasses. In southern ridges nests up to 2500 m (Chatkal ridge), but hunting bird recorded at 3300 m. Appears end March – early April in southern areas; last birds observed mid-May. In more northern areas, arrives mid – end April. Breeds in separate pairs, not closer than 2-3 km from each other. Nest is built on rock or tree (saxaul, Russian olive, Asiatic poplar, juniper, hawthorn or pine), not far from ground; from dry twigs, unlined, but often with some green twigs. Usually nest used for some years, birds repair it yearly. Clutches of one egg in mid-May – June; both parents incubate approximately 30 days. Chick hatches mid – end June, and fledges in July – August. Latest feeding of young bird observed 20 September 1949. Repetition after loss of first clutches is possible. Autumn migration begins end August – early September. At Chokpak Pass they mainly migrate second half September – early October. On 7 October 1967 29 birds counted. They fly singly or in small groups of three (one brood?), often with other soaring raptors. Last observed mid - end October. In northerly areas they disappear in September.

89. **Marsh Harrier** *Circus aeruginosus* (Linnaeus, 1758)

aeruginosus *– male in full plumage has rufous-buffy head with dark brown streaking, back dark-brown with rusty edges, scapulars dark-brown with grey cross bands at base, upper tail coverts brown with grey spots, cheeks and ear coverts brown. First five primaries black with white base to inner webs, outer ones silvery. Others primaries bluish grey with whitish pattern. Throat whitish, breast and belly brownish-red with dark streaks. Female in full plumage has lighter head and top part of neck, back and shoulders darker than* ***spilonotus.*** Nests throughout plains of Kazakhstan, except waterless and mountain areas; widespread on migration. Wintering south of Chimkent. On Chardara reservoir 18-21 December 2003 observed 30 birds (Erokhov, Belyalon, 2004).

spilonotus *– male in full plumage has greyish-white head with sharp dark-brown streaks, back black with grey edges, scapulars and upper tail coverts black with silvery-grey cross pattern, cheeks and ear coverts black with greyish edges and streaks. First five primaries white at base, black at top with black outer web having silvery shade. Others primaries grey with black cross pattern and white spots on inner webs. Under parts white with black bands, sometimes with ochre shade on crop and breast. Female in full plumage has darker head and crown; back and scapulars lighter than* ***aeruginosus***. Possibly present in eastern and south-eastern Kazakhstan during migration. Unidentified subspecies of stray birds seen on Markakol' lake (Berezovikov, 1989a), on lake at confluence Bayancol and Tekes rivers in 1948-1950 at 2000 m (Korelov, 1960) and 21 August 1973 in highlands of Zailiyskiy Alatau ridge, Big Almaty Lake (Kovshar, Lopatin, 1983).

Common breeding migrant. Inhabits lakes, rivers and reservoirs with reed-beds and reed mace. Appears mid-March in southern areas, and mid-April in the north; at Chokpak Pass last birds observed up to mid-May. Breeds in separate pairs, not closer than 200 m apart. Nest is built in reed-beds or mace reeds amongst water, on islands or shores 5-10 m from water with twigs, dry reed and grass stems and other vegetation, carried in feet. Clutches of 3-6, more often 4-5 eggs mid-April – May. Female incubates from first egg for 32-35 days, male feed her. Juveniles hatch second half May – early July. Both parents feed them and they fly early July – August. Autumn migration begins end August, and in northern areas they disappear mid-September, but in southern areas mid – end October only.

90. **Hen Harrier** *Circus cyaneus* (Linnaeus, 1766)

cyaneus – probably breeds in forest-steppe zone of Northern Kazakhstan; nests in mountains of south-west Altai (Berezovikov, 1989a), in Malaya Ul'ba valley, and also in Dzhungarskiy Alatau near Topolevka village (*per* S.L. Sklyarenko). Widespread on migration. Wintering in southern and south-eastern Kazakhstan.

Rare breeding migrant, not uncommon during migration. Inhabits tall grass meadows amongst forests. Appears end February – March, latest migrating birds observed mid-May. Nest is built on ground from dry thin twigs and grass. Clutches of 2-5, more often 4-5 eggs end May – June. Females begin incubating from first egg for nearly 30 days; males feed them. Juveniles fledge at 35-40 days old mid-July – August. Autumn migration begins in August. On Markakol' lake they disappear by end September, in southern areas they appear in September; with peak migration in October; latest birds recorded end October – November.

91. **Pallid Harrier** *Circus macrourus* (S.G.Gmelin, 1771)

Breeds in northern half of Kazakhstan, south to Kamysh-Samarskiye lakes, upper reaches of Emba river, Dzhezkazgan, an area north of Balkhash lake, Kalbinskiy Altai, southern foothills of Tarbagatay and probably in eastern part of Dzhungarskiy Alatau (Berezovikov, Levin, 2002b); also in Syrdarya river valley and western foothills of Chu-Iliyskiye Mts., where was common in 2003 (Belyalov, 2004b). Widespread on migration. Sometimes winters in Zaysan depression (Starikov, 1999a), near Ust-Kamenogorsk 12 November 1995 (Srarikov, 1999) and 5 November 1978 observed close to Makanchi.

Common breeding migrant. Inhabits dry steppe, semi-desert, and forest-steppe zone episodically, with or without bushes, often not far from lakes and meadows, especially in dry summers. Appears end March – early April in the south (latest record at Chokpak Pass 1 May) and end April in north areas. Nest is built on ground or rarely on pile of old reeds or hay-cocks from old dry stems and lined with grass. Clutches of 3-7, usually 4-5 eggs end April or May – June. Female incubate for nearly 30 days, male feed her. Chicks noted end May – July; both parents feed juveniles, which fly end June – August. Autumn migration begins end August, most birds migrate September – October. Latest observations end October. Like other harriers, they migrate mostly singly or in small groups but at Chokpak Pass on 5 September 1969 a loose flock of 174 harriers flew for 30 minutes (6.30-7.00 hours) at height of about 1000 m (species not identified).

92. **Montagu's Harrier** *Circus pygargus* (Linnaeus, 1758)

Breeds and migrates widely on plains and in foothills. Occasionally wintering in southern and south-eastern Kazakhstan, where collected 1 February 1928 on Syrdarya valley and 5 January close to Chilik, Ile valley.

Common breeding migrant. Inhabits damp meadows or shore of lakes and rivers with tall grass, reed-beds and shrubs. In southern mountains don't nests above 1500-2000 m. Appears end March or early April in south (latest noted in May), and mid – end April in north. Nest is built from dry grass stems on ground amongst tall weeds, dry reed beds or under bushes. Clutches of 3-8 (often 4) eggs in May – June. Replacement clutches after destruction recorded 9 July. Female incubate for about 30 days, male feed her. Both parents feed juveniles, which fly aged 35 days mid-July – early August. Autumn migration from mid-August; most birds leave first decade September. Latest migrants observed end September – mid October.

93. **Northern Goshawk** *Accipiter gentilis* (Linnaeus, 1758)

buteoides *– upper parts light grey with strong bluish shade, head light, supercilium white and broad; forehead usually white, cross pattern on under parts makes narrow pale-grey stripes. About 10% of population of eastern half of this race are birds of light morph, colouring varies from pure white to white with pale, strongly reduced brown pattern. In populations of this race there are some birds which commonly are intermediate between grey and white morphs. Male wing length 308-342 (321), female 340-380 (361) mm.* Observed on migration and in winter in Kazakhstan.

schvedowi *– upper parts significantly darker than* ***buteoides****, bluish grey shade here more developed; crown and ear coverts of males are black, of females are dark slate. Supercilium wide and sharply separated. Cross pattern on under parts narrow and dense dark-grey stripes. Dark stripes on crop and breast poorly developed or absent. Male wing length 298-323 (307), female 330-362 (349) mm.* Breeding in Northern Kazakhstan, in Kokchetav forest (Kovshar, 1996a), in south-west Altai (Berezovikov, 1989a; Berezovikov *et al*., 1992), in Kalbinskiy Altai (Egorov, Borisov, 1979), and also in Northern Tien Shan (Zailiyskiy Alatau ridge; Korelov, Pfander, 1983) and Dzhungarskiy Alatau; nests found occasionally in Naurzum pine forest (Voloshin, 1949; Bragin, Bragina, 1999) and in Aman-Karagay pine forest (Gaydenko, 1981). Occurs on migration and during winter in the south.

Rare breeding migrant. Inhabits plains and mountains, deciduous, coniferous and mixed forests up to 1500 m in Altai and 2300 m in Tien Shan. As it winters in many areas, spring migration is not pronounced. In non-breeding areas observed end February – mid-end April (Chokpak Pass, Pskem ridge), in more northerly regions from March – end May. Nest is built in coniferous or deciduous trees (pine, spruce or birch) 5-10 m above ground, from twigs lined with dry grass and green twigs. Sometimes old nests of other birds are also used. Clutches of 2-4 eggs in May – June. Female incubates from first egg for about 35 days; male feeds her and chicks. Juveniles fly in August aged 50 days. Autumn migration begins September in northern areas and October in the south and ends mid November.

94. **Eurasian Sparrowhawk** *Accipiter nisus* (Linnaeus, 1758)

nisus *– in general smaller than* ***nisosimilis****. Male wing length 188-210 (201), female 223-248 (236) mm.* Breeds in middle current of Ural valley (Gubin, Levin, 1982), Northern Kazakhstan, Kokchetav forest (Kovshar, 1996a), Irtysh valley at Pavlodar (Solomatin, 1999a), south-west Altai (Berezovikov, 1989a; Berezovikov *et al*., 1992), Kalbinskiy Altai (Egorov, Borisov, 1979), Kazakhishe upland (Karkaralinsk, Konyr, near Akbastau; Erjanov *et al*., 2004), Dzhungarskiy Alatau and Northern Tien Shan. Since 1978 it has nested in Naurzum Reserve (Bragin, 1980; Gordienko, 1983). Widespread on migration. Occasionally winters at Markakol' lake 4 - 29 November 1980, 3 - 13 December 1980, 1 January - 31 March 1981(Berezovikov, 1989a), but usually in southern Kazakhstan.

nisosimilis *– in general larger than* ***nisus****. Male wing length 200-219 (208), female 240-255 (247) mm.* Migration in east and southern areas of Kazakhstan from October onwards. Wintering on Syrdarya valley (Spangerberg, Feigin, 1936).

dementjevi *– upper parts darker, rusty tone of pattern on under parts more intensive than* ***nisosimilis****. Under parts lighter, generally smaller than Himalayan race* ***melaschistos****. These distinctions are most obvious in males. Male wing length 205-210 (208), female 240-256 (250) mm.* This race nests in Western Tien Shan, where nests were found in 1966 by A.F.Kovshar (1966) and in 1971 by B.M.Gubin (1989b).

Common breeding migrant. Inhabits plains and mountains, coniferous and deciduous forests, up to 2500 m in Zailiyskiy Alatau. In southern areas appears in March; most birds migrate in April and some observed up to mid-May. In more northern areas it migrates in April – May. It needs to note, that all late migrants caught at Chokpak Pass in April – May are immature second year birds. Breeds in separate pairs not close one to other. Nest is built in various trees, both deciduous and coniferous species (spruce, fir, apple, birch or aspen), 2-10 m above ground. Built of dry twigs and lined with old grass. Sometimes old nests of Magpie are repaired and used for breeding. Clutches of 2-5, usually 3-4 eggs, in mid-May – June. Female incubates from first egg for more than 30 days and cares for chicks; male brings food for them. When chicks are well grown, both parents fly for prey. Young leave nest July – August and stay nearby for a long time, dependent of parental feeding. Autumn migration begins end August and continues until November, peaking in September – first half of October.

Note. Analysis measurements of 105 hatching year sparrowhawks, caught at Chokpak in 1990-1994, show that in early and late migration its wing not differ significantly. Here *nisus* and *dementievi* dominated and more big *nisosimilis* from Eastern Siberia rarely occurs in mid – end October. It is confirmed by ringing results too. From ringed at Chokpak birds 4 recovered from Russian Altai and one ringed at Abakan (52'56N 90'56E) was found in Eastern Kazakhstan close to Zyryanovsk, 49'40N84'16E (Gavrilov, 2004).

95. **Shikra** *Accipiter badius* (Gmelin, 1788)

cenchroides – nests in Syrdarya, Ile, Karatal and probably Lepsy valleys. A nest with eggs found by E.Auezov and A.Grachev 15 June 1972 in lower reaches of Tentek river (Berezovikov, Erokhov, 2004). Seen on migration in southern and south-eastern Kazakhstan.

Rare breeding migrant. Inhabits riparian forests in deserts with clearings and shrubs. Appears late; mid - end April. Latest birds recorded first decade May at Chokpak Pass. Nest is built in Russian olive, elm, Asiatic poplar or apricot 2.5-12 m above ground, from dry twigs, lined with dry leaves and bark. Clutches of 2-7, usually 3-4 eggs second half May – early June but repeat clutches recorded early August. Both parents incubate from first egg for 30-35 days; mainly female, which is fed by male. Chicks hatch from end May-June. Both parents feed juveniles, which fledge mid-end July. Autumn migration begins mid-August; most birds migrate end August – early September. At Chokpak Pass, last Shikra caught 20 October 1988.

96. **Levant Sparrowhawk** *Accipiter brevipes* (Severtzov, 1850)

Breeds in middle and lower reaches of Ural valley, south to Chapaevo village (Shevchenko *et al*., 1978; Debelo, 1991). In Mugodzary ridge (Urkach forest) recorded mid June (Kovshar, Davygora, 2004). On migration seen at Atyrau and on Mangyshlak.

Rare breeding migrant. Inhabits riparian forests with small meadows and bushes. Appears in late spring. One observed on Mangyshlak 26 April 2004, next one obtained 12 May (Korelov, 1962). Single bird observed 10 May 1989 on Ustyurt (Rustamov, 2004). Nest is built in elm, poplar or oak from dry twigs; lined with dry grass and green leaves. Clutches of 4-5 eggs in May – June; juveniles hatch end June and fly July onwards. Autumn migration begins end August (one shot near Atyrau), but one still at nesting site 8 September 1978. Near Kazalinsk obtained by N.A. Zarudnyy 4 September 1908. In Kysylkum desert one bird recorded 17 September 1973 (Kashkarov *et al*., 1974).

97. **Common Buzzard** *Buteo buteo* (Linnaeus, 1758)

vulpinus *– three colour morphs considered: brown with rusty-red colour mixture and mottled under parts (most numerous); brown mixed with ochre colour on belly; and brown monotone. Characterised by significant development of rusty-red including rectrices. Male wing length 343-370 (353), female 358-383 (370) mm. Tarsus feathers approximately half; emargination on outer web of P6 usually seen between tops of P8 and P9.* Breeds in middle reaches of Ural river (Gubin, Levin, 1982), Northern Kazakhstan, Shortandy area (Berezovikov, Kovalenko, 2001), Kokchetav upland, in woods of Kazakh uplands, in Kalbinskiy Altai and Chernyy Irtysh valley (Korelov, 1962). Occasionally breeds in Naurzum pine forest (Pererva, 1979; Bragin, Bragina, 2002). Widespread on migration. Wintering in Southern Africa.

Rare breeding migrant, but during seasonal movement its numbers are very high. Inhabits riparian forests, coniferous forests of plains and mountains with open steppe patches nearby. Appears in southern areas mid-March early April; most birds migrating in April (180 birds at Chokpak Pass flew over 11 April 1973); latest ones observed mid-May. In more northern areas, appears from mid-April. Birds fly singly, in small groups and in flocks up to 50. Nest is built in upper part of deciduous (birch, aspen, poplar) or coniferous (pine, spruce, fir) trees at 4-15 m above ground, from dry twigs and lined with old grass and hair, also often with green twigs, especially when chicks hatch. Exceptionally, one nest recorded on rock near Karkaralinsk by I.A.Dolgushin in 1938. Clutches of 3-4, rarely 5 eggs end April – May. Probably both parents incubate from first egg; approximately a month. Chicks appear end May – June, both parents feed them and they fledge July – early August. For more than one month they depend on parents for food. Repetition after loss of first clutches is possible. Autumn migration begins mid-August – early September but in northern areas they leave mid – end September. At Chokpak Pass peak migration mid-September, when some thousand Common Buzzards can be counted per day. Latest birds recorded mid - end October.

98. **Eastern Buzzard** *Buteo japonicus* Temminck et Schlegel, 1844

japonicus *– two colour morphs considered: brown with mottled under parts, and brown monotone (recorded in Central Asia). Characterised by slight rusty-red colour, which comes close to B. buteo buteo, but a little lighter. Rectrices bluish-brown. Male wing length 362-400 (379), female 378-426 (399) mm. Tarsus more than half feathered. Emargination on outer web of P6 usually seen between tops of P9 and P10.* Distribution is not well known. Breeding in Altai, on Saur, Dzhungarskiy, Ketmen', Terskey, Kungey and Zailiyskiy Alatau ridges as far as Almaty. In eastern and southern Kazakhstan observed on migration and in winter, as well in Uzbekistan and India.

Rare resident and short distant migrant. Inhabits mountain conifer and mixed forest with meadows and steppe slopes nearby. Nest is buit on spruce, fir, asp and poplar up to15 m of ground from twigs and lined with bast and green twigs. In Bayankol ravine (Terskey Alatau) 28 April 1957 it has 3 weak fertilised eggs (Vinokurov, 2004), collected female was probably a hybrid with *B. rufinus*. In Ketmen' medium-sized nestlings found in nest 4 June and near to fledge 25 June and 26 July. In Altai close to Ridder feathered nestlings recorded at nest 10 July and flying juveniles 24 July (Korelov, 1962). In Almaty collected 22 May 1906 and one bird caught 8 December 1973. At Chokpak Pass autumn migration begins 12 September 1994, latest 22 October 2001, most birds caught in October (in 1992-2001 it was caught 181 *B.buteo* and 14 *B.japonicus*).

99. **Long-legged Buzzard** *Buteo rufinus* (Cretzschmar, 1827)

rufinus – breeds in southern half of Kazakhstan, north to Kamysh-Samarskiye lakes (Shevchenko *et al*., 1978), Aktau mountains in Utva-Ilek region (Berezovikov *et al*., 1995), Tersek pine

forest in Naurzum Reserve (Bragin, 1980; Gordienko, 1983), Aktobe, Karaganda (Korelov, 1962), in Shortandy area (Berezovikov, Kovalenko, 2001), Kyzyltau Mts. at Zhosaly village (Solomatin, 1999a), Semipalatinsk area (Berezovikov, Kovshar, 1991) and Zaysan depression. Summering and dispersing birds observed to the north. Widespread on migration in the above areas. Stray bird observed on Markakol' lake 28 May 1983 (Berezovikov, 1989a). Wintering in south of the Republic.

Common breeding migrant. Inhabits desert, dry steppe, low xerophytic mountains and foothills. Appears end February – early March, peak migration end March – mid-April. At Chokpak Pass last birds observed up to mid-May. Nest is built on rocks and in trees or bushes (saxaul, elm, tamarisk), on electricity poles, triangulation towers, graves, and on steep hill slopes; from dry twigs and grass stems, lined with old grass, hair, rags *etc*. Nests are used for some years, and repaired by both birds yearly. Clutches of 2-5 eggs in April – May. Incubation begins from first egg and continues approximately 40 days. Chicks hatch end May – June. Both parents feed juveniles, which begin flying end June – early August. Autumn migration at Chokpak Pass begins mid-August – early September; many birds observed in October (416 Long-legged Buzzard were counted 19 October 1969 between 09.50 - 11.00). Latest birds observed mid November. In more northerly areas it disappears end September.

100. **Upland Buzzard** *Buteo hemilasius* Temminck et Schleger, 1844

Before it was a winter visitor only. First breeding record of Upland Buzzard was proved in 1990 (Pfander, Schmygalev, 2001), though it proposed as breeding for Tarbagatay and Dzhungarskiy ridges (Korelov, 1960). Now breeding in foothills of Southern Altai, in Monrak, at Zaysan depression, on Tarbagatay, in Saur and eastern part of Dzhungarskiy Alatau (Berezovikov, Starikov, 1991; Berezovikov, Levin, 2002a, 2002b; Scherbakov, 1992a). In recent decades its numbers increased and established in a southerly direction. Breeding hybrids recorded on Syugaty valley in 2001 (Kovalenko, Sklyarenko, 2002a). In 2003 breeding female recorded on Ustyurt (Karyakin *et al*., 2004). On migration and in winter seen in Southern Altai (Berezovikov, 1989a), in Ile valley, on plains adjacent to Tien Shan and at Chokpak Pass, where a hybrid with *Buteo rufinus* caught 13 October 2000.

Rare, in places common resident. Inhabits upland steppes and wide mountain valleys with rocks and cliffs. Very fragmentary data exists on biology. Spring movement end February – March. Nest is built on rocks from dry twigs; nest cup lined with old grass, hair, rags, *etc*, and often used for some years. Clutches of 2-4 eggs end April – early May. Both parents feed juveniles, which begin to fly end July – early August. When it began to colonise new areas in a westerly direction, from 1991 it freely hybridised with Long-legged Buzzard (Pfander, Schmygalev, 2002), and now such hybrids are not rare on breeding and migration. In autumn first birds in adjacent areas to breeding sites appeared end August; at Chokpak Pass they caught mid-October.

101. **Rough-legged Buzzard** *Buteo lagopus* (Pontoppidan, 1763)

lagopus *– darker race. Dominant colour of upper parts dark-brown, sometimes black-brown. Edges of back feathers and scapulars usually grey. Under parts dark. Streaks on throat and crop are brownish and poorly developed. Belly feathers, sides of body and leg feathers usually dark-brown with light cross bands. Cross bands on tail feathers are dense, black-brown and usually go up to base of tail. Male wing length 406-438 (418), female 426-468 (444) mm*. Wintering in Kazakhstan; geography of distribution not well known.

menzbieri *– lighter race. Dominant colour of upper parts light brown. Edges of feathers on back and scapulars usually whitish. Under parts lighter. Streaks on throat and crop poorly developed. Feathers on belly, sides of body and leg feathers light with dark cross bands. Cross bands on tail narrower and fewer, base of tail feathers white. Male wing length 416-450 (434), female 435-470 (451) mm.* Wintering in Kazakhstan; geography of distribution not well known.

Common winter visitor. Occurs in open landscape of steppe and desert zones, where poles, trees or stacks are present. Twice observed 15 December 1974 and 8 January 1975 in highlands of Zailiyskiy Alatau, Big Almaty Lake (Kovshar, Lopatin, 1983). In autumn occasionally appears end September, mainly in October or early November, no intensive migration was observed. Spring migration more noticeable; begins end February – March, most birds seen late March – early April. Last birds observed end April. At Chopak Pass singles ringed 31 March – 4 April 1986, 14 September 1983 and 5 October 1985.

102. **Spotted Eagle** *Aquila clanga* Pallas, 1811

Breeding in middle reaches of Ural valley (Gubin, Levin, 1982), in Ust'-Kamenogorsk area and on Syrdarya valley (Chiili – Kzyl-Orda). There are indications of sporadic nesting in Aman-Karagay pine forest (Gaydenko, 1981) and Naurzum pine forest (Gordienko, 1983); a fledgling caught in foothills of Narymskiy ridge (Scherbakov, Kochnev, 1983). Also found in Western Ustyurt (Zaletaev, 1968). In summer observed on Mugodzhary ridge (Varshavskiy, 1977). On migration and dispersal seen almost everywhere, including Southern Altai (Berezovikov, 1989a). Wintering in small numbers, recorded in December – February.

Rare breeding migrant. Inhabits flood plain forests, tree patches in steppes (deciduous or coniferous) near lakes. In southern areas appears mid-February, but mostly March, latest birds observed 7 May. In more northern areas first birds recorded in April. Nest is built in trees at 3-25 m above ground, from dry twigs, lined with old grass, bark pieces and rags and green twigs are found often in them. Used for some years, but nests of other raptors also used for breeding. Clutches of 1-2 eggs late April – May, juveniles hatch in June. Both parents feed them and they fledge end July – August. Brood remains together until mid-September. Autumn migration begins end August, but at Chokpak Pass mid-September.

103. **Steppe Eagle** *Aquila nipalensis* (Hodgson, 1833)

orientalis *– somewhat lighter and smaller. Male wing length 515-560 (535), female 550-605 (575) mm.* Widespread nesting. Breeds north up to Uralsk, Naurzum steppes (Gordienko, 1986b; Bragin, Bragina, 2002), Tengiz-Kurgaldzhinskaya depression (Andrusenko, 1986b), Krasnokutsk village in Pavlodar area adjacent to Irtysh river (Solomatin, 1986), Semipalatinsk area (Berezovikov, Kovshar, 1991) and Kalbinskiy Alai (Sklyarenko *et al*., 1999); east to Zaysan depression, foothills of Tarbagatay ridge (*per* N.N.Berezovikov), Dzhungarskiy Alatau (Pfander, 1983, 1986) and Syugaty valley (Sklyarenko *et al*., 1999), where appears only in recent decade. In eastern Kazakhstan intergrades with ***nipalensis*****.** Vagrants met to the north, at Markakol' lake 8 June 1876 (Berezovikov, 1989a). Accident winters in Aksu-Dzhabagly Nature Reserve at 1991/92 (Kolbintsev 1997) and on Chardara lake, where three birds recorded 18-21 December 2003 (Erokhov, Belyalov, 2004).

nipalensis *– darker and larger race. Male wing length 565-610 (585), female 600-645 (625) mm.* Occupies Asian part of species distribution west to Altai. Within the boundaries of Kazakhstan can be found on migration in Tien Shan foothills.

Common breeding migrant. Inhabits arid steppes, semi-deserts and northern deserts with rocky outcrops, low xerophytic mountains and foothills of high ridges, where rodents live. In mountains nests up to 2000 m. Appears March or early April; in the springs of 1951-52 a strong migration was noticed north of Aral Sea (Varshavskiy 1957). Latest migrants observed at Chokpak Pass mid-May. Breeds in separate pairs, 0.5-1.5 km apart from each other. Nest is built on small hills, amongst shrubby patches on ground, on rocks or on separate trees from dry twigs lined with grass, rags, horse droppings, and used for some years. Clutches of 1-3 eggs in April – early May. Juveniles hatch from end May. Both parents feed them and they fledge around 60 days old from end June – early August. Autumn migration begins from end August; they leave mainly in September. A strong migration was noticed more north-westerly from Emba river area and Mugodzhary mountains through Ustyurt plateau (Varshavskiy 1957). At Chokpak Pass peak migration in October, when scattered flocks of several dozen birds not unusual, and several hundreds can be seen in one day. In 2004 one *nipalensis* caught 20 September and one *orientalis* 1 October. Last birds observed here end November.

104. **Eastern Imperial Eagle** *Aquila heliaca* Savigny, 1809

heliaca – nests widely on plains and foothills north up to Urda, Naurzum (Bragin, Bragina, 2002), Kyzyltau Mts. (Solomatin, 1999b), Semipalatinsk, Kalbinskiy Altai and foothills of Southern Altai, where one brood recorded in 1998 (Belyalov, 1999). Widespread on dispersal and migration, including Markakol' lake (Berezovikov, 1989a) and Kurgaldzhin Reserve (Andrusenko, 2002). Sometimes observed in winter on Kalbinskiy and Western Altai (Scherbakov, Kochnev, 1983), and in Chu valley, also at Barsa-Kelmes in winter 1971/72 (Gistsov, 1978).

Rare breeding migrant. Inhabits tree patches in steppe, riparian forests, sandy deserts with scattered trees and foothills of mountain ranges. Appears in southern areas in March and rarely until end April; arrives April in northern ones. Both parents build nest in trees (pine, spruce, birch, poplar, Russian olive, saxaul, tamarisk) at 1-15 m above ground, and very rarely on ground, from dry twigs lined with old grass, rags, hair, horse droppings and green twigs often for 10 days. Nests used some years, birds repair

them annually. Clutches of 1-3, usually 2 eggs early April – end May. Both parents incubate from first egg for 43 days. Juveniles hatch mid-May – June, male hunts and female feeds them; fledging at 65-77 days July – August. Adult with juvenile recorded 27 September in Altai. Autumn migration begins mid-September; at Chokpak Pass most birds observed in October. Elsewhere in Kazakhstan, latest birds recorded late November.

105. **Golden Eagle** *Aquila chrysaetos* (Linnaeus, 1758)

chrysaetos *– lighter race. Upper parts brownish-rusty-brown, forehead and crown brown and lighter. Long nape feathers and top neck feathers rather long and rusty-gold. Male wing length 590-670 (630), female 670-700 (685) mm.* Probably occurs in Western Kazakhstan.

kamtschatica *– darker race. Upper parts darker with some black. Forehead and crown darker than* ***chrysaetos****, dark "cap" on crown. Long nape feathers and top rusty-red neck feathers slightly narrower and darker than* ***chrysaetos****. Male wing length 618-705 (657), female 650-741 (695) mm.* Breeding in Northern Kazakhstan and Altai. From 1993 breeds in Naurzum, Tersek and Sypsyn pine forests (Bragin, Bragina, 2002). Probably, a bird of this race was shot in Kurgaldzhino (Krivizkiy *et al*., 1985).

homeyeri *– general colouring somewhat darker than* ***chrysaetos*** *but a little lighter than* ***kamtschatica****. Forehead and crown brownish, crown has noticeably blackish "cap" less obvious than* ***kamtschatica****. Long nape feathers and top neck feathers shorter than previous races, rusty-red, slightly lighter than* ***kamtschatica****. Male wing length 600-643 (622), female 635-684 (662) mm.* Breeding in Kyzylkum desert, Ustyurt and probably in Betpak-Dala.

daphanea *– general colour dark as* ***kamtschatica****; upper parts blackish. Forehead and crown dark, crown has blackish "cap". Long nape feathers and top neck feathers little shorter than* ***chrysaetos*** *and similar to* ***homeyeri****. Colouring rich brown-red shade. Male wing length 600-680 (640), female 660-720 (705) mm.* Breeding in Tien Shan, Dzhungarskiy Alatau and Tarbagatay ridges.

Rare, in places common resident. Inhabits mountains up to 3000 m, riparian forests in deserts, tree patches in steppes. Breeds in separate pairs, not closer than 2-3 km apart. Nest is built on rocks or in trees from dry twigs lined with hair, rags and green in leaf twigs are also used. Each pair has 2-4 nests, which are used in turn. Repairs old or builds new nest in March or early April. Clutches of 2, rarely 1 egg April – May. Incubation about 45 days, juveniles hatch end May-June. Both parents feed them and they fledge mid-July – August. Broods stay together a very long time, and only break up by winter. Out of breeding season disperses widely, disappearing from high-altitude in November.

106. **Booted Eagle** *Hieraaetus pennatus* (Gmelin, 1788)

pennatus *– smaller race. Male wing length 355-386 (378), female 390-411 (403) mm.* Breeds in Dzhungarskiy Alatau, Northern and Western Tien Shan, sporadically in Ile delta, Karkaralinsk (Mal'zeva, 1983), Bayanaul (Solomatin, 1986), and also on Mugodzhary ridge in Urkach forest (Varshavskiy *et al*., 1977). In July 1988 observed in middle reaches of Ilek at Zhuldus station (Abdrushin, 1989) and 20 June 1996 in valley of Ural between Atyrau and Inder (*per* O.V. Belyalov). Seen on migration in the same areas.

milvoides *– larger race. Male wing length 380-395 (388), female 405-435 (420) mm.* Breeds in Altai, where recorded in Bukhtarma valley and on Markakol' lake (Berezovikov, Rubinich, 2001); on migration observed in eastern and south-eastern areas. During summers of 1980-1990 it was repeatedly observed in Western and Southern Altai, Zaysan depression and Saur ridge (Baydavletov, 1986; Starikov, 1997). Probably this race observed 28 August 1981 and in May 1987 in Kurgaldzhino Reserve (Andrusenko, 2002), where light morph recorded 3 June (Kovalenko, Kovshar, 2004).

Rare breeding migrant. Inhabits riparian forests, deciduous and coniferous forests of plains and mountains with open spaces nearby. Appears mid-March, but mainly April. Breeds in separate pairs not closer than 2 km apart. Nest is built in trees (walnut, ash, spruce) at 5-10 m above ground, and very rarely on rocks; from dry twigs lined with old grass stems; green twigs with leaves are found in them often. Nest used for some years. Clutches of 1-2 eggs mid-April – May. Only female incubates, male feeds her. Both parents feed juveniles which fledge July – August; small chicks observed at one nest 17 August. Autumn migration begins end August; last birds observed end October.

107. **Bonelli's Eagle** *Hieraaetus fasciatus* (Vieillot, 1822)

fasciatus – stray birds obtained on Karatau ridge near Turkestan (probably in 1912) and on Syrdarya valley at confluence of Keles (6 October 1906).

Very rare vagrant. We cannot reject the possible breeding in southern Kazakhstan, as it inhabits low xerophytic mountains and low spurs and foothills with clay precipices. Nest is built on rocks or in niche of precipices. N.A. Zarudnyy (1915) at end May – early June found several nests in Kyzylkum desert close to Kazakhstan.

108. **Osprey** *Pandion haliaetus* (Linnaeus, 1758)

haliaetus – breeds on Markakol' lake in Southern Altai, on Irtysh, Chernyy Irtysh and Ile valleys, in Balkhash-Alakol' depression, in Syrdarya and Ural river valleys (Berezovikov, 1991). In summer recorded in Naurzum Reserve (Bragin, Bragina, 2002). Widespread on migration, even in Betpak-Dala (Gavrilov *et al*., 1978) and in Ustyurt (Kovshar, 1995).

Rare breeding migrant. Inhabits fish lakes and rivers with arboreal vegetation. Arrives when lakes are free of ice, in southern areas migration begins end March – early April and continues to early May. In northern areas and on Markakol' lake appears in April. Migrates singly, though in places up to 5 birds can be seen on 1 km of shore. Pairing at breeding site. Nests in separate pairs, 2-15 km apart, both near water and up to 1 km away. Nest is built in trees (Poplar, Ash, Larch), especially with broken top, 4-20 m above ground, from twigs, shallow cup lined with dry grass, and generally used several years. Clutches of 2-3, rarely 4 eggs end April – late May. Both parents incubate for more than a month and feed juveniles, which fly mainly mid-August. Autumn migration from September – mid-October.

109. **Lesser Kestrel** *Falco naumanni* Fleischer, 1818

Breeds everywhere, excluding sandy deserts and highlands. At recent years two small colonies recorded in steppe valley on Narym river (Berezovikov, Rubinich, 2001). On migration occurs everywhere, in Western Tien Shan up to above 3000 m.

Common breeding migrant. Inhabits steppe and desert with rocky outcrops or clay-stone precipices, low mountains with rocky gorges and foothills of main ridges. Prefers areas, where grass plain or hills with numerous locusts and other insects. Appears in March, but mostly in April. Migrates in loose flocks or small groups. Latest birds at Chokpak Pass observed in mid-May. Breeds in colonies of one-two dozen, but separate pairs are not rare. Nest is built in rock or clay cavity, between stones or in any cavity under bridge, in old houses, sheep-folds or grave constructions. No special materials are used for nest. Old Dove nest is used rare. Clutches of 2-7, usually 4-5 eggs in end April – May or in early June (may be late nesting of first-breeders). Females incubate mainly, but males change them for short time (they have brood patches too) and feed them. Incubation lasts 24-28 days. In one colony nests with fresh eggs and juveniles of different age can be found in the same time. Both parents feed juveniles, which hatch in end May – June and fledge at 35-40 days old, in July – August. Repeated breeding after loss of clutches is possible. Post-breeding dispersal begins from end June, when flocks of Lesser Kestrel migrate to northern areas with plenty food (observed in Central Kazakhstan). Autumn migration to south begins in August. At Chokpak Pass first birds appear in end August – early September, main migration in September, up to 60 birds sitting on stationary traps 25 August 2003. Birds migrate in loose flocks or groups, when foraging, but passage fly is carried out in dense flocks of some dozen specimens (observed at Kshi Kaindy Pass, Talasskiy Alatau, 3000 m). On roosting one-two thousand birds can be observed in suitable place. Latest birds registered until mid-October.

110. **Common Kestrel** *Falco tinnunculus* Linnaeus, 1758

tinnunculus – breeds everywhere; prefers plains and river valleys with trees and shrubs vegetation, xerophytic mountains and highlands at Big Almaty Lake up to 2700-2800 m. On migration occurs everywhere. Rare wintering in south and south-east, sometimes in vicinities of Semipalatinsk in end November – early December (Panchenko, 1968) and near Zerenda 24 February (Korelov, 1962).

Common breeding migrant. Inhabits forest-steppe, steppe and desert with groves, riparian woods, forest-belts, clay-stone precipices with open areas nearby, low mountings, foothills and main ridges, where forest and grass slopes are present. Appears in March – early April, at Chokpak Pass migration continues in April and finishes up to mid-May. Breeds in separate pairs or very rare in small groups of 5-10 pairs. Nest is built of bird itself very rare (from dry twigs lined with rags), old nests of other species (Crow, Magpie, Rook, Kite, Eagle and so on) are used often. They can be found on trees, bushes, in cavity of precipice or rock. Clutches of 3-7 eggs in April or early May, but in some cases in June only. Female incubates mostly, but male changes it for short time in a day and feed her. Incubation begins from first egg and continues near 30 days. Juveniles hatch in mid May – June, both parents feed them and they fledge in end May – July. Repeated breeding after loss of first clutches is possible. Autumn migration

singly or in small loose groups begins in mid August. From northern Kazakhstan disappear in mid-September, but at Chokpak Pass main migration in third decade of September – second decade of October, and latest birds observed in early November.

111. **Red-footed Falcon** *Falco vespertinus* Linnaeus, 1766

Breeds in northern Kazakhstan south up to Urda, lower reaches of Ural river, middle current of Emba valley (Varshavskiy, 1965), Naurzum, Akmola, foothills of Western Altai (Korelov, 1962), in western part of Kalbinskiy Altai (Berezovikov, Rubinich, 2001), in valleys of Bukhtarma (Berezovikov *et al*., 1992) and Chernyy Irtysh rivers (*per* N.N. Berezovikov). On migration seen in southern areas including Chokpak Pass (Gavrilov *et al*., 2002), a stray bird observed 27 April 1982 on Markakol' lake (Berezovikov, 1989a).

Common, in places abundant breeding migrant. Inhabits forest-steppe and steppe zone with groves and riparian woods alternate with open areas. Appears in mid-April – early May, latest migrant observed near Arys station 10 May. Migrates in flocks and singly; visible migration poorly expressed. Breeds in loose colonies or in separate pairs. Nest is built in deciduous rarely coniferous trees, more often old Crow, Rook or Magpie nests used. Clutches of 2-6, usually 3-4 eggs end May – early June. Females incubate mostly, but males change them for short time (three brood patches develop) and sometimes feed her. Incubating begins from first egg and continues 28 days. At first time only male bring food, but later both parents. Juveniles hatch in end June – mid-July and fledge in end of July – late August. Autumn migration begins in August, intensive migration in flocks observed at Western Kazakhstan in first decade of September. Latest birds registered in mid-September. On Chokpak Pass singles recorded 10 and 30 September 2002-2003. Very rare singles linger until early October.

112. **Merlin** *Falco columbarius* Linnaeus, 1758

aesalon *– general colour darker, sizes smaller. At male head, upper back and scapulars grey-bluish-grey, somewhat darker than upper tail coverts. On head wide black strips and rusty shade absent, forehead a little lighter than crown. Picture on under parts from large dark strips on general whitish-brownish, less often rusty background. Dark strips on rectrices well developed. At female upper parts dark-brown with narrow ochre borders on feathers. Crown colour the same as back. Cross picture on upper parts developed poorly. Dark picture on under parts well developed. Male wing length 192-210 (199), female 214-228 (220) mm.* Occurs in Kazakhstan on migration and in winter. From birds ringed on Chokpak Pass two returns (from Tyumen'zevskiy district on Altai territory and Enisseyskiy district on Krasnoyarskiy territory) are received. In winter observed near Semipalatinsk 19 January 1958 (Panchenko, 1968), but subspecies status is not established.

pallidus *– the most light and rather large race. At male upper parts pale-grey with ochre borders. Head clay-reddish with narrow dark streaks. Under parts whitish or pale-ochre with picture from very narrow streaks. Rectrices light grey with very poorly developed cross dark picture, which sometimes absent. At female upper parts pale sand or clay-reddish with wide ochre cross strips. Under parts light with picture from pale-brown narrow streaks. Male wing length 206-214 (210), female 208-233 (223) mm.* Breeds in steppe areas from Ural valley up to foothills of Altai, to the south up to Urkach in Mugodzhary ridge (Varshavskiy, 1965). In Kurgaldzino Reserve last recorded 8 November 1975. On migration occurs up to southern borders of the Republic. Possibly that winter observations on Syrdarya, in Chimkent and Ile valley concern to this subspecies.

lymani *– at male upper parts pale-grey with clay-yellowish borders on scapulars and upper wing coverts. Head with yellowish shade and narrow streaks. Under parts rusty, with narrow and not sharp streaks. At female upper parts clay-brown, with developed cross picture. Male wing length 226-242 (231), female 241-252 (250) mm.* Breeds in Tien Shan (Kovshar, Rodionov, 1983), including Chulkudysu valley (Korelov, 1962) and Talasskiy Alatau ridge (Kolbintsev, 1999), in Dzhungarskiy Alatau and Saur ridges (Scherbakov, 1999a) too. On Southwest Altai the authentic nesting is not known (*per* N.N.Berezovikov). But in Central Altai close to Berel' village a brood recorded 31 July 2004 (Starikov, 2005b). Resident, seasonal movements reduced apparently to vertical migration only (Dementiev, 1951). In winter constantly occurs in foothills of Tien Shan, though subspecies status of these birds really not known.

Rare breeding migrant. Inhabits forest-steppe, steppe rivers and lakes with bush vegetation or groves, mountain mixed and coniferous forest with open plots, both on plains and in mountings up to 2500-3000 m in Tien Shan. Appears in March on southern, or in end April on northern areas. Migrates singly, and latest birds observed at Chokpak Pass in early May, and in Kyzylkum desert shot 26 May.

Breeds in separate pairs, not less than 750 m, usually several kilometres apart. Nest is built on ground under bush or grass from dry twigs lined with grass, or in old Crow nests in bushes, trees or dry reeds are used (*F.c.pallidus*), at 3-6 m above ground. In mountains birds live in old Crow or Magpie nests in trees or bushes (*F.c.lymani*) mostly, at 10-15 m above ground often. Clutches of 2-6, usually 4-5 eggs in early May – end June. Both parents incubate from first egg (mostly female, male feed her) for near a month. Juveniles hatched in end June – July. Both parents feed them and they fledge at roughly 30 days old, in mid-July – August. Autumn migration begins from August, and continues up to end October. At Chokpak Pass appears in September, most birds were registered in October, up to end of this month.

113. **Hobby** *Falco subbuteo* Linnaeus, 1758

subbuteo – breeds and also occurs on migration everywhere, where trees and shrubs vegetation alternate with open places.

Common, in places abundant breeding migrant. Inhabits riparian woods and groves in steppe and desert, forest-belts, open plots with singles trees, mountain deciduous and coniferous woods near open areas, both on plains and in mountings up to 2500-2700 m in Tien Shan. Appears in mid - end April, on Markakol' lake in early May. Migrates singly or in pairs, at Chokpak Pass migration finishes in mid-May, but in northern areas in end May. Nests in separate pairs at 300-500 m, usually 1-2 km apart. For breeding old nest of Crow or Magpie is used without repairing, but sometimes they used inhabited nest and hosts drive out. At once a pair lay eggs on leaves at ground without any lining (Bragin, 2002b). Clutches of 2-6, usually 3-4 eggs in mid-June – July. Both parents (male has brood patches) incubate from first egg for about 28 days, but female mostly. Juveniles hatch in July – early August, both parents feed them. They fledge in August – early September. But in northern Kazakhstan, females lay in May – early June, and chicks fledge in mid-July – early August. More late breeding in southern Kazakhstan explained by adaptation to rear chicks on migrating birds (Sparrows, Swallows) mostly (Pfander, 1992). At Chokpak Pass last brood recorded 7 October 2000. Autumn migration begins in August, and latest birds leave northern Kazakhstan up to middle of September. On Markakol' lake singles linger up to 26 October. But in southern areas main migration is going in September – early October, and latest birds observed until 25 October. Migrates singly or in loose groups of 3-5 birds (broods?).

114. **Altai Falcon** *Falco altaicus* (Menzbier, 1891)

Breeds in highlands of Altai, Tarbagatay and probably Tien Shan. Two colour morphs (Korelov, 1960): very dark (mostly females) and very light (mostly males). Migration areas and wintering places are not investigated. As it hybridise with Saker Falcon P.V. Pfander (1994) considers, that the long absorbing crossing has resulted now in disappearance of a genotype *F. altaicus* in the pure state. However such point of view is not indisputable.

Very rare resident. As before it was considered as subspecies of Saker Falcon, all data on its biology was joined (Korelov, 1962), and no recent information existed.

115. **Saker Falcon** *Falco cherrug* Gray, 1834

cherrug – *upper parts brown with ochre-reddish feather borders. Upper tail coverts brown. Head top lighter than back, greyish-ochre with dark streaks. "Moustaches" hardly appreciable. Rectrices brown with light transverse spots and whitish terminal borders. Under parts light with ochre shade, in longitudinal or drop-like dark streaking. Flanks, leg-feathers and under tail covers without cross picture.* Breeds in forest steppe zone from Ural valley up to Altai, in places lives to south of northern deserts.

saceroides – *upper parts brownish in ochre-reddish oppose-situated spots, forming cross striping. Upper tail coverts light bluish-grey. Head top lighter than back, pale-reddish with dark streaks. Under parts whitish with ochre shade and rare streaks. Flanks and leg-feathers have rudimentary stripping, but precise cross picture not present.* Probably, breeds in Altai, at winter occurs in south-eastern Kazakhstan.

milvipes – *upper parts brownish with correct light cross strips. Head lighter than back. On flanks and leg-feathers cross picture from dark spots and strips.* Occurs in winter in spurs and wide valleys of Tien Shan. Probably birds of this race recorded on Markakol' lake (Berezovikov, 1989a).

coatsi – *general colour brighter than at previous races. Crown with brick-reddish shade. Upper parts dark-brownish with greyish shade, especially intensive on upper tail coverts and on rump, and with reddish-red feather borders. On back and wings light cross picture presents.* Breeds in south

Kazakhstan, at Darbaza station (Mitropol'skiy, Fotteler, Tretyakov, 1987), in Karatau ridge and in foothills of Western Tien Shan.

aralocaspius *– general colour of upper parts pale, brownish, on back light cross picture presents. Upper tail coverts with bluish-grey shade, which more expressed at males. On leg-feathers longitudinal picture from dark strips exists.* Breeds on Mangyshlak.

Before was a common, but now out of illegal capture for Arabs during last 10 years a very rare breeding migrant. Inhabits steppe and desert with fragmentary trees or groves, poles of electricity transmission, geodesic towers, also chinks, river precipices, rocky outcrops, and rocky gorges in mountains, both in low and high, where rodents and birds consisting their main food are plenty nearby. At breeding territory, appears in February – April. Breeds in separate pairs at 300-400 m, usually 1-10 km and more apart, in old nests of other raptors and crows mostly (Long-legged Buzzard, Black Kite, Imperial Eagle, for example), situated in trees, on rocks, poles and towers, but sometimes, in rock shelf under overhang stone on ground. One nest used some years, or change nest every year, if no deficit in suitable breeding places. Clutches of 2-6, usually 3-4 eggs in end March – May. Only female incubates for 30 days, male feed her and brood, when chicks are small. Juveniles hatch in early May – early June. Both parents feed juveniles, which fledge at 45 days old, in end May – July. Autumn migration begins in end August – September. At Chokpak Pass two waves were registered, from 1 until 20 September and from 6 until 30 October. In small numbers it winters in foothills of Tien Shan, on Zaysan depression, in Ile valley, near Syrdarya and in Betpak-Dala. On Chardara reservoir three birds recorded 18-21 December 2003 (Erokhov, Belyalov, 2004).

Note. The offered circuits of inner-species structure of *F.cherrug* (in particular, Vaurie, 1965; Stepanyan, 1990) in many respects are disputable. It is caused by a number of the reasons. First, small number of collection specimens obtained in the nesting period from various areas, on which it is impossible to make an objective picture of geographical variability. Secondly, significant amplitude of individual variability displayed on a background of age and sexual dimorphism. Thirdly, artificial delivery of Saker Falcons from most ancient times in the Arabian countries, where the hunt with them on Houbara is popular. Departed at learning or released after end of hunting season, they could remain in area of release or could fly to part area alien of this subspecies and hybridise with living there birds, bringing in such populations alien to him genes.

116. **Gyr Falcon** *Falco rusticolus* Linnaeus, 1758

intermedius – occurs in winter 1933 near Kokchetav, in November 1976 at Ust-Kamenogorsk area and in Almaty (Pfeffer, 1991b). In 19 September 1986 observed in Irtysh river valley at Pavlodarskoye village (Solomatin, 1999b). In April two birds seen in area Tengiz lake (Andrusenko, 1984), but this indication is not supported with the proof. One bird was stayed at winter in Almaty (Pfeffer, 1991b).

Very rare winter visitor. Occurs in river valleys, mountain foothills and towns; observed in November and December. One bird recorded close to Almaty 14 March 2000 (Sklyarenko, 2002b).

117. **Peregrine Falcon** *Falco peregrinus* Tunstall, 1771

peregrinus *– at male head and upper back dark-grey, frequently head blackish. Other part of back somewhat lighter. Forehead slightly lighter than crown. Vertical under-eyed dark strips rather narrow. On cheeks and behind eyes black colour considerably developed. Under parts whitish, with very weak yellowish or pinkish shade passing on sides in bluish-grey. Picture on under parts consists from medium-sized on breast and larger on belly spots, which drop-shaped or round-shaped form transformed sometimes on belly into cross picture. On craw and upper breast figure to some extent reduced. Cross strips on flanks infrequent, wide and dark, blackish. Female somewhat darker than male. Upper parts more blackish, on under parts rusty shade more developed. Picture on under parts larger and rough, almost always engages also upper breast. Male wing length 289-328 (304), female 348-368 (354) mm.* Breeds in Southern Altai at Markakol' lake in 1958, and in Naurzum pine forest in 1936 (but later not breeds here; Korelov, 1962; Bragin, Bragina, 2002), and also on Monrak in 1975 and in Kalbinskiy Altai at Skalistoye village in 1978 (Scherbakov, 1982). One flying juvenile dependent of adults recorded 21 July 2001 on Bukhtarma valley close to Berel village (Berezovikov, Rubinich, 2001). Occasionally breeds at Zailiyskiy Alatau where a brood seen 5 July 2001 at Gorel'nik (Ashbi, Annenkova, 2002b). Distribution of this form on migration not investigated.

calidus *– somewhat lighter than peregrinus. At male head and upper back ashy-grey, only some darker than other back and scapulars having bluish shade. Forehead whitish, some lighter than*

***peregrinus**. Vertical under-eyed strips narrower than **peregrinus**. On cheeks and behind of eyes black colour distributed much less, white and greyish-white colour here dominates. Under parts white with very weak yellowish-pink shade, which presents not always. Flanks deprived of bluish-grey shade or it here very poorly developed. Cross strips on flanks rare, narrow and more light. Female from above more light, greyish, from below white with weak yellowish-pink shade. Picture on under parts less developed than peregrinus, crop and upper breast without spots, but can have dark strips. Male wing length 315-325 (319), female 350-370 (362) mm.* Occurs in Kazakhstan on migration and in winter practically everywhere.

Very rare breeding migrant. Inhabits plain groves and mountain rocky forests near lakes at up to 1500 m on Altai. Appears end February – March, latest birds recorded mid-April – early May. Nest is built in trees, in rock holes or on ground under stone (shallow cap lined with grass). Old crow nests are used also. Breeds in separate pairs, not closer 3-5 km apart. Clutches of 3-4 eggs in April – May. Female incubate from first egg for 28-30 days, male feed her. Juveniles hatch in June – July. Both parent feed them. Autumn migration begins in end August, and most birds were registered in September and October. Some birds winter in Almaty from November to March.

118. **Barbary Falcon** *Falco pelegrinoides* Temminck, 1829

babylonicus – breeds in mountains and at foothills of southern and south-eastern Kazakhstan from Talasskiy Alatau up to Tarbagatay ridge or even of Southern Altai. On one nest recorded last years in Bolshaya Almatinka and Issyk gorges. One nest with feathered juveniles found mid-August 1917 on Karatal valley 50 km lover of Taldy-Kurgan (Shnitnikov, 1949). Probably occupies raisings in Kyzylkum desert, western steep coast of Aral Sea and Ustyurt chinks (Pfeffer, 1991b). On migration and in winter occurs a little more widely, prefers river valleys and human settlements at foothills (Korelov *et al*., 1986). A juvenile male recorded 7 February 2004 on Badam reservoir (Erokhov *et al*., 2005). On Chokpak Station adult male ringed 29 August 2005.

Rare breeding migrant, or resident in Almaty and in more southern areas. Inhabits rocky canyons and foothills of main ridges, up to middle forest belt up to1000-2000 m, and riparian forest in desert. Resident birds stay near nesting place from October. Nest is situated in rock hole, old nest of other raptors (of Golden Eagle in two cases) are used usually. Clutches of 4-5 eggs in March, chicks hatch in April, and fledge at 40 days old. Up to end of August a brood holds together (Pfeffer, 1991).

119. **Laggar Falcon** *Falco jugger* Gray, 1834

Vagrant bird obtained by V.F. Russov 26 April 1878 in open landscape close to Chinaz (Syrdarya valley), on border of Uzbekistan and Kazakhstan. It must be a bird escaped from a man (Korelov, 1962). Next bird, young one, was shot in Karatau (Khantagskoye gorge) 11 August 1909 (Zarudnyy, 1911). As skins absent in collections, this case is doubtful (Korelov, 1962). Status of this species in Kazakhstan is unclear. Accident vagrant.

GRUIFORMES

120. Water Rail *Rallus aquaticus* Linnaeus, 1758

***aquaticus** – general colour darker, more brownish-olive shade. Males wing length 119-126 (122) mm.* Breeds in northern half of Kazakhstan, on the south up to Caspian Sea, lower reaches of Turgay river and Zaysan depression. On migration occurs everywhere. Sometimes winters in Semipalatinsk area, 12-13 February 1958 (Panchenko, 1968).

***korejewi** – general colour lighter, more yellowish-olive shade. Male wing length 118-130 (124) mm.* Breeds in southern half of Kazakhstan, north up to Aral Sea, Syrdarya valley and Alakol' depression. In Almaty single birds recorded 13 October 1999 and 22 October 2004 (Berezovikov, 2004d). Winters in the south and south east of the Republic.

Common breeding migrant, but at southern Kazakhstan resident mostly. Inhabits fresh and salty lakes, pounds and slowly moving rivers with reed-beds and reed mace thickets. Arrives in mid-March or in early April, on northern areas somewhat later, in end April or early May. Breeds in pairs, not close one to another. Nest is built on base of reed bunch or other vegetation, between willow thicket from old reed, reed mace and other leaves in water up to one metre depth. The base of nest at 10-15 cm above water, but in some cases touched water. Clutches of 3-8 eggs in May – early June. Double brood, re-nesting after loss of first clutches isn't rare. Both parents begin incubate, when a clutches is not full, during 19-21 days. Juveniles hatch in June – July. Autumn migration begins in September, and northern areas they leave in mid-October, but in southern areas latest observed in end October – early November.

121. **Spotted Crake** *Porzana porzana* (Linnaeus, 1766)

Breeds in northern half of Kazakhstan, south up to the Kamysh-Samarskiye lakes and Karaganda, on east up to Semipalatinsk, Ayaguz and probably Markakol' lake (Berezovikov, 1989a). On migration occurs everywhere.

Common, in places rare breeding migrant. Inhabits marshes and wet meadows in river valleys, near fresh lakes with shrubs, reed-beds, reed mace and rush thickets. Arrives at southern areas in end March or early April, latest migrants in end May, but at northern area in end April – early May only. Breeds in separate pairs. Nest is built among grass or on hummock from dry grass. Clutches of 6-12 eggs in end April – May. Both parents incubate for 18-21 days and care for chicks, which hatch in June. Probably double brooded. Autumn migration begins in mid-August – September and finishes in end October – early November.

122. **Little Crake** *Porzana parva* (Scopoli, 1769)

Breeds from lower reaches of Ilek river the east up to Semipalatinsk and Alakol' depression and south up to Chimkent and Almaty area. Nuptial voices of several males heard in end April 2001 at foothills of Azutau ridge (Berezovikov, Rubinich, 2001). On migration occurs practically everywhere.

Common breeding migrant. Inhabits reed-beds, reed mace and willow thickets of fresh or little salty lakes, pounds and rivers with slow current. Appears in end March – April in southern, and in April – early May in northern areas. Migration finishes in end May. Breeds in separate pairs. Nest is built in reed-bed or in floating reed stems from strips of old reed leaves, its base contacts with water surface often. Clutches of 6-9 eggs in May – late June. Brood patch developed in female only. As broods recorded in end September, two broods probably. Autumn migration begins in end August. From northern areas, disappears in end September, in southern areas occurs up to mid-November.

123. **Baillon's Crake** *Porzana pusilla* (Pallas, 1776)

pusilla – breeds on Syrdarya and its inflows, in lower reaches of Talas and Chu rivers, in Ile valley, Balkhash-Alakol' depression, on Zaysan lake, in Semipalatinsk area and in Bel'agach steppe, on Kurgaldzhin lakes, Ul'genkul' and Akkanskoye lakes, and also on Ural river between Uralsk and Orsk, in lower reaches of Ilek, Khobda and Chingirlau rivers, but the fact data absent (Dolgushin, 1960). In July 1901 obtained on Markakol' lake (Yablonskiy, 1907). On migration occurs everywhere, in mass numbers flies through foothills of Western Tien Shan, where in September under wires some tens perished Baillon's Crake have been collected (Kovshar, 1966).

Common, in places rare breeding migrant. Inhabits mostly fresh or little salty lakes, pounds and rivers with slow current, with reed, reed mace and willow bush thickets. Appears in April – early May, latest migrants end May. Breeds in separate pairs. Nest is built in floating heaps of old reed stems, not far from open water, on tussocks on water or near shore from dry leaves of different grass. Its base contacts with water or at 10-12 cm above water. Clutches of 6-9 eggs in May. Incubation lasts 20-21 days. Two broods probably. Autumn migration begins from mid-August, from most areas disappears up to end September, but on south of Kazakhstan observed in mid-October.

124. **Corn Crake** *Crex crex* (Linnaeus, 1758)

Breeds widely in northern Kazakhstan, south up to lower reaches of Bolshoy and Malyy Uzen' rivers and Karmanovo village on Uralr iver, to Berchogura village in Mugodzhary, Turgay and Akmola. From 1960-th stopped to breed in Naurzum Reserve (Bragin, Bragina, 2002). Lives also in Kazakhishe upland (between Bektauata and Kyzylray and in Kurayly valley flowing down from Chingiztau), on Southwest Altai, in Kalbinskiy Altai, Saur and Tarbagatay ridges, Dzhungarskiy Alatau and in Tien Shan, to the west including Zailiyskiy Alatau (Almaty and Big Almaty Lake). On migration occurs everywhere.

Common, in places rare breeding migrant. Inhabits high grass meadows, especially with bush thickets, both on plains and in mountains up to 1500-1600 m on Altai and 2600-2700 m in Tien Shan, and rarely on lucerne and cereal fields. Arrives in mid- or end April on south, where latest recorded in mid-June, but on other territory in May or early June. Breeds in separate pairs, fairly far one of other. Nest is built on ground among grass or low shrubs, in shallow hole lined with dry grass stems. Clutches of 6-12, usually 9-10 eggs in end May – early June, juveniles hatch in July and begin to independent life very early, may be one-two weeks old. Nuptial calls of males were heard until mid-July, and two broods very possibly. Adults moult very intensive, all flight feathers lost simultaneously and birds can't fly. Autumn migration begins from mid-August, mountains they leave up to mid-September, but on plains latest birds observed in mid- or end November.

125. **Moorhen** *Gallinula chloropus* (Linnaeus, 1758)

chloropus – breeds widely in plain Kazakhstan from southern border to north up to lower reaches of Ilek river, Naurzum, Kurgaldzhino, Shortandy area (Berezovikov, Kovalenko, 2001), Semipalatinsk and Zaysan lake. On migration occurs everywhere. The winter record (31 December 1993) in Aksu-Dzhabagly (Kolbinzev, 1997) is known.

Numerous, in places common breeding migrant. Inhabits fresh and salty lakes, pounds and rivers with low current, which have reed-beds, reed mace or bush thickets and plots of open water nearby. Arrives in pairs mostly, in end April or early May. Last migrants recorded early June. Breeds in separate pairs, no less than 70-100 m apart. Nest is built on water in reed-bed or bush from dry stems and leaves of different plants lined with green leaves, at 10-15 cm above water. Clutches of 6-12 eggs in May – end June. Incubation lasts 19-22 days. Juveniles hatch in June – early August, and very early begin to independent life. Two broods, repeated breeding after loss of nest is common. Autumn migration begins end August. From northern areas disappears in early October, in southern ones latest birds observed in end October – November.

126. **Purple Swamp-hen** *Porphyrio porphyrio* (Linnaeus, 1758)

seistanica – from 1990 breeds in Ural delta on Peshnoy island (Berezovikov, Gistsov, 1993). Repeatedly occurs on Mangyshlak in winter (Kovshar, 1991a) on not freezing store of wastewater in Aktau.

Very rare breeding migrant. Inhabits reed-beds and reed mace thickets with plots of open water. On Peshnoy island two broods of 5 and 4 downy chicks observed 19 and 26 June 1992. No other data on biology in Kazakhstan is known.

127. **Common Coot** *Fulica atra* Linnaeus, 1758

atra – breeds everywhere in plain Kazakhstan, except for waterless districts, and on Markakol' lake (Berezovikov, 1989a). On migration occurs everywhere. Wintering on south of the Republic, in January 1970 near 300 Coots counted in Syrdaya delta and 100 on Chardra reservoir (Auezov, Bikbulatov, 1972). On Sorbulak lake near Almaty two birds recorded 15 December 2002 (Belyalov, Karpov, 2002). But most winters in India.

Numerous, in places very common breeding migrant. Inhabits fresh and salty lakes, pounds, reservoirs and rivers with slow current, reed-beds and reed mace thickets. Appears in flocks in mid-March – April in southern, and in April – early May in northern areas. Migration finishes in mid – end May. Pairs formed on breeding place. Breeds in pairs, not far one from other in suitable places. Nest is built by both parents in reed-beds from leaves of reed and other grass, and well sheltered by surrounding vegetation. Clutches of 5-12, usually 7-9 eggs, May – early June. In incubation and care for chicks both parents took part. Juveniles hatch in June – July. Some nests are loss from Marsh Harrier or out of flooding during strong wind, and many pairs are forced to re-nest. After moulting, adults and juveniles joined in big flocks at places with plenty of food. Autumn migration begins in September, and mass migration is going in mid-September – mid-October. With water freezing last birds disappear. But on unfreezing reservoirs some birds stay up to early – mid-November.

128. **Common Crane** *Grus grus* (Linnaeus, 1758)

grus *– general colour darker, black colour at tops of tertials occupies more extensive space. Size bigger. Male wing length 600-660 (641), female 570-640 (594) mm.* Probably this subspecies lives in Western Kazakhstan, where nests and broods recorded on floods of Chizhinsko-Balyktinskiye system and in area adjacent to Kushum river (Shevchenko *et al*., 1993).

lilfordi *– general colour lighter, black colour at tops of tertials occupies less extensive space. Size lesser. Male wing length 580-640 (600), female 560-610 (582) mm.* Episodically breeds in Northern Kazakhstan, on lakes in Naurzum steppe (Bragin, Bragina, 2002), in Tengiz-Kurgaldzhino depression (Krivizkiy *et al*., 1985; Andrusenko, 1989), on Southern Altai (Berezovikov, 1989a, 1989b), separate pairs live in Kalbinskiy Altai, on Zaysan lake, in Alakol' depression, in Ile valley and in lower reaches of Chu river (Kovshar, 1989, 1996 b). Everywhere occurs on migration.

Rare breeding migrant, more common during spring and autumn. Inhabits reed-beds of lakes, wet meadows, hummock marshes among birch groves both on plains and in mountains up to 2000 m in Altai. Appears in end February or early March – April. Migrates both by day and by night in flocks of 30-40, up to one hundred birds, and in groups of 3-10 rare. Latest migrants observed end May. Breeds in separate pairs, at some kilometres apart. Nest is built on small dry place among water, or on shallow water among

reed-bed near the dry shore from reed and grass stems, and lined with grass. Clutches of 2-3 eggs in April – May. Female incubates mostly, for a month roughly, and male guards nearby. Chicks hatch in May – June and begin to fly in mid July – August. In end May – June non-breeding Cranes concentrate in thousands for wing moult on vast shallow salt lakes (Selety-Teniz, for example), where they rest on island or in shallow water, and feed in nearby steppe. Autumn migration begins in August, most birds leave in mid-September – early October, latest recorded in early – end November.

129. **Siberian Crane** *Grus leucogeranus* Pallas, 1773

On migration occasionally observed in Western, Northern, Central, Eastern (Auezov, Grachev, 1977), and Southern Kazakhstan. In 6 September 1986 two birds observed on Markakol' lake area (Scherbakov, 1999b). At Chokpak Pass where Cranes counted many years first bird observed at 2 May 2004 and two more at 18 April 2005 which flied in eastern direction with flock of 120 Demoiselle Cranes at altitude 200 m.

Very rare passage migrant. Occurs on fresh and salty lakes. Singles and small groups up to 5 birds were observed in spring in March – May, at autumn in second half of August – November.

130. **White-naped Crane** *Grus vipio* Pallas, 1811

One crane was shot on Syrdarya river near Kzyl-Orda in end April 1909 from a flock of 5 birds, and other one was shot on Kamyshlybash lake 23 October 1913 (Dolgushin, 1960). No records existed in recent years. Accident vagrant.

131. **Hooded Crane** *Grus monacha* Temminck, 1835

Observed in Zaysan depression in mouth of Kurchum by N.I. Yablonskiy (1904) and one bird shot 7 June 1855 near Atyrau (Dolgushin, 1960). No records existed in recent years. Accident vagrant.

132. **Demoiselle Crane** *Anthropoides virgo* (Linnaeus, 1758)

Occupies steppes and semi-deserts, north to Uralsk (Debelo, 1995), Utva-Ilek area (Berezovikov *et al*., 1992), Kustanay steppes up to border with Russia (Bragin, 2002a), northern Kazakhstan (Drobovzev *et al*., 1998), Kokchetav steppe close to Borovoye (Karpov *et al*., 2002b), Pavlodarskoye Trans-Irtysh'e (Kovshar, Khrokov, 1993) and Bukhtarma valley close to Berel village (Belyalov, 2002c). To south breeds in Syugaty valley, southern coast of Kapchagay reservoir, Kopa station, lower current of Chu (Kovshar, 1987). On migration occurs everywhere, but most numerous along northern foothills of Tien Shan and Dzhungarskiy Alatau. Very unusual winter record (18 December 1991) in Aksu-Dzhabagly (Kolbinzev, 1997) is known.

Common, but in places very rare breeding migrant. Inhabits steppe and half-desert plains, foothills and other plain and hilly places with low or medium sized grassy vegetation nearby of water often. Sometimes it nests on cereal fields also. Appears in March or early April. Mass migration is going by foothills of Western Tien Shan through Chokpak Pass, where flocks of up to several hundred or thousand birds fly both by day and by night, up to 15 or more thousand birds yearly per season (in 2002 more than 33000). Most of them were observed in first two decades of April, and latest seen in mid-May. Though in other areas migration lasts up to end May. Breeds in separate pairs not close one to other. Nest is built on bare ground or with scarse vegetation, some small stones or grass stems are present only. Clutches of 1-3, usually 2 eggs in end April – May. Female incubates from first egg for one month roughly, and male guards the territory nearby or up to 1-1.5 km of nest. Chicks hatch in end May – June, both parents care them. Young birds begin to fly in end July or in August. Autumn migration begins from end August, when broods join in flocks, and not so impressive, as in spring. Some flocks are fly through mountains, and no more than 80-100 specimens were counted in each one. On Kyzylkol' lake 7-8 September 2005 unusual concentration of near 12 thousand observed, which stay here for rest. At Chokpak Pass, latest recorded in end October.

133. **Little Bustard** *Tetrax tetrax* (Linnaeus, 1758)

Breeds on plains both in steppe and half-desert northern Kazakhstan mostly, south up to Kamysh-Samarskiye lakes, mouths of Ural and Emba rivers, areas of Baykonur, Karsakpay, Ayaguz, Zaysan lake, and also on foothills of Southern Altai, Tarbagatay, Dzhungarskiy Alatau and Western Tien Shan (Karatau ridge). On migration occurs on Mangyshlak and in Southern Kazakhstan. Vagrants observed on Markakol' lake 10 May 1979 and 17-18 May 1983 (Berezovikov, 1989a).

Rare breeding migrant. Inhabits virgin feather-grass steppe with dense grass and rare shrubs, or meadow like wormwood–feather-grass areas on lake depressions in desert and foothills. Appears in March on southern, and in April on northern areas in small groups or flocks. A male display on mating-place, especially intense in morning and evening, and females are going to him. Nest is built nearby on ground in very shallow hole, lined with sparse dry grass, and concealed well by surrounding tall grass usually. Clutches of 3-11, usually 3-5 eggs in May – June. Female incubates alone for 28-30 days. Participation of male in care for juveniles, which hatch in end May – June, is not clear. Some authors observed broods with both parents, but others with female only. Sometimes clutches are destroyed by wolf, fox, corsac, badger and steppe polecat. Repeated breeding is don't known. Males display up to early – mid-July. In second half of August broods join in flocks, sometimes up to several hundreds birds, and autumn migration begins. Many birds migrate in September – October. Northern areas leave in October, but in southern ones in first decade of November. On Chokpak Pass three flocks of 90, 49 and 11 birds observed 28 October 2001.

134. **Houbara Bustard** *Chlamydotis macqueenii* J.E.Gray, 1832

Breeds in southern half of Kazakhstan, north up to Taysogan sands, lower reaches of Irgiz river, area adjacent to north of Balkhash lake and Zaysan depression. On migration occurs at the same areas. Vagrant bird recorded 8 October 1978 in Tengiz lake area (Andrusenko, Khrokov, 1981; Koshkin, 2003).

Rare, in places common breeding migrant. Inhabits clay, crushed stone, clay-saline soil deserts and half-deserts, fastened mound sands, and deserted foothills. Arrives at night in March – April. Male displays on his mating-place and attracts one or several females. Nest is built nearby on ground, in very shallow hole, rounded by small shaft of vegetation rags. Female builds nest, incubates and cares for juveniles alone. Clutches of 1-3 eggs in April or early May, juveniles hatch in mid-May – June, and begin to fly in July. Autumn migration begins by night in August, most birds leave in September – October, but some ones linger until November.

135. **Great Bustard** *Otis tarda* Linnaeus, 1758

tarda – episidically breeds in steppe and half-desert of northern Kazakhstan, south up to Tel'nov settle (Volga-Ural area), Aktau Mt. in Utva-Ilek area (Berezovikov *et al*., 1992), lower reaches of Turgay river (Auezov, 1986), Kurgaldzhin lakes (Krivizkiy *et al*., 1985; Khrokov, 1986). In summer occasionally observed in Mayskiy district and near Shiganak lake of Pavlodar area (Solomatin, 1999b), on Ustyurt (4 June 2001; Grachev, 2002b), on Chemolgan valley and in Kolshengel area (Belyalov, 2002d; Levin, 2002). Nests in Zaysan depression, in foothills of Southern Altai and Tarbagatay, in Chiliktinskaya valley also (Berezovikov, 1986a). Possible breeding in southern foothills of Tarbagatay, where in places some pairs occurs in summer almost annually (*per* S.Shmygalev). On migration occurs to the south. Wintering in area adjacent to Northern Caspian Sea and to the south from Chimkent.

Rare breeding migrant. Inhabits plain and hilly steppe both on plain and in mountings up to 1500 m in Tarbagatay and 1800 m in Chiliktinskaya valley, with prevailed feather-grass or wormwood, wheat grass meadow with scarce reed on shore of dry lakes, and fall wheat fields very rare. Appears in pairs or small flocks in southern areas end February – March, on northern ones in April – early May. At Chokpak Pass latest migrants observed mid-May. Breeds in separate pairs or in small groups, when a male has 2-3 females. Female builds nest on ground in very shallow hole lined by sparse dry grass. Clutches of 1-3 eggs in end April – May. Only female incubates for 25-30 days and care for juveniles, which hatch in May – June. In end July – August juveniles begin to fly and broods join in flocks. Autumn migration begins in second half of August, and is going in September and October. Some birds linger until mid-November, and when feeding conditions are favourable, winters in southern Kazakhstan.

CHARADRIIFORMES

136. **Oystercatcher** *Haematopus ostralegus* Linnaeus, 1758

longipes *– black colour of head, neck, upper back with brownish shade. Bill shorter than* ***buturlini****. Male wing length 243-265 (253), female 244-269 (256) mm; bill length of males 70.6-80.0 (75.8), of females 80.0-89.5 (84.1) mm.* Breeds in forest-steppe and steppe zones of plains. On migration occurs everywhere. Vagrants observed on Markakol' lake 26 August 1978, 9 June 1980 and 17-22 May 1981 (Berezovikov, 1989a).

buturlini *– black colour of head, neck, upper back with brownish shade, a little more light than* ***longipes****. Bill longer than* ***longipes****. Male wing length 241-257 (251), females 252-261 (255) mm; bill length of males 79.8-87.6 (75.9), of females 92.0-103.0 (97.1) mm.* Breeds in desert zone of plain Kazakhstan, where occurs on migration too.

Rare breeding migrant. Inhabits sandy or pebble shores and islands on rivers, saline soil shore of lakes with rare vegetation, or stone islands. Arrives in early March – end April (or early May in northern areas) singly, in pairs or small groups of 3-5 birds. Intensive flight was observed near Aral'sk town, were flocks of 50-70 birds were not rare. Migration finishes in mid – end May. Breeds in separate pairs not close one to other, at several hundred meters or 1-2 km apart. Nest is built in shallow hole on sand, saline soil, pebble or crushed stone shore lined with several dry grass stems rare. Clutches of 2-3, rare 4 eggs in end April – early June. Both parents incubate for 27 days roughly and care for juveniles, which hatch in June and begin to fly in end June – July. Repeated nesting after loss of first clutches because of flooding observed too. Autumn migration begins in August in flocks of up to 50-70 individual, most birds disappear in September, but latest linger up to early – mid-October.

137. **Ibisbill** *Ibidorhyncha struthersii* Vigors, 1832

Occupies Central and Northern Tien Shan, within the limits of Kazakhstan, on valleys of Bolshaya and Malaya Almatinka, Chilik and its inflow Zhenishke, Issyk, Karkara, Bayankol, Chulkudysu rivers (Kovshar, 1980, 1991, 1991c; Gubin, 2002c, Dzhanyspaev, 2002a). Breeds also in Dzhungarskiy Alatau and its foothills, where in 1964 two pairs bred on Tentek river and on Orta-Tentek river in 2001 (Grachev, 1965; Berezovikov, Rubinich, 2001). Vagrants recorded in steppe foothills of north-western Altai near Pospelikha station 23 August 1973, 5 birds (brood?; Berezovikov, 1980).

Rare resident. Inhabits vast enough pebbly shores and islands of mountain rivers, at 880-3200 m, and rare on 500 m only. Breeds in separate pairs, fairly far one of other. Pairs form in April. Nest is built from small pebbles, which is added during incubation, and 4860 stones, weighting 636 grams, were counted in one nest (Kovshar, 1996). Clutches of 4, rare 2-3 eggs in late April – May. Both parents incubate and care for chicks, which hatch in June and begin to fly in July – August. Post-fledging dispersal is not well known. A flock of 12 birds (two broods) recorded on Big Almaty Lake at August (Dolgushin, 1960). In severe winters fly to lower altitude, where feeding conditions much better.

138. **Black-winged Stilt** *Himantopus himantopus* (Linnaeus, 1758)

himantopus – breeds in southern half of plain Kazakhstan to north up to Kamysh-Samarskiye lakes (Shevchenko *et al*., 1993), Utva-Ilek area (Khrokov *et al*., 1993), Naurzum, Petropavlovsk and Zaysan depression. In 1989 occurs on breeding in by places at area adjacent to Irtysh river in Pavlodar oblast (Kovshar, Khrokov, 1993; Khrokov, Kovshar, 1993). On migration occurs practically everywhere.

Common, in places numerous breeding migrant. Inhabits fresh and salty lakes with shallow coastal water and muddy, sandy or stony shores. Arrives in mid-March in southern areas, and in early – mid-April or even in May in northern ones, in small flocks of 5-15 birds. Breeds in colonies of one-three dozen pairs mostly, and in separate pairs or small groups too, with terns, gulls and other waders often. Nest is built on islands, small hummocks in shallow water, or on wet shore near water. It is simple hole on ground with some dry grass, or rather big structure up to 25 cm of diameter from dry grass stems lined with soft leaves in water. When water level heightens, birds raise the height of nest to safe eggs of flooding. Clutches of 4, rare of 3 eggs (sometimes two females lay in one nest) appears from end April until mid-June, not because of different latitude only, but out of re-breeding after loss of first clutches also. Both parents incubate and care for chicks, which hatch in May – July. When juveniles begin to fly (early June – end August), birds disperse some times, and then leave in flocks. Passage migration not observed because birds fly very high off the ground. The northern areas they leave in end August, the southern ones in early or mid September.

139. **Avocet** *Recurvirostra avosetta* Linnaeus, 1758

Episodically breeds on salty lakes to north up to Kamysh-Samarskiye lakes, Chelkar lake, lower reaches of Ilek river, Mokroye and Teniz lakes in Kustanay oblast, Petropavlovsk, Pavlodarskoye Trans-Irtysh'e and Zaysan depression (Dolgushin, 1962a). On migration occurs in plains everywhere.

Common, in places rare breeding migrant. Inhabits salty or rare fresh lakes with salt marsh, sandy or crushed stone shores and islands. Arrives in end March – early April, but in northern areas in end April – early May in flocks of two-three dozen birds. Breeds in colonies (mainly on islands) up to 70 pairs, with

stilts, terns, gulls and other waders often. Nest is built on bare ground in shallow hole lined with several dry grass pieces, or without lining usually. Clutches of 2-5 eggs in end April – early June. Both parents incubate for 25-26 days, and care for juveniles, which hatch in May – June and become flying in end June – early August. Nests loss out of flooding in windy feather often, and repeated breeding is not rare. On Caspian and Aral Sea, as on big salty lakes, in August concentrates in big flocks of up to 200-500 birds. Autumn migration begins early, in August mostly, and latest birds recorded end September – early November.

140. **Stone Curlew** *Burhinus oedicnemus* (Linnaeus, 1758)

harterti – breeds and occurs on migration in southern half of Kazakhstan, north up to Kamysh-Samarskiye lakes, Ilek mouth (Davygora *et al*., 1992), lower reaches of Turgay river, area adjacent to north of Balkhash lake and Zaysan depression. On Kurgaldzhino 29 May 1979 breeding female laid one egg obtained (Krivizkiy *et al*., 1985). Near Semipalayinsk observed in groups (broods?) 24 July (Dolgushin, 1962a). Vagrant occurs in Naurzum Reserve (Bragin, Bragina, 2002).

Common, in places rare breeding migrant. Inhabits clay deserts, saline soil areas with wormwood, salt grass and sparse saxaul or tamarisk shrubs, but sand and crushed stone deserts rare; with water nearby often. Arrives at night in March or mid-April in small groups. Breeds in separate pairs. Nest not built, eggs lay on bare saline soil or in shallow hole in sand. Female incubates mostly at night, but by day a bird leaves nest for long time and eggs heat by sun only. Male don't take part in this, but stay nearby. Clutches of 2 eggs in end April or early May. Juveniles hatch in end May – early June, and begin to fly in July. Autumn migration begins in end August and finishes until mid – end September (flocks up to one hundred and more individuals recorded), but some birds linger up to mid- or end October.

141. **Cream-coloured Courser** *Cursorius cursor* (Latham, 1787)

bogolubovi – observed by N.A.Severtzov on Kenderlykskoye plateau, to the north of Kara-Bogaz-Gol gulf. At this area one bird observed 24 April 1956 at hollow Bas-Gurly (42°46'N 53°20'E) about 65 km east of Kenderly Bay (Molodovskiy, 2005). Vagrant recorded near Astrakhan, Russia, 12-29 July 1928, 5 birds (Menzbier, 1895; Dementiev *et a*l., 1951; Dolgushin, 1962a). Accident vagrant. Occurs in desert with dense soil and scarce vegetation or with many saline soil parts.

142. **Collared Pratincole** *Glareola pratincola* (Linnaeus, 1766)

pratincola – breeds and also occurs on migration in southern areas of plain Kazakhstan, north up to Emba delta (Neruchev, 1968), lower reaches of Turgay river (in 1971; Auezov *et al*., 1978) and Alakol' depression. Records are known on Khobda river June 1883, at Atyrau and on Mangyshlak (Dolgushin, 1962a). Vagrants observed at Kurgaldzhino Reserve in 18 May 1986, 5 birds (Andrusenko, 2002). Mixed colonies with Black-winged Pratincole exist at Telekol lake (Spangenberg and Feigin 1936).

Common, in places rare breeding migrant. Inhabits liquorice, grass or reed parts near rivers or lakes, saline soil plots and small lake islands on fresh or salty lakes, and wormwood deserts near water very rare. Arrives in April. Breeding in small groups of several pairs or in colonies up to 50 pairs, with other waders or terns often. Clutches of 3, rarely 2 eggs in shallow hole without lining under grass or bush in mid May – June. Both parents incubate and care for chicks. Juveniles begin to fly in mid-July. Autumn migration early, in July – August, latest birds recorded in early September.

143. **Black-winged Pratincole** *Glareola nordmanni* Nordmann, 1842

Breeds in northern half of plain Kazakhstan, south up to Kamysh-Samarskiye lakes and northern shore of Caspian Sea (Berezovikov, Gistsov, 2001), lower reaches of Turgay river and Zaysan depression. Mixed colonies with Collared Pratincole are known on Telikol lake (Spangenberg, Feigin, 1936). On migration occurs everywhere, excluding mountains.

Common breeding migrant. Inhabits clay or saline soil plots with scarce vegetation near water, or small islands and spits on lakes. Appears in April – May in small groups or flocks of up to 30 birds, pairs form during migration. Breeding in small groups or colonies sometimes numbering up to one thousand pairs, with other waders and terns often. Nest is built in shallow hole lined with some grass stems under grass or on open place, sometimes without lining. Clutches of 3-5, usually 4 eggs in May – early June, which in end incubation cover by sand, small salt-marsh pieces and small cockle-shells. Both parents incubate and care for juveniles. Juveniles begin to fly in July. Autumn migration early, they leave breeding area in early – mid-August, latest birds recorded in end August – mid-September.

144. **Little Ringed Plover** *Charadrius dubius* Scopoli, 1786

curonicus – breeds in plain Kazakhstan everywhere, also inhabits mountains reservoirs, including Markakol' lake (Berezovikov, 1989a). Occurs widely on migration too.

Common, in places rare breeding migrant. Inhabits river valleys, fresh and salty lakes, pounds, reservoirs, and small streams, rivers and lakes in mountains up to 1850 m too, prefers sandy and crushed stone or silt shores with scarce vegetation or without. Appears in March at southern areas, or in April – early May at northern ones and in mountains. Migration in small flocks (10-20 birds) is going very swift, at Chokpak Pass latest birds registered 13 May 1969 and finishes until end May at other regions of Kazakhstan. Breeds in separate pairs, not very far one another often. Nest is built on shallow hole lined with small amount of dry grass or small flat stones, not further than 200-300 m of water. Clutches of 3-4 eggs in April or early May, but nests with eggs were found until end June. Incubation lasts 22-26 days. Juveniles hatch from May until end July. Both parents care for them. Probably two broods per a year, repeated breeding after loss of nest is observed too. Autumn migration in small flocks of up to one – two dozen birds begins in August. Adult birds migrate at first, juveniles somewhat later. Mountains and northern areas they leave in early or mid-September, southern ones in end September, though singles linger until end October.

145. **Ringed Plover** *Charadrius hiaticula* Linnaeus, 1758

tundrae – occurs in plain Kazakhstan everywhere on migration, more often observed in western half of the Republic.

Common, in places rare passage migrant. Occurs on shores of fresh and salty lakes, river sand banks, on Caspian Sea visits shore and islands. Arrives in May, and latest birds observed end May. Autumn migration begins mid-August, most birds migrate in end August – mid-September, latest recorded mid-October. Occurs singly or in small groups (in spring) or in flocks of one-two dozen birds (in autumn).

146. **Kentish Plover** *Charadrius alexandrinus* Linnaeus, 1758

alexandrinus – breeds and occurs migration in the most part of plain Kazakhstan, north up to Kamysh-Samarskiye lakes, Naurzum, Selety-Tengiz lake (Dolgushin, 1962a), Zaysan depression (Berezovikov, Levin, 2004b) and Pavlodarskoye Trans-Irtysh'e (Kovshar, Khrokov, 1993). Occasionally 26 August 1980 and 8-9 September 1981 observed on Markakol' lake (Berezovikov, 1989a).

Common, in places rare breeding migrant. Inhabits sandy or muddy shores of salty lakes usually, but rarely saline soil areas near fresh water too; on migration occurs also on pounds and near artesian well in small water. Arrives in pairs or small groups in end March or April. At Chokpak Pass one bird observed 1 May 1970, but in other areas migration finishes up to early June. Breeds in separate pairs, sometimes at 50-70 m each of other, nearby with tern, pratincole, stilt and other birds often. Nest is simple shallow hole in sand or saline soil, after some days the eggs are dipped into sand or vegetation dust on 1/3 or more. Clutches of 3-4 eggs in end April – June. Both parents incubate and care for juveniles, which hatch in May – July. Not full grown juveniles were recorded until 22 August. Probably two broods, but repeated nesting after loss of first clutches not rare too. At some places adults collect for moult in July in flocks of 40-50 birds. Autumn migration begins in August, and flocks of up to 100-150 birds are not rare. From northern areas they leave in first decade of September, but from southern ones in end September – early October.

147. **Lesser Sand Plover** *Charadrius mongolus* Pallas, 1776

pamirensis – three birds (one collected) observed 17 May 1953 close to Aral'sk on sea shore in flock of Kentish Plover (Grachev, 1954), next one caught on Sorbulak lake 1 August 1977 and two more observed two days later (Erokhov *et al*., 1978). Four birds recorded here 13 May 2002 (Annenkova, 2002a), one female 22 June 2003 together with five Little Ringed Plover (Annenkova, Ashbi, 2004), and one male 2 May 2004 (Belyalov, Karpov, 2005).

Accident vagrant. Occurs on salty and fresh lakes with sandy or muddy shores in May and August.

148. **Greater Sand Plover** *Charadrius leschenaultii* Lesson, 1826

crassirostris – breeds and occurs on migration in southern part of plain Kazakhstan, north up to Mangyshlak (Levin, Karyakiin, 2005), Ustyurt, Betpak-Dala, area adjacent to north of Aral Sea (Dolgushin, 1962a) and Alakol' lake (Khrokov *et al*., 1993).

Common breeding migrant. Inhabits saline soil or clay areas with thick surface in plain desert, and crushed stone parts on train of mountains and upland plains, with scarce low vegetation. Arrives in end March or early April in groups of 3-12 birds. Breeding in separate pairs, fairly far one of other. Nest is built in shallow hole, scarcely lined with grass, saline soil scales or small stones, at distance up to 1-2 km of water. Clutches of 3 eggs found in April – mid-June. Long time, when nests with eggs recorded, proposed repeated breeding after loss of first clutches. Both parents incubate and care for juveniles, which hatch in May and begin to fly from early June – end July. After this broods begin to disperse, sometimes two-three broods join together. About autumn migration there is no data. Latest birds caught on Alakol' lake at 11 July 1987 and 29 July 1993. In Uzbekistan this bird recorded not later as 27 June and 5 July (Mitropol'skiy *et al*., 1990).

149. **Caspian Plover** *Charadrius asiaticus* Pallas, 1773

Breeds and occurs on migration in southern half of Kazakhstan, north up to lower reaches of Ilek river, Naurzum, Kurgaldzhino (last birds 3 September 1970, 6 September 1971, 14 September 1969 and extremely late 10 October 1977) and Semipalatinsk (Dolgushin, 1962a), on Sasykkol' lake (at 8 June 1990 a bird with brood putch was caught) and also in Zaysan depression (Scherbakov, 1986). On Mangyshlak juvenile birds recorded near Fort Shevchenko (24 June 1957) and Eralievo (28 June 1957; Molodovskiy, 2005a). In lower Sarysu river several birds ringed 8-9 September 1986.

Common breeding migrant. Inhabits southern steppe, half-desert and desert zones, where prefer lightly saline soil areas with rare wormwood and other vegetation. Appears in pairs or small flocks of one-two dozen birds in mid- or end March. Breeds in separate pairs, not far from water, but sometimes in 10-12 km off. Nest is built in shallow hole, lined with scanty grass, small stones or saline soil scales. Clutches of 3 eggs in early April – May. Both parents incubate (female in the day-time, and male by night; Berezovikov *et al*., 1999) and care for juveniles, which hatch in early May – June. They begin to fly in early June – early August. After breeding, birds join in flocks of up to one-two hundred and begin to disperse. Autumn migration observed from mid- or end August and finishes in mid-September, some birds linger until 10 October very rare.

150. **Oriental Plover** *Charadrius veredus* Gould, 1848

Vagrant was shot by N.A. Zarudnyy 16 September 1910 on Chushkakol lake near Turkestan. The skin was lost (Dolgushin, 1962). Twice recorded near Samarkand and Tashkent (Mitropol'skiy *et al*., 1990).

151. **Dotterel** *Charadrius morinellus* (Linnaeus, 1758)

Breeds on highlands of south-west Altai and in Saur ridge. Three females recorded 21 July 2002 on north-eastern Dzhungarskiy Alatau, 2900 m (Annenkova, Plakhov, 2002). Widespread on migration in plain Kazakhstan, mainly in western half, where it is not uncommon.

Rare breeding migrant. Inhabits alpine crushed stone meadows with scarce vegetation at above 2000 m. On plains appears in mid-April – May in small groups or flocks of up to 50-300 birds, which stop usually on pastures or in steppe with scarce vegetation, and on lake shores rare. Last migrants recorded mid May. Breeding biology in Kazakhstan not well known. Nest is built in shallow hole on clay patch without lining. Clutches of 2-4, usually 3 eggs in end May – early July. Only male incubates and cares chicks, which hatch in end June. Two birds, trying to lead a man off the brood, observed 14 July 1981. Juveniles begin to fly in end July. Females begin autumn migration at first, from end July. In western and northern Kazakhstan, birds of northern population observed in second half of August, and migration finishes in September, though some birds linger until mid October. In southern Kazakhstan at autumn occurs very rare, singly and in small groups registered in end September – early October.

152. **Pacific Golden Plover** *Pluvialis fulva* (Gmelin, 1789)

On migration occurs mainly in eastern half of plain Kazakhstan, west up to Syrdarya mouth and Naurzum lakes.

Rare passage migrant. Occurs on shores of fresh or salty lakes and on nearby pastures also. Arrives in end March or April, latest birds were observed in end May. At autumn appears in mid-July (Ust'-Kamenogorsk, Yany-Kurgan on Syrdarya valley), but usually in August. Main migration is going in September, latest birds observed in mid-October in northern areas, and in end October in southern ones. Migrates singly and in flocks of several dozens birds mostly, but on Zaysan lake flocks of up to one hundred birds observed.

153. **European Golden Plover** *Pluvialis apricaria* (Linnaeus, 1758)

Occurs in plain Kazakhstan everywhere, especially in western half (Caspian Sea and Aral Sea areas), excepting mountain lakes, on seasonal migration.

Rare passage migrant. Occurs on shores of fresh or salty lakes, on marine shores and on islands too. Appears in April, and migration finishes in end May or early June. At autumn arrives in end July or August. Most birds observed in September, and latest ones registered in end September – first decade of October. Migrates singly and in flocks, sometimes up to several hundreds specimens, and in small groups.

154. **Grey Plover** *Pluvialis squatarola* (Linnaeus, 1758)

Occurs in plain Kazakhstan everywhere on migration. Once a flock of 10 birds observed in mountains on Markakol' lake at 1 September 1978 (Berezovikov, 1989a).

Rare passage migrant. Occurs on fresh or salty lakes, prefer sandy, crushed stone and saline soil shores, grassy shore is visited very rare. In spring appears end March, but mostly in April or early May. Latest birds observed until end May. Autumn migration begins in mid-July, and continues until end October – early November. Migrates in small flocks of up to 20-30, but sometimes of more than one hundred, or singly.

155. **Sociable Lapwing** *Vanellus gregarius* (Pallas, 1771)

Breeds in northern half of plain Kazakhstan, south up to Volzhsko-Ural'skiye sands and Sorochinsk village on Ural river (Shevchenko *et al*., 1993), Donguztau on Ustyurt, Aral Sea, upper reaches of Sarysu river, Kalbinskiy Altai and Ayaguz. Two broods recorded 21 June 2003 near Kanchengel (Belyalov, Karpov, 2004b). On dispersal and migration occurs everywhere. Single birds observed on Stone lake near Chokpak Station (where 3 birds recorded 20 September 2000) and on reservoir near Kopa station at 6 September 2001.

Rare breeding migrant. Inhabits dry steppe and half-desert with saline soil patches and sparse vegetation, usually near water, not further than 1-2 km. Arrives in small groups or flocks of one-two dozen birds mid-March, mostly in April – early May. Breeds in separate pairs, or in loose colonies of 10-15 pairs, 50-150 m one of other. Nest is shallow hole, which usually lined with dry grass, ship droppings or small stones, but sometime without anything. Clutches of 2-5, usually 4 eggs in end April – early June. Repeated nesting after loss of first clutches not rare probably. Both parents incubate (mostly female) for 17-21 days and care for juveniles which hatch in end May – mid-June and begin to fly in end June – July. Broods join in flocks, numbering up to one hundred or more birds (it was before!) and begin to disperse. Autumn migration begins from early August. In Naurzum recorded 20 September, near Kazalinsk 10 October, close to Tashkent 15 October. It is the latest record.

156. **White-tailed Lapwing** *Vanellus leucurus* (Lichtenstein, 1823)

Breeds near small and big water in deserts, north up to Ganyushkino (Belik, 1989), area adjacent to north-east shore of Caspian Sea (Klimov, 1991; Gistsov, Berezovikov, 1995), from 1975 in lower reaches of Turgay river (Auezov *et al*., 1978; Khrokov *et al*., 1990) and Chu valley near Ulanbel' village (Kovshar, Levin, 1993). In summer observed on Sarykopa lake (near Teke mouth) in 1984, in Selety-Teniz lake area in 1987 (Khrokov, 1991) and in Ile delta. Dispersing birds recorded in Aktobe steppe, on Khobda river, in lower reaches of Ilek and on Aksuat lake in Naurzum Reserve (3 birds 20 May and 10 birds 24 May 1968; Bragin, Bragina, 2003).

Common, in places rare breeding migrant. Inhabits shores of rivers, lakes and flooded areas near artesian well (fresh or salty) with low scarce vegetation often and saline soil patches, and marsh plots also. Arrives in mid-March or early April. Breeding in small colonies of 3-8 pairs. Nest is built on ground in shallow hole lined with dry grass. Clutches of 3-4 eggs, in end April – early June. Both parents incubate and care for juveniles. From July they occurs in flocks of one-two dozen birds. Autumn migration begins early, from end July, and continues in August. Latest birds were observed in mid – end September.

157. **Northern Lapwing** *Vanellus vanellus* (Linnaeus, 1758)

Breeds and occurs on migration in plains and in foothills everywhere, but on suitable places lives in mountains also, at up to 1800-2000 m (Dolgushin, 1962a). At last decades begins to nest on Markakol' lake, where before not bred (Berezovikov, 1989a). On migration occurs and in waterless districts too.

Numerous, in places common breeding migrant. Inhabits wet meadows in river valleys, near lakes, in marshes on plains and in mountains. More rare lives on fall cereal fields, fallow lands and saline soil parts not far from water. Arrives very early, on southern areas in mid- or end February – March, but on northern ones in April in small groups or flocks of two-three dozen birds. At Chokpak Pass latest migrants observed in mid-May. Breeds in separate pairs or in loose groups of several pairs on one reservoir, with other waders, gulls and terns often. Nest is built on shore, island or among meadow in shallow hole lined by various amount dry grass stems and leaves. Clutches of 4, rare 3 eggs from end March – early April on southern areas, and from end April – May in northern ones. Both parents incubate for 24-29 days and care for juveniles, which hatch in end April – June, and begin to fly in early June – mid-July. Repeated nesting after loss of first clutches not rare. Broods join in flocks in end June – July. From northern areas they leave until mid-September (some linger until mid-November), but in southern ones they gather in huge flocks (sometimes of hundreds or thousands) in August, September and first decade of October. Migrates here mainly in September – October, some birds occur all winter south of Chimkent.

158. **Sanderling** *Calidris alba* (Pallas, 1764)

Occurs on migration on plain Kazakhstan everywhere (Dolgushin, 1962a), especially on Caspian Sea. Sometimes observed in mountains of Southern Altai on Markakol' lake (Berezovikov, 1989a).

Common, in places rare passage migrants. Occurs on sandy, muddy, pebbly or saline soil shores of salty lakes, and on marine shore. In spring appear in May, in second half often, latest birds recorded in mid-June, in small groups or flocks up to 70 birds. In autumn appears end July – early August, and latest birds observed in mid-October.

159. **Red-necked Stint** *Calidris ruficollis* (Pallas, 1776)

Occasionally occurs on migration in south-eastern Kazakhstan on Sorbulak lake 8-18 September 1979, 4 birds (Khrokov *et al*., 1980), and on Alakol' lake 2 August 1987 and 5 September 1987 (Khrokov *et al*., 1993). Collected also on Zharkol' lake of the Kustanay province 21 August 1958 (Sudilovskaya, 1978), in Kurgaldzhino Reserve 23 August 1977 and 9 August 1999 (Andrusenko, 2002; Koshkin, 2003) and in mountains on Markakol' lake 31 August 1978 (Berezovikov, 1989a).

Rare passage migrant. Occurs on muddy or sandy shore of fresh and brackish lakes. No spring records. In autumn singles registered in mid-July – mid-September with flocks of Little Stint.

160. **Little Stint** *Calidris minuta* (Leisler, 1812)

On migration occurs in plain Kazakhstan everywhere, and occasionally in mountains, on Markakol' lake (Berezovikov, 1989a).

Numerous passage migrant. Stops on saline soil or sandy and muddy shore of lakes, pounds and other big and small reservoirs, on river sand banks and on other shallow water. Spring records from end March – early May up to end May – mid June. Main migration observed in May in groups of several birds, but sometimes up to five hundred. In autumn adults appear in early – mid-July, main migration in end July – early August, when juveniles begin flight too. Most of them migrate in August, latest birds recorded in end September in northern areas, and in mid-October in southern ones.

161. **Temminck's Stint** *Calidris temminckii* (Leisler, 1812)

Occurs on migration on plain Kazakhstan everywhere, numerous in eastern areas and rare in western. Occasionally observed in mountains of Southern Altai on Markakol' lake (Berezovikov, 1989a).

Common, in places numerous passage migrant. Occurs on muddy, sandy or saline soil shores of lakes, pounds and wet meadows. Spring records from mid-April – early May until end May – early June in small groups or flocks. In autumn adults appear in early – mid-July, juveniles begin migrate later, most of them in August – early September. Latest birds observed in mid – end September in northern areas and in end September – first decade of October in southern ones.

162. **Long-toed Stint** *Calidris subminuta* (Middendorff, 1851)

Recorded on migration mainly in eastern half of Kazakhstan: in Irtysh valley (Scherbakov, Berezovikov, 1978), in foothills of Kalbinskiy Altai, on Zaysan lake, Chiliktinskaya valley (Dolgushin, 1962a, 2002) and in mountains of Southern Altai on Markakol' lake (Berezovikov, 1989a). Less often

occurs in Alakol' lake (Khrokov *et al*., 1993), in Almaty area on Sorbulak lake (Erokhov *et al*., 1978) and near Tashkent. One bird recorded in Kurgaldjino Reserve in August 1999 (Koshkin, 2002, 2003). In breeding time observed in Monrak ridge.

Rare passage migrant. Occurs on muddy or sandy shores of fresh and brackish lakes and pounds. Spring records in mid-April only. At autumn adults registered in end June – mid-August, juveniles in mid-July – second decade of September. On Alakol' lake in 1981-1993, 22 adults were mist netted from 1 July until 9 August, and 58 juveniles from 26 July until 26 August. On Sorbulak lake near Almaty in 1977-1985, 23 adults were caught from 27 June until 16 August, and 132 juveniles from 15 July until 18 September. From these data evident, that this bird migrates in the same time, as Little Stint, with which it occurs in mixed flocks.

163. **Sharp-tailed Sandpiper** *Calidris acuminata* (Horsfield, 1821)

Occasionally occurs on migration on Alakol' lake 25 July 1981, 29 July- 3 August 1989 (three birds) and other one 7 August 1989 and on Sorbulak lake 10 July and 8 August 1977 near Almaty (Erokhov *et al*., 1978; Khrokov *et al*., 1993).

Rare passage migrant. Occurs on muddy, sandy or saline soil shore of fresh and salty lakes. No records in spring. In autumn singles adults were mist-netted from 10 July up to 8 August.

164. **Curlew Sandpiper** *Calidris ferruginea* (Pontoppidan, 1763)

Occurs on migration on plain Kazakhstan everywhere and occasionally in mountains of Southern Altai on Markakol' lake (Berezovikov, 1989a).

Common passage migrant. Occurs on muddy, sandy or saline soil shores of fresh and salty lakes and other reservoirs. Spring records from mid-April – early May, many migrate in May, up to end May – early June, in flocks of several dozen, with other *Calidris* often. At autumn adults appear in early July, juveniles in early – mid-August. Most birds migrate in August – early September, latest were observed in mid-October.

165. **Dunlin** *Calidris alpina* (Linnaeus, 1758)

alpina *– on upper parts rusty feather borders dark chestnut; white strips on outer webs of inner primaries narrower and does not reach the shaft; dark shaft streaks on upper breast wider and contrast. Male wing length 109-113 (111), female 110-118 (114) mm; bill length of males 28.2-31.8 (30.0), of females 27.8-37.0 (33.0) mm.* Occurs on migration everywhere on plain Kazakhstan.

centralis *– on upper parts rusty feather borders pale ochre; white strips on outer webs of inner primaries wider and reached up to the shaft; dark shaft streaks on upper breast somewhat thinner. Male wing length 108-116 (112), female 114-120 (116) mm; bill length of males 28.0-33.0 (31.0), of females 33.0-39.0 (35.0) mm.* Probably occurs on migration in eastern and south-eastern Kazakhstan, including Markakol' lake, where it is rare (Scherbakov, Berezovikov, 1978; Berezovikov, 1989a).

Common, in places numerous or rare passage migrant. Occurs on muddy, sandy or saline soil shore of lakes, pounds, rivers and various reservoirs. In spring appears in end March – early April on southern areas, and in end April – early May on northern, mainly in small groups and flocks, sometimes up to 5 hundred birds. Latest migrants registered in first decade of June. At autumn adults arrived in July, juveniles in August, most birds migrate in second half of August – first half of September. From northern areas they leave in end September, though singles and small groups linger up to early – mid-October, from southern ones in end October.

166. **Broad-billed Sandpiper** *Limicola falcinellus* (Pontoppidan, 1763)

falcinellus *– in nuptial plumage white feather borders on upper parts very narrow, without ochre shade.* Occurs everywhere in territory of Kazakhstan during seasonal migration, except for highlands.

sibirica *– in nuptial plumage ochre feather borders on upper parts more wider.* Possibly occurs in eastern and south-eastern Kazakhstan on seasonal migration.

Rare passage migrant. Occurs in shores muddy, sandy or saline soil of fresh and salty lakes, on river sand bar, and wet meadows. Spring records are from mid-May up to end May, in small groups or singly. In autumn appears in mid-July, most birds recorded in August and latest observed in early September.

167. **Ruff** *Philomachus pugnax* (Linnaeus, 1758)

Breeds in north-western Kazakhstan, south up to Chapaevo village (Gavrilov, 1961), between Emba river and Mugodzhary ridge (Sushkin, 1908), at lower reaches of Turgay river (Khrokov *et al*., 1990). May be breeds also between Ob' and Irtysh valleys to the south up to Semipalatinsk (Dolgushin, 1962a), but this not proved up to present. On migration occurs in plain areas everywhere, excepting mountains.

Rare breeding and a common passage migrant. Inhabits wet meadows in river valleys and near steppe lakes, or lake saline soil shores with high grass. On migration visit shore of various reservoirs, stubble fields or steppe far from water. Appears in March – early April in southern areas, but in April – early May in northern ones, in small groups or flocks of 30-50, up to some hundred birds. Males migrate at first and begin to mating-dance in northern half of Kazakhstan in mid – end May. Latest males leave in early June. Nest is built by female on tussock, among meadow or on island in colony of terns and waders, in shallow hole lined with dry grass. Clutches of 4 eggs in third decade of May – early June. Female incubates for 21 days and cares for juveniles alone. Autumn migration begins by males, which appear at end June with moulting collar feathers and inner primaries, and flight to winter quarter gradually. At mid July females begin migrate and juveniles at last. Main flight in August – early September, latest birds recorded in mid-September at northern areas, and up to early November at southern ones. On Kyzykol' lake 1-2 September 2005 near 20 thousand Ruffs observed.

168. **Jack Snipe** *Lymnocryptes minimus* (Brunnich, 1764)

Breeds in foothills of Dzhungarskiy Alatau, where female with egg ready to lay was shot 25 April 1910 near Kapal village (Shnitnikov, 1949). On migration recorded on plain Kazakhstan everywhere, excluding mountains. Wintering near Almaty and south of Chimkent.

Rare breeding migrant. Inhabits marshes and wet meadows at 1400-2000 m, on migration occurs on grassy lake and river shores. Spring records from end February – early April up to mid-May, mostly in April. Clutches of 4 eggs in end April – early May. No details are for Kazakhstan. At 10 July 1912 recorded in areas probably close to breeding, in Kegen valley (1850 m), may be it breeds there? Autumn migration begins late, in end August – mid-September. Small groups and singles observed in end September – first half of October mostly, some birds linger up to mid-November.

169. **Common Snipe** *Gallinago gallinago* (Linnaeus, 1758)

gallinago – breeds in middle current of Ural valley, on Ilek and Irtysh rivers, in Southern Altai and Kalbinskiy Altai, in Zaysan depression and Chiliktinskaya valley (Dolgushin, 2002), in Dzhungarskiy Alatau, in Tien Shan and on plains adjacent to mountains up to Ile delta. On migration occurs everywhere. In small numbers wintering in Ile valley, near Almaty, in Chimkent area and more southern.

Common, in places rare breeding migrant, but numerous on migration everywhere. Inhabits marshes and wet meadows with shrubs and hummocks, rare without them. On migration, occurs on grassy shore of lakes and rivers, in reed beds, and on open shore very rare. In spring appears in mid-March – early April in small groups or flocks of up to 25 birds. We saw flying flock at late morning in Chu valley too. Latest migrants observed in early May, but in northern areas and mountains arrives in end April. Female builds nest on territory of displaying male in shallow hole on ground or hummock lined with dry grass. Clutches of 4 eggs in April – mif June, but repeated (?) in early July. Female incubates and cares for chicks alone. Juveniles hatch in May and begin to fly in mid-June – July. Autumn migration from July, intensive flight was observed in August – September, latest records in end October – early November.

170. **Great Snipe** *Gallinago media* (Latham, 1787)

In the past nested on middle current of Ural valley, in lower reaches of Ilek river (Dolgushin, 1962a), where at last decades was not found (Shevchenko *et al*., 1993; Khrokov *et al*., 1993). Considered as breeding for Irtysh valley in vicinities of Semipalatinsk and Ust'-Kamenogorsk, in Bukhtarma valley (Dolgushin, 1962a), however modern authentic finds in East Kazakhstan not present (Scherbakov, Berezovikov, 1978; Berezovikov, 1989a; Berezovikov *et al*., 1992). Last nest in lower reaches of Ul'ba river near Ust'-Kamenogorsk was found in 1964 (Khrokov, Samusev, 1990). Displaying males on Maraldy lake in Pavlodarskoye Trans-Irtysh'e observed 15 May 1982 (Solomatin, 1999a). On migration occurs before everywhere, excluding waterless areas.

Very rare breeding migrant. Inhabits hummock marshes with shrubs, on migration occurs on wet meadows, marshes, grassy shore of rivers, lakes and irrigation canals. Appears in end March – mid-April, latest records in early May or early June, as exception. Polygamous, on displaying points up to one hundred mails gather. Nest builds by female on ground. Clutches of four eggs, only female incubate and stay with small chicks. The only nest found 18 June 1964 near Ust'-Kamenogorsk. It was placed on meadow among grass in small depression and lined with dry grass. It contained 4 slightly incubated eggs. Autumn migration begins in end of August, latest records in early October.

171. **Pintail Snipe** *Gallinago stenura* (Bonaparte, 1830)

Breeds in Western Altai in upper reaches of Belaya and Chernaya Uba rivers, on Beloubinskiye lakes (Scherbakov, 1978a) and on Markakol' lake (Berezovikov, 1989a). On migration occurs in Dzharkent area 25 Agust 1900 (Dolgushin, 1962a), on Sorbulak lake near Almaty (14 birds were ringed 21-31 August 1978, 23 August 1980, 9 August – 20 September 1982, 9 September 1983, 25 August 1984 and 18 August – 1 September 1985) and near Tashkent (Dolgushin, 1962a).

Rare breeding migrant. Inhabits sedge hummock marshes, alpine meadow with birch or juniper bushes near stream or other water, at 800-2000 m. Arrives in end March – May. Nest is built in shallow hole lined with dry grass. Clutches of 4 eggs in early June, juveniles begin to fly in end July. Autumn migration on foothills plains in August – end September, one bird recorded near Tashkent in end November.

172. **Swinhoe's Snipe** *Gallinago megala* Swinhoe, 1861

Breeds in mountains of Western Altai (Scherbakov, 1990b), in Bukhtarma valley (Berezovikov *et al*., 1992), near Ridder, on Ivanovskiy ridge (Dolgushin, 1962a), though on Markakol' lake not found (Berezovikov, 1989a). May be it nests also in Saur ridge (Dolgushin, 1962a) and also in Zailiyskiy Alatau where female with enlarged follicles was obtained 5 June 1964 (Kovalenko, 2002d). Singles were shot end October 1909 on northern slopes of Karatau, on Tarturgay station near Kzyl-Orda 5 January 1910 and in Pskent village 11 November 1908 (Zarudnyy, 1910).

Rare breeding migrant. Inhabits wet tussock meadows with high grass in taiga belt, or sub-alpine marshes with birch and willow shrubs near the forest, at 600-2100 m. Arrives in May, latest migrant (?) near Big Almaty Lake (2500 m) obtained 5 June 1964. It was a female with large ovary (diameter of the largest follicle 9.6 mm). Displaying flights observed from 10 May up to 30 June. Female builds nest in shallow hole lined with dry grass. Clutches of 4 eggs in June – early July. Juveniles hatch from end May – early July. Close to Ridder 21 June a brood with small chicks observed. They begin to fly in end June – early August. Autumn migration begins from mid-August, and they leave breeding places up to end August. In foothills on south Kazakhstan recorded in mid-August, singles observed in end October – mid-November.

173. **Solitary Snipe** *Gallinago solitaria* Hodgson, 1831

solitaria – breeds on Western Altai at Ridder area (Scherbakov, 1978a, 1990b), for area of Markakol' lake summer records are known only (Berezovikov, 1989a). Nesting in Tien Shan and Dzhungarskiy Alatau despite of assertion of I.A. Dolgushin (1962a) not proved up to present. Wintering in mountains and on nearby plains of Altai and Tien Shan, to west up to Semipalatinsk and Tashkent. One bird was mist-netted 3 September 1986 in lower of Sarysu river (Khrokov *et al*., 1991). Singles recorded 23 November 1974, 28 September 1974, 19 February 1975 and 11 November 1977 in highlands of Zailiyskiy Alatau ridge (Big Almaty Lake; Kovshar, Lopatin, 1983).

Rare resident. Inhabits cedar larch light forest with low grass, needles and boulders near streams or small lakes, at 1900-2400 m. On dispersal and in winter occurs on river and stream shores, not freeze up. Wintering areas leave in March – April, latest birds recorded in end April. Clutches of 4 eggs in early July, but in early June probably too, as a brood of two juveniles, which begins to be fledged, observed in 30 June 1973. Dispersal begins in late July, and on low altitude and plains they recorded in August or mid-October.

174. **Asiatic Dowitcher** *Limnodromus semipalmatus* (Blyth, 1848)

In the early of XX century it nested on border of Kazakhstan with Altai territory at Lokot' village. The only breeding colony of near 10 pairs on 2.5 hectares of meadow located 21 June 1973 in upper streams of Kokpekty and Kindykty rivers, 55 km south-east of Dzarma station (Kapitonov *et al*., 2004). On migration recorded in1893 at Semipalatinsk, in areas of Turkestan 19 August 1909 and Tashkent 16

September 1908 (Dolgushin, 1962a), also near Sasykkol' lake two birds caught 22 July 1989 (Khrokov *et al*., 1993), on Kurgaldzhino lakes 9 July 2001 and 5 August 1999 (Koshkin, 2002, 2003) and 28 July 2003 obtained close to Petropavlovsk (Vilkov, 2004). In July 1982 a pair was observed in Tobol valley nearby from borders of Kazakhstan (Blinova, Blinov, 1997).

Accident breeding migrant. Inhabits wet gramineous-grass meadow with sedge. During migration occurs on saline soil, muddy or sandy shore of salty lakes. In spring arrived in mid-April – end May. Breeding in colonies up to 20 pairs. Clutches of 3 or more often 2 eggs in end May – June. In the colony 21-22 June 1973 were eggs on late stage of incubation or small nestlings. At autumn it observed in early July – mid-September.

175. **Eurasian Woodcock** *Scolopax rusticola* Linnaeus, 1758

Breeds in Western Altai on Ivanovskiy and Lineyskiy ridges, in valleys of Belaya and Chernaya Uba and Malaya Ul'ba rivers. Displaying males occurs in lower reaches of Bukhtarma river, on Targyn river, in Kalbinskiy Altai and in Kaindy river valley on Narymskiy ridge (Scherbakov, 1992, 1995b). On Markakol' lake occurs only in autumn (Berezovikov, 1989a). Displaying males observed early May on Koksu valley, Dzhungarskiy Alatau (Berezovikov, Levin, 2002a), on Tentek valley near Uch-Aral two birds recorded 23 June 2004 (Berezovikov, Levinskyi, 2005). Breeds also in Northern Tien Shan (Dolgushin, 1962a; Kovshar *et al*., 1978), and episodically on Chu valley (Grachev, 1983). Displaying males recorded end May in Charyn grove (Kovshar, 2002). On migration recorded everywhere, including Central Kazakhstan 15 October 1969, 16 December 1969 (Khrokov *et al*., 1977), intense autumn migration on Ural valley. Occasionally winters in areas of Almaty and Tashkent.

Rare, in places fairly common breeding migrant. Inhabits dense deciduous forest with dead-fallen trees and shrubs, mixed forest with asp islands or prevail deciduous trees and shrubs in mountains at 1300-2000 m in Zailiyskiy Alatau, or riparian scrub forest with small marsh plots in deserted foothills. On migration occurs in forested river valleys, groves, forest-belts, gardens, and rare in reed-beds on shore of lakes. Arrives in end March or mid-April, latest migrants observed in early May. Nest is built in shallow hole lined with dead grass and leaves under scarce grass or bush. Displaying males' flights in early April – first decade of July. Clutches of 4 eggs, in late April – mid-June. Only female incubates. Juveniles hatched in early May – beginning of July, latest brood with flying juveniles recorded at 23 August 2000. Long nesting time can be explained not only by repeated breeding, but that some females are double brooded (Dzhanyspaev, 2001). Autumn migration begins at northern areas in August, at southern ones in September, and finishes up to end of October.

176. **Black-tailed Godwit** *Limosa limosa* (Linnaeus, 1758)

limosa – breeds in northern half of Kazakhstan, south up to Kamysh-Samarskiye lakes, lower reaches of Irgiz, upper reaches of Sarysu river and Alakol' depression. On migration occurs everywhere in plain Kazakhstan, except for waterless and highlands areas.

Common breeding migrant. Inhabits wet meadows, grassy shore of lakes and rivers, flooded grassy plains, and more rare wet saline soil parts near lakes. Appears in end March or April, in flocks up to one hundred birds. Main migration in April, and finishes in early – mid-May. Breeds in separate pairs or in loose colonies of up to 10 pairs, together with other waders often. Nest is built in shallow hole lined with some old grass on dry soil, but on wet soil nests are thick and bulky. Clutches of 4 eggs, in end April – early June. Both parents incubate and care for juveniles. They hatch in end May – early June, and fledge in end June – July. Autumn migration in end July – August, latest birds were observed in end September, but some birds linger as exception until mid-November.

177. **Bar-tailed Godwit** *Limosa lapponica* (Linnaeus, 1758)

lapponica – occurs on migration in plain Kazakhstan, mostly in western areas, east up to Maraldy and Shiganak lakes in the Pavlodar oblast (Solomatin, 1999a) and Almaty area on Sorbulak lake.

Common, in places rare passage migrant. Occurs on sandy or saline soil shore of see, fresh or salty lakes, on grassy shore of rivers and lakes. Spring records in mid-April – early June, in small groups or flocks up to 70 birds. Small groups were observed in June also (on Mangyshlak 25 May 1951 and in June-July 1951-1952; in Naurzum 30 June 1929 and 5 July 1929; in mouth of Selety river 29 June, six birds, brood?), from non-breeding individuals. At autumn appears in early July, and latest records in end September – early October.

178. **Little Curlew** *Numenius minutus* Gould, 1841

Recorded 8 September 1928 on Syrdarya river at Solotyube station near of Kzyl-Orda (Dolgushin, 1948c, 1962a), 25 June 1978 and 7 July 1978 on Tengiz lake (Andrusenko, Dudenkov, 1982) and 31 June 2003 Esey lake (Koshkin, 2004), 8 September 1987, 5 August 1989 on Alakol' and Sasykkol lakes (Khrokov *et al*., 1993).

Very rare passage migrant. Occurs on saline soil shore of salt lakes and sandy river shore. No spring records. In autumn singles and two birds twice (seven at all) were shot, observed or mist-netted in end June - early September. Some birds flight with small flocks of Common Curlew or Whimbrel.

179. **Whimbrel** *Numenius phaeopus* (Linnaeus, 1758)

phaeopus *– rump and upper tail coverts white or poorly covered by dark streaks, but occasionally they develop so, that dark colour dominates above white. On axillaries usually developed picture from 6-8 cross dark bars, less often figure made from dark spots, not merging in strip, even less often axillaries pure white.* Breeds in western Kazakhstan, where nest was found near 50 km to north of Chapaevo village (Shevchenko *et al*., 1993). On migration occurs on plains practically everywhere.

variegatus *– rump and upper tail coverts with developed dark picture sometimes almost hide basic white background. On axillaries developed picture from 7-9 cross dark bars. There are birds with considerably reduced dark picture on rump, upper tail coverts and axillaries, and at separate specimens picture on axillaries kept only as fine dark marks.* The geography of distribution of this race in Kazakhstan found out badly.

Very rare breeding and common passage migrant. Inhabits river meadows, but in Siberia marsh shore of lakes. On migration, occurs on grassy shore of lakes and rivers, or in steppe and saline soil parts near salty lakes. In spring appears in April – early May, latest observed in end of May – early June, singly or in small groups or flocks, numbering up to 50 birds. The only nest, found at 25 May 1986 has 2 eggs and 2 chicks, copulated birds recorded 21 May 1982 close to Chelkar lake. Autumn records in July – August, some birds linger up to end September – early October.

180. **Slender-billed Curlew** *Numenius tenuirostris* Vieillot, 1817

Occasionally occurs on migration in plain Kazakhstan. One observed at June 22 1989 on Beloye lake in Pavlodarskoye Trans-Irtysh'e (Kovshar, Khrokov, 1993), four 20 May 1981 and 11 May 1982 in Maraldinskaya depression and near Priozernoye village (Solomatin, 1999b), singles observed 26 May 1986 in Ural delta and 25 April 1988 in 50 km east of Atyrau (Belik, 1994), though not proved documentary. Between Urda and Novaya Kazanka several birds recorded 7 June 1926, one 5 August 1926 and a pair 23 June 1927 in lower of Bolshoy Usen river. In Naurzum steppe regularly observed in 1930-1940-th, but from 1973 no bird recorded (Bragin, Bragina, 2002). The indication about "good flight" in spring on lower reaches of Ural valley (Khrokov, Gavrilov, 1978) is erroneous as observations concern Whimbrel.

Very rare passage migrant. Occurs on wet meadows with high vegetation, salty soil shore of lakes and feather grass or wormwood steppe. Before it was not uncommon, spring records were in end March – April, latest observed in early May singly, in small groups or flocks, numbering up to one dozen birds. Dispersal flocks (probably of not breeders) were met in June, and autumn migration was recorded from July up to second decade of September.

181. **Eurasian Curlew** *Numenius arquata* (Linnaeus, 1758)

arquata *– general colour darker. On upper parts dark spots larger, light feather borders narrow dark ochre. On under parts dark shaft streaks wide, on flanks cross picture developed. On axillaries dark shaft streaks developed and merging sometimes in cross bars. On rump dark longitudinal streaks developed, upper tail coverts with cross black-brown bars.* Breeds in Western Kazakhstan, between Volga valley and upper reaches of Emba intergrades with *orientalis*.

orientalis *– general colour lighter. On upper parts dark spots smaller, light feather borders wide pale ochre. On under parts dark shaft streaks narrow, on flanks cross picture usually not developed. On axillaries dark shaft streaks absent or poorly developed. On rump dark longitudinal streaks absent or poorly developed, upper tail coverts with narrow shaft streaks.* Breeds in northern half of Kazakhstan, east from Mugodzhary ridge, south up to lower of Turgay, Zaysan and Alakol' depressions (Berezovikov, 2002f). In Zailiyskiy Alatau ridge on 1600 m the nest with 4 eggs found 10 May 2003 (Dzhanyspaev, 2004b). On migration occurs to the south. Vagrant observed 25 August 1977 on Markakol' lake (Berezovikov, 1989a).

Common breeding migrant. Inhabits feather-grass steppe, meadows in river valleys, saline soil or meadow plots near lakes and other water. Appears in mid-March – early April, intensive flight in April, latest birds observed in end April – late May, in small groups and flocks, sometimes numbering up to one hundred birds. Breeds in separate pairs not closer than 0.5 km one of other. Nest is built on dry ground in shallow hole lined with dry grass. Both parents incubate for 26-28 days and care for juveniles. Clutches of 4 eggs in May – early June, chicks hatch in end of May – mid-June. Broods join in flocks and disperse on steppe. Watering places arevisited regularly. Migration begins in July – August in big flocks numbering up to several hundreds birds, latest registered in early or end October.

182. **Spotted Redshank** *Tringa erythropus* (Pallas, 1764)

On migration occurs in plains everywhere excluding mountain lakes and waterless deserts.

Rare passage migrant. Occurs on lakes, pounds and other reservoirs, both fresh and salty, with grassy and muddy shores. Arrives singly or in small flocks of up to one-two dozen birds in second half of March – early April or in May in northern areas. Latest migrants recorded at southern areas until end May. Autumn migration begins in end June – July, most birds migrate in August – September, and latest ones in end October. Intensive migration was observed through central parts of Kazakhstan only, where flocks of some dozen, up to one hundred birds, not rare both in spring and in autumn.

183. **Common Redshank** *Tringa totanus* (Linnaeus, 1758)

totanus *– prevails morph of brownish-grey colour. Upper parts brownish-grey with olive shade, shaft dark spots medium-sized, terminal black streaks and barred scapulars and tertials narrow. Under parts usually more covered with brownish-black longitudinal strips and spots. In Tien Shan area it intergrades with* ***eurhinus****, which nests on Pamir.* Breeds in Western Kazakhstan, east up to Emba valley, where occurs on migration too.

ussuriensis *– prevails morph of brownish-ochre colour. Upper parts brownish-ochre, shaft dark spots larger, terminal black streaks and barred scapulars and tertials wider. Spots and strips on under parts smaller and not numerous.* Breeds in Eastern Kazakhstan, west up to Emba valley, where occurs on migration too. Episodically nests in mountains on Markakol' lake (Berezovikov, 1989a).

Numerous, in places common breeding migrant. Inhabits lakes and rivers with grassy and muddy shores both on plains and in mountings up to 1600-2000 m. Arrives in end February – early March at southern areas, and in April – early May at northern ones in pairs or small groups of dozen birds. Breeding in separate pairs, not far one of other, in common with other waders or terns often. Nest is built on shore or island in shallow hole lined with dry grass and sheltered by adjacent grass from above. Clutches of 4 eggs, in April – mid-June. Both parents incubate for 20-26 days and care for juveniles, which hatch in end May – June. They begin to fly from end June – July. Repeated breeding after loss of first clutches observed. Autumn migration begins in July – early August, adults at first, which moult primaries gradually. Then juveniles migrate, most of them leave in mid or end September, though singles observed until end October – early November.

184. **Marsh Sandpiper** *Tringa stagnatilis* (Bechstein, 1803)

Breeds in northern half of plain Kazakhstan, south up to Kamysh-Samarskiye lakes, lower reaches of Irgiz, upper reaches of Nura, Zharma station, Batyk village on Irtysh river (Dolgushin, 1962a), probably in Kalbinskiy Altai (Egorov *et al*., 2001) and in Pavlodarskoye Trans-Irtysh'e (Kovshar, Khrokov, 1993). On migration occurs everywhere on plains.

Common, in places rare breeding migrant. Inhabits wet grassy meadows of steppe lakes and rivers. Appears in end March – early April in southern areas, and in April – early May in northern ones, in small groups or flocks of up to three-four dozen birds. Migration finishes in early June in southern areas. Breeds in loose colonies of 10-20 pairs, or in separate pairs too, with other waders and terns often. Nest is built on ground in shallow hole lined with dry grass, but sometimes on hummock surrounded by water, or on remains of last year hay. Clutches of 4 eggs, in May – mid-June. Both parents incubate and care for juveniles, which hatch in June – early July, and begin to fly in end July. Autumn migration begins early, in mid-July, when adults with moulting primaries fly in small groups. Juveniles migrate later, mostly in August, latest birds observed until mid or end September.

185. **Greenshank** *Tringa nebularia* (Gunnerus, 1767)

On migration occurs everywhere in Kazakhstan both on plains and in mountains.

Rare passage migrant. Occurs on river banks, on grassy or bare shore of lakes and other reservoirs. Appears in end February – early March in southern areas, and in April – early May in northern

ones. Migrates in small groups of up to dozen birds, latest were observed in end May. Autumn migration from July, most birds leave northern areas until end September, though singles recorded in mid-October. In southern areas, they are not rare in early November, and some birds winter in southernmost Kazakhstan on Keles and Chirchik rivers. In 18-21 December 2003 three birds recorded on Chardara reservoir (Erokhov, Belyalov, 2004).

186. **Green Sandpiper** *Tringa ochropus* Linnaeus, 1758

On migration occurs on plain Kazakhstan, regularly was observed on Markakol' lake (Berezovikov, 1989a). In highlands of Zailiyskiy Alatau ridge, Big Almaty Lake recorded 4 August 1972, 7-22 August 1975 and 5 August 1976 (Kovshar, Lopatin, 1983).Though birds recorded in Northern Kazakhstan in summer regularly, only B.K.Stegman (1934) in 1932 near Borovoye long time observed a pair of birds on one marsh, where he saw some later a brood too. Probably nesting among forest of Northern Kazakhstan and Altai (Dolgushin, 1962) don't prove up to present.

Common passage migrant, though probably a rare breeding migrant. Inhabits forestry marshes, lakes and rivers. On migration occurs on fresh or salt lakes, rivers, streams and other reservoirs in open landscape. Appears in March – April in southern areas, and in end April – early May in northern ones, in small groups or flocks of up to two-three dozen birds. Migration finishes in mid – end May. Breeds in separate pairs, using old thrush, doves or crow nests. Clutches of 4 eggs, which incubated by female. In Kazakhstan no authentic nest was found. Autumn migration begins in end June or in July. From northern areas disappear until mid-September, but from southern ones in early October – early November. In mild winters singles occurs in southern and south-eastern Kazakhstan.

187. **Wood Sandpiper** *Tringa glareola* Linnaeus, 1758

Probably bred in 1966 on Markakol' lake (displaying male observed 2 June 1966) and on Shoptykol lake (female with two brood patches collected 22 June 1966), but the next years only late migrants were observed. Two birds with restless calling recorded 29 July 1983 (Berezovikov, 1989a). On Irtysh near Chernoyarka village a bird with elements of territorial behaviour observed 15 June 1982 (Solomatin, 1999a). In source of Kara-Kaba river (2100-2200 m) on small lakes 28 June – 2 July 2004 several worry birds observed, no nest found (Starikov, 2005). On migration occurs everywhere in Kazakhstan, on plains and in mountains.

Common, in places abundant passage migrant, and probably accident breeding migrant on Altai. Inhabits river meadows, and stops on shores of rivers, lakes and other reservoirs. Arrives in mid-March – early April at southern areas, and in April – early May at northern ones in small groups or flocks of up to one-two dozen birds. Latest migrants observed in end May – early June. Breeds in separate pairs on marshes. Female with brood patch shot 22 June 1966 and in end June juveniles with wing not full grown recorded. Autumn migration begins in July, adults fly at first, then juveniles. Latest birds were observed in mid-September, but some linger until mid-October.

188. **Terek Sandpiper** *Xenus cinereus* (Guldenstadt, 1775)

On migration occurs in plain Kazakhstan everywhere, in mountains recorded on Markakol' lake regularly (Berezovikov, 1989a).

Common passage migrant. Occurs on rivers, fresh and brackish lakes with muddy, sandy or grassy shores. In spring appears in end April – early May, and recorded up to mid-June in small groups and flocks of 30-40, up to 100 birds. Autumn migration begins in early July, when adults flight. Most birds migrate in August – early September, when juveniles dominate. From northern areas disappear in mid-September, but from southern ones in end of this month only.

189. **Common Sandpiper** *Actitis hypoleucos* (Linnaeus, 1758)

Breeds on Ural and Irtysh rivers, in mountains and foothills of Southwest Altai, Kalbinskiy Altai, Saur, Monrak, Tarbagatay, Dzhungarskiy Alatau and Tien Shan. On migration occurs in Kazakhstan everywhere, mostly on plains. Sometimes birds winter on no freeze water to south of Chimkent.

Common, in places rare breeding migrant. Inhabits fresh lakes, pounds, plain and mountain rivers and small streams with pebbly, muddy or sandy shore and scarce vegetation. At mountings it lives up to 3000 m. In spring in southern areas appears in end March – early April, in northern areas in April or early May singly or in pairs and small groups. Migration finishes in mid- or end May. Breeds in separate pairs not close one to other. Nest is built in shallow hole lined with dry grass. Clutches of 4 eggs in May – June. Both parents incubate for 20 days and care for juveniles, which hatch in June – July, and when they begin

independent, broods disperse to south singly or in small groups, big flocks no formed. Autumn migration begins in mid-July, most of them leave in August – September, singles linger up to end September in northern areas, and up to mid-October in southern ones.

190. **Turnstone** *Arenaria interpres* (Linnaeus, 1758)

interpres *– in nuptial plumage rusty colour of upper parts (upper back, scapulars, upper wing coverts) more light ochre tone.* In plain Kazakhstan occurs on migration everywhere.

oahuensis *– in nuptial plumage rusty colour of upper parts (upper back, scapulars, upper wing coverts) more dark rusty-chestnut tone.* Occurrence possible on migration in eastern and south-eastern Kazakhstan. Subspecies identification of birds occasionally recorded on Markakol' lake in Southern Altai (Berezovikov, 1989a) not established.

Rare, in places common passage migrant. Occurs on sandy, muddy or crushed stone shores of fresh or salty lakes, pounds, rivers and various reservoirs. In spring appears singly, in small groups or flocks up to 50 and more birds in mid-May. Migration is going to finish in first decade – mid-June. At autumn arrives in end July, many birds observed in August, and latest registered in end September.

191. **Red-necked Phalarope** *Phalaropus lobatus* (Linnaeus, 1758)

On migration occurs in plain Kazakhstan everywhere, occasionally in mountains on Markakol' lake (Berezovikov, 1989a).

Common, in places numerous passage migrant. Occurs on fresh, brackish and salty lakes, pounds and other reservoirs with standing water and muddy or sandy shores. In spring arrives in April in southern areas and in end April – early May in northern ones in small groups and flocks of above 200 birds. Intense migration in May, and latest birds recorded at mid June. Autumn flight begins in July, when adults especially females dominate. From August onward juveniles dominate. Prefers salty lakes of Central Kazakhstan, where huge flocks numbering thousands birds, which refuel fat reserves. On Tengiz lake gather at least 600-800 thousand (Dolgushin, 1962a). On Kipshak lake at end of July 1983 flocks arrive to small patch of brackish water in evening, and up to 8 hundred were mist netted each day. Some recaptured have on ring salt layer near 1 mm of thickness, the most heavy has 54.4 grams in weight. Most birds leave in September, and latest ones recorded in mid – end October, or as exception in early November.

192. **Grey Phalarope** *Phalaropus fulicarius* (Linnaeus, 1758)

Occasionally recorded on migration on plains: in area adjacent from east to Caspian Sea (Dolgushin, 1962a), on Caspian Sea 8 April 1935, on Selety lake 28 May 1899, in lower Ilek on Sorkul lake in early August, in lower Irgyz valley 6 June 1898, in Tengiz-Kurgaldzhino depression 20 October 1969 (Khrokov *et al*., 1977), on Irtysh river near Ust'-Kamenogorsk 20-27 October 1976 (Berezovikov, 1986b), on Alakol' lake 2 September (*per* E.M.Auezov), on Sasyk-Kol lake 21 September, in Karatal mouth 30 May, Kapchagay on Ile river 27 June 1945, in Tashkent area 27 September 1909 (Dolgushin, 1962a) and near Almaty on Sorbulak lake 18 August and 6 September 1985 and one bird recorded 3 September 2001

Very rare passage migrant. Occurs on large fresh or salty lakes with muddy or sandy shores. In spring occurs in early April – beginning of June, but one shot 27 June 1945 near Iliysk town. Autumn records in mid-August – end October. Singles often occurs with flocks of Red-necked Phalarope. All 6 birds known in autumn were juveniles.

193. **Pomarine Skua** *Stercorarius pomarinus* (Temminck, 1815)

Single bird was shot near Orenburg on Ural river 17 November, the other one observed on Sulukol' lake in upper reaches of Chingirlau river in summer (Zarudnyy, 1888). Near Aral'sk town one specimen recorded 14 and 27 April 1907 (Zarudnyy, 1916) and other one observed in 7-8 June 1928 (Spangenberg, Feigin, 1936). Several birds were observed on Northern Caspian Sea (Dolgushin, 1962a) and one was shot in Kurgaldzhino 29 October 1973 (Krivizkiy *et al*., 1985). On northern shore of Zaysan lake one bird recorded in 28 July 2001 (Berezovikov, Rubinich, 2001).

Accident vagrant. Occurs on Caspian and Aral Sea or on large salty and fresh lakes. Spring records in April – early June, in autumn observed in September – November.

194. **Arctic Skua** *Stercorarius parasiticus* (Linnaeus, 1758)

Most observations made in western Kazakhstan. Single birds observed (several were shot) on Ural river in 60 km to east of Ural'sk (Gubin, Levin, 1980), on Chelkar lake, on Caspian Sea near Atyrau and on Mangyshlak 13-18 July 1951 and 26 September 1952, where recorded regularly (Dolgushin, 1962). Occurs also in Naurzum Reserve (Gordienko, Moiseev, Smetana, 1980; Bragin. Bragina, 2002), in lower reaches of Turgay river 4 July 1971 (Auezov *et al*., 1978), on Tengiz lake 17 June 1959, 27 July, 12 August and 1 September 1969 (Dolgushin, 1962; Andrusenko, Khrokov, 1981; Krivizkiy *et al*., 1985), on Aral Sea (Zarudnyy, 1916) and on Telekolskiye lakes 21 October 1982. Single birds observed even at Chokpak Pass in foothills of Western Tien Shan in 13 September 1967 and 1972 (Gavrilov, Gistsov, 1985), on way to Arnasay lake (Uzbekistan), where obtained and recorded several times in 1978 and 1981 (Kalabin, 1984; Meklenburzev, 1990).

Rare passage migrant. Occurs on sea and large salty lakes. Spring records in April - May, summer observations in June – July, probably birds not ready for breeding. In autumn recorded more often, in end August – October.

195. **Great Black-headed Gull** *Larus ichthyaetus* Pallas, 1773

Episadically breeds in southern half of Kazakhstan, north up to Kushum mouth (Debelo, 1991; Shevchenko *et al*., 1993), area between Utva and Ilek rivers (Berezovikov *et al*., 1992), Zharkol' and Zhaman lakes (Naurzum Reserve), Tengiz lake, Malybay and Karasor lakes in Pavlodar oblast (Solomatin, 1999b) and Alakol' depression. On dispersal and migration occurs everywhere, including mountain lakes of Southern Altai. In small number wintering on Caspian Sea, to south of Mangyshlak.

Rare breeding migrant. Inhabits sea, large salty or fresh lakes or reservoirs with small islands, prefers fishy ones. On migration occurs on rivers and small lakes too. Arrives mid-February – March or in April on northern areas. Migrates in small flocks or singly. Breeds in dense colonies, sometimes numbering up to several thousand pairs, on bare or covered by scarce grass islands, together with other gulls, terns and waders often. Nest is built in shallow hole lined with dry grass and pieces of reed stems, at 15-20 cm each of other. Clutches of 1-3, usually 2-3 eggs in mid-April – May. Both parents incubate near a month and care for juveniles, which hatch in May – June and begin to fly in July – early August. Autumn migration from August until freeze up reservoirs, latest birds recorded in end October – mid-November.

196. **Relict Gull** *Larus relictus* Lonnberg, 1931

Breeds on islands of Alakol' lake (Auezov, 1970; Kovshar, 1974) and in eastern part of Balkhash lake (Auezov, 1986a). On migration observed on Dzhalanashkol, Dzhungarian "Gates". Sharp fluctuation in numbers on Alakol' lake show about change of breeding place between Kazakhstan and China, which must be proved by colour-ringing only. From ringed on Alakol' lake birds one return from Northern Vietnam (Auezov, 1974), three from China and two unusual. One ring was sent from Bulgaria, the second from Turkey, which point to the possibility of this species wintering on Black Sea and Mediterranean Sea (Gavrilov, Gavrilov, 2000).

Rare breeding migrant. Inhabits large salty lakes with small islands, stable or temporal. Arrives in end March - April in small groups. Breeding in dense colonies, sometimes more than one thousand pairs, together with Great Black-headed Gulls, Gull-billed and Caspian Terns often. Nest is built in shallow hole lined with dry grass, which is added during incubation, in small distance each of other, on sandy or with scarce vegetation islands. Clutches of 1-4 eggs in May. Eggs are light olive-clay with brown-black or deep-olive and deep light grey spots. Dimentions (n=142): 54.2-65.7 x 38.5-46.0 m, weigh (n=14) 52.7-70.0 (60.08) g. Both parents incubate (female at night and early morning, male in the afternoon) for 24-26 days and care for juveniles, which hatch at June and begin to fly at 40-45 days old, in July. Autumn migration begins in early August, most birds leave breeding area in September, and in end September one ringed bird was recorded in Viet Nam, on winter quarter.

197. **Mediterranean Gull** *Larus melanocephalus* Temminck, 1820

Some birds repeatedly observed on Mangyshlak at Bautino and on Mangistau islands in May and July 1951 and 1952 (Gladkov, Zaletaev, 1956). Two birds recorded in Kurgaldzhino reserve 24 July 1999 (Koshkin, 2003) but not proved documentary. In connection with expansion nesting area of this species to north-east up to Kalmykia (Krivenko *et al*., 1973), probability of occurrence in Kazakhstan grows, and the breeding is possible.

Rare vagrant. Occurs on shore of Caspian Sea in May and July.

198. **Little Gull** *Larus minutus* Pallas, 1776

Breeds in northern half of plain Kazakhstan, south up to Kamysh-Samarskiye lakes, lower reaches of Turgay river, Karkaralinsk area (Dolgushin, 1962a), Zaysan depression (Survillo, 1968) and Alakol' lake, where they observed 10-18 August 1993 and a colony was found 11 May 2004 (Berezovikov, Erokhov, 2004; Berezovikov, 2004a). On migration occurs everywhere, mostly in western regions, excluding of waterless areas and highlands.

Common breeding migrant. Inhabits fresh shallow lakes covered by above-water vegetation, flood steppe parts near river or lake. Arrives in mid-April – mid-May in small groups or flocks of up to 200 birds. Breeds in colonies (up to 50 or several hundred pairs) together with White-winged Black Tern especially. Nest is built from leaves of reed, reed mace, sedge, rush and others, and is fairly big construction. But on sandy islands, where they live with Avocet, it is only a shallow hole lined with small amount of dry grass. Clutches of 2-3 eggs in end May – June, but sometimes in mid-July, repeated probably. Both parents incubate and care for juveniles, which hatch in June and begin to fly in end June – early August. Nests are loss out of flooding and beasts. Autumn migration begins early, in end July, latest birds recorded up to mid-September, but on Mangyshlak they were observed up to mid or end October. Wintering in small numbers on Caspian Sea, to south of Alexander Bay gulf.

199. **Black-headed Gull** *Larus ridibundus* Linnaeus, 1766

Breeds and occurs on migration everywhere in plain Kazakhstan, except for waterless areas. Occupies some mountain lakes (Markakol' lake, 1450 m, Tuzkol' lake, 2000 m) too. On Sorbulak lake near Almaty one bird recorded 1 December 2002 (Belyalov, Karpov, 2002).

Numerous, in places common breeding migrant. Inhabits fresh or salty lakes, pounds and rivers with plenty of above-water vegetation. Lives on islands of rapid flowing river or of lakes. Appears in March – April (but on Markakol' lake in end May only), in groups of 5-10, or flocks up to 40-50 birds. Breeding in colonies of several dozen or hundred pairs with other gulls and terns often. Nest is built on dry heaps of reed, among reed-beds or on shore from dry vegetation. Clutches of 1-4, usually 2-3 eggs from end Aril – May until second decade of July (repeated probably). Both parents incubate for 22-24 days and care for juveniles, which fledge at 40 days old, in mid-June – end July. Repeated breeding after loss of clutches is very possible. Autumn migration begins in August, northern areas leave in end September – mid-October, southern in end October – late November.

200. **Slender-billed Gull** *Larus genei* Breme, 1840

Sporadically breeds in southern half of plains, north up to Sorkol lake (Lindeman, Zaletaev, 1977) and lower reaches of Kushum lake (Shevchenko *et al*., 1993) in area between Volga and Ural rivers, and on Tengiz lake. On dispersion and migration occurs in Naurzum Reserve (Bragin, Bragina, 2002) and east up to Balkhash lake, Irtysh valley (Dolgushin, 1962a) and Pavlodarskoye Trans-Irtysh'e (Kovshar, Khrokov, 1993). Some birds winter on Caspian Sea, to south of Mangyshlak.

Rare breeding migrant. Inhabits marine shores or salty large lakes, at once bred on fresh lake Kazoty (Biylikol' lakes group). Appears in April – early May, in small flocks of up to dozen birds. Breeds in dense colonies on sandy or with scarce vegetation islands or saline soil marshes, numbering up to several hundred pairs, together with Caspian, Gull-billed or Sandwich Terns, Avocet, Great Black-headed Gulls often. Nest is built in shallow hole lined with dry alga and grass, very close (at 20-30 cm) each of other. Clutches of 2-5 eggs in end April – May. After strong gale, nests with eggs to wash away, and birds repeat breeding. Both parents incubate and care for chicks. Flying juveniles recorded in end June – early July. Autumn migration in August – September, latest records in end October.

201. **Common Gull** *Larus canus* Linnaeus, 1758

heinei – breeds in northern half of plain Kazakhstan, south up to Dzhanybek (Lindeman, Zaletaev, 1975), Sorkol and Balykty lakes in area between Volga and Ural rivers (Shevchenko *et al*., 1993), lover reaches of Irgiz river and Zaysan depression. On migration occurs almost everywhere. One bird was observed 24 April 1981 on Markakol' lake (Berezovikov, 1989). In mid December 22 birds recorded on Sorbulak lake near Almaty (Belyalov, Karpov, 2002).

Common, in places abundant or rare breeding migrant. Inhabits river valleys or steppe fresh lakes with developed above-water vegetation and salty lakes with islands too. Arrives in end March – April, migration finishes in mid-May, in small flocks of up to 30-50 birds. Breeds singly or in colonies up to one thousand pairs, together with Black-headed Gull, Black Tern or Little Gull often. Nest is built on dry heaps of reed, hummocks, banks or islands from small reed pieces and grass, up to 5-10 m each of other.

Clutches of 2-3 eggs in end April – May. Both parent incubate for 25 days and care for juveniles, which hatch in May – June, and begin to fly at 35 days old, in mid-June – early July. Repeated breeding not rare after loss of clutches. Autumn migration in August – September, latest birds recorded in mid-October – mid-November.

202. **Lesser Black-backed Gull** *Larus fuscus* Linnaeus, 1758

Collected on Caspian Sea near delta of Volga and on eastern shore of Caspian Sea near Kara-Bogaz-Gol gulf 9 April 1935, and three were shot 21 June 1894 on Chagly lake, between Petropavlovsk and Kokchetav (Dolgushin, 1962a). On Syrdarya valley obtained 17 May 1925 (Spangerberg, Feigin, 1936).

Rare vagrant. Occurs from April up to end June.

203. **Steppe Gull** *Larus heuglini* Bree, 1876

barabensis – breeds in northern half of Kazakhstan from Volga – Ural area up to Irtysh valley. In Kustanay steppe on Toktas lake shot 20 June 1929 (Livron, 1938). Southern border of breeding area don't known. In Kustanay region repeatedly observed in early – mid October (Berezovikov, Erokhov, 2002). On Mangyshlak bay several birds seen 26 September and 1 October 2004 (Kovalenko, 2005a). In summer regularly recorded on Markakol' lake (Berezovikov, 1989a). On migration occurs to the south.

Common breeding migrant. Inhabits forest steppe and steppe lakes and big rivers. Appears in early April, latest migrants recorded in first decade of May. Breeds mostly in colonies of up to 25-30 pairs, which are formed at islands, in reed beds, on tussocks among shallow water or on shore, frequently with other gulls and terns, rare single nest can be found too. Nest is built from dry grass stems and reed lined with soft grass. Clutches of 1-3 eggs in end April – mid-May. Juveniles begin to fly in end June – mid-July. Autumn migration begins in August, latest birds observed up to freeze up of lakes.

204. **Caspian Gull** *Larus cachinnans* Pallas, 1811

cachinnans – *mantle is light-grey, legs yellow.* Breeds and occurs on migration in southern half of Kazakhstan from Caspian Sea up to Alakol' depression. Northern border of nesting area don't known. In mild winters recorded at Barsa-Kelmes on Aral Sea (Gistsov, 1978).

Abundant, in places common breeding migrant. Inhabits fresh or salty lakes, river deltas, marine banks. Appears in March – April, migration finishes in early May, in small groups or flocks of up to dozen birds. Breeds in small (on fresh water) or large (on salty lakes) colonies up to several hundred pairs, frequently with other gulls and terns. Nest is built on dry reed heaps in water or on ground of islands, from dry reed stems, leaves and lined with soft grass and feathers. Sometimes they have in height up to 30 cm, and 42-62 cm in base diameter. Clutches of 1-4 eggs in April – May, or in June – July, if first clutches loss. Both parents incubate for 25-30 days from first egg and care for juveniles, which begin to fly in end June – July. Autumn migration begins in August and continues until freeze up of reservoirs. In small numbers wintering on Caspian Sea and Syrdarya river to south of Chiili station.

205. **Glaucous Gull** *Larus hyperboreus* Gunnerus, 1767

hyperboreus – single birds collected on Caspian Sea, on Irtysh river (Dolgushin, 1962a) and in Ile valley close to Chilik 30 October 1969.

Rrare vagrant. Occurs on sea, rivers and lakes in October – November.

206. **Black-legged Kittiwake** *Rissa tridactyla* (Linnaeus, 1758)

Single birds met on Caspian Sea, Chu river 1 November 1928 and obtained on Issyk-Kul lake (Dolgushin. 1962a). One juvenile bird recorded 9 November 2002 on Tengiz lake (Koshkin, 2002) but this not proved.

Rare vagrant. Occurs on sea, lakes or rivers in October – November.

207. **Gull-billed Tern** *Sterna nilotica* (Gmelin, 1789)

nilotica – breeds in southern half of plain Kazakhstan, north up to Dzhanybek (Lindeman, Zaletaev, 1975) and Kamysh-Samarskiye lakes (Shevchenko *et al*., 1993) on area between Volga and Ural rivers, lower reaches of Ilek, Tengiz lake and Zaysan depression (Dolgushin, 1962a). Episodically nests in Naurzum Reserve (Bragin, Bragina, 1999). On dispersal and migration occurs everywhere, excepting mountain areas.

Common, in places rare breeding migrant. Inhabits marine islands, salty or fresh lakes and rivers with islands and low grassed territory nearby, where they search for food. Arrives in end March – April or in May on northern areas in small flocks. Breeding in dense colonies up to several hundred pairs, together with other gulls, terns and waders often. Nest is built in shallow hole without lining often, but sometimes several dry grasses are present, close one to other. Clutches of 2-3 eggs seen in early May – early July. Both parents incubate for 22-23 days and care for juveniles, which hatch in end April – August, and begin to fly at 28-35 days old. Independant juveniles recorded from end June. Repeated nesting after loss of clutches not rare. Autumn migration in August, latest birds recorded mid – end September, in southern areas some linger up to end October.

208. **Caspian Tern** *Sterna caspia* (Pallas, 1770)

Episodically breeds in southern half of plain Kazakhstan, north up to Kamysh-Samarskiye lakes (Shevchenko *et al*., 1993), lower reaches of Turgay (Khrokov *et al*., 1997), Tengiz lake and Zaysan depression. On dispersal and migration occurs everywhere, excepting mountain areas.

Common, in places rare breeding migrant. Inhabits marine islands, large salty lakes and fresh reservoirs with islands and fish on them or on nearby lakes. Appears in end April – mid-May in small flocks. Breeds in dense colonies on sandy, cockle-shell or pebbly islands with scarce vegetation or without them. Some colonies numbered up to several hundred pairs. They nest with big gulls, other terns and waders often. Nest is shallow (4-7 cm) hole without lining, or several dry grasses can be present, at 0.8-4.0 m each of other. Clutches of 1-3 eggs, in May – mid-July. Both parents incubate for 20-22 days and care for juveniles, which begin to fly at some more than a month old. Flying juveniles recorded in end June – early August. Repeated nesting after strong gale, when colonies on low islands to wash away, is not rare. Autumn migration in small groups of up to 5-7 birds begins in August, most leave breeding areas up to end August, linger singles recorded in mid-September or early October.

209. **Sandwich Tern** *Sterna sandvicensis* (Latham, 1787)

sandvicensis - breeds on Caspian Sea in Mangyshlak area and near Atyrau on Peshnoy island. Vagrants recorded 14 May 1883 near Orenburg, 21 June 1914 at Aral Sea and 25 June 1930 close to Syrdarya delta.

Rare breeding migrant. Inhabits marine low cockle-shell or sandy islands without, or nearly so, vegetation. Arrives in April. Breeds in dense colonies, at 10-30 cm each pair of other, together with Common and Little Terns, Slender-billed Gull often. Nest is shallow hole without lining. Clutches of 1-2, very rare 3 eggs in end June – July. Both parents incubate for 22-23 days, juveniles fledge at 35 days old, up to mid-August. On Mangyshlak intense migration to north observed at end July 1951 and 1952, but this not explained (Gladkov, Zaletaev, 1956). At autumn latest birds recorded in October.

210. **Common Tern** *Sterna hirundo* Linnaeus, 1758

hirundo *– the most light race, without brownish shade. Top of red bill black. Legs red. Male wing length 247-285 (268), bill length of males 43.0-49.0 (45.3) mm.* Breeds practically on all plain Kazakhstan. On seasonal migration occurs everywhere.

minussensis *– somewhat darker from above and from below than hirundo. Black colour on bill distributed more widely. Legs colour varies from red up to brownish-red. Male wing length 261-282 (273), bill length of males 40.0-48.0 (43.0) mm.* Probably breeds on Altai, in particular on Bukhtarma river (Berezovikov *et al*., 1992) and on Markakol' lake, where before was common on breeding, but since 1966 recorded only in summer and on migration (Berezovikov, 1989a). On migration can be met in eastern and southern areas of Kazakhstan.

Common breeding migrant. Inhabits rivers or lakes with sandy, pebbly or saline soil shores and scanty vegetation, and lakes with reed-beds more rare. Arrives in mid-April – early May in small flocks of 5-8, up to two dozen birds. Breeding in small groups or colonies sometimes up to several thousand pairs, with Little Tern, waders and gulls often, prefers islands near the shore. Nest is built on ground in shallow hole without lining or with several grass stems, but in reed-beds on heaps of old reed stems from dry reed leaves and other plants. Clutches of 2-3, rare 1 or 4-9 eggs (in last case several females lay in one nest) in end May – July. Both parents incubate and care for chicks. Flying juveniles recorded from end June. Repeated nesting after loss of clutches occurs often. Autumn migration is early, may be from end July. Most areas they leave up to end August – mid-September, some birds linger up to first decade of October.

211. **Little Tern** *Sterna albifrons* Pallas, 1764

albifrons – breeds and occurs on migration everywhere on reservoirs of plain Kazakhstan. One bird observed 25 August 1980 on Markakol' lake (Berezovikov, 1989a).

Common, in places rare breeding migrant. Inhabits sandy, pebbly or cockle-shell shore of rivers, sea and lakes without or with scarce vegetation, prefer islands near the shore. Appears in mid-April – May. Breeds in small colonies, of up to 50 pairs, together with waders or Common Tern often. Nest is shallow hole without lining or with several dry grasses. Clutches of 1-2, usually 3 eggs in end May – July. Both parents incubate and feed juveniles, which hatch from end June. Flying juveniles recorded from early July. Repeated nesting after loss of clutches occurs often. Autumn migration begins early, in late July. Breeding areas leave mostly in end August – early September, latest birds recorded in mid-September.

212. **Whiskered Tern** *Chlidonias hybrida* (Pallas, 1811)

hybrida – sporadically breeds and occurs on migration in southern half of plain Kazakhstan, north up to lower reaches of Ilek and Turgay rivers and Semipalatinsk. At once observed 20 June 2001 on Sary-Moiyn lake in Naurzum Reserve (Bragin, Bragina, 2002) and in Kurgaldzhino collected 16 June 1958 (Krivizkiy *et al*., 1985), undoubtedly bred at droughty summer of 2000 in Alakol' hollow (Berezovikov, 2001). Two nests were found in 31 May – 1 June 2003 at Tentek delta (Berezovikov, Erokhov, 2004).

Rare, in places accidental breeding migrant. Inhabits fresh lakes, pounds, river creeks with plenty above-water vegetation and open deep-water parts nearby. Appears in end April – May, migration finishes in early June. Breeding in colonies of 50-300 pairs usually together with White-winged Black Tern, Black-necked Grebe or Black Tern, or in separate pairs in colonies of other terns. Nest is built on water vegetation (on leaves of water lily, for example), heaps of reed stems or on tussocks among reed-bed, from dry grass. Clutches of 2-3 eggs in end May – early July. Both parents incubate for 18-20 days and care for juveniles, which begin to fly at more than 20 days old. Flying juveniles recorded in early July – August. Autumn migration is not clear, they leave breeding area in August, but some individuals linger up to early September.

213. **Black Tern** *Chlidonias niger* (Linnaeus, 1758)

niger – breeds and occurs on migration in plain Kazakhstan everywhere. Twice, 7-8 June 1976 and 31 August 1978, observed on Markakol' lake at 1450 m (Berezovikov, 1989a).

Common breeding migrant. Inhabits fresh lakes, pounds or rivers with slow current covered by surface vegetation, and on sedge marshes rare. In spring arrives in mid-April or May, in small flocks of 8-20, very rare up to 70-100 birds. Breeds in colonies of 10-100 pairs mostly, and in separate pairs very rare. Nest is built on small heaps of dry reed stems or on leaves of water vegetation (water lily, for example) from dry pieces of reed stems and reed mace, at 0.5-2.5 m each of other. Main part of nest is under water. Clutches of 1-4, usually 3 eggs from mid-May until early July. Such long period explained by repeated breeding after loss of clutches (out of Marsh Harrier mostly). Both parents incubate for 14-17 days and care for juveniles, which hatch in mid-June – early July and begin to fly at 20-25 days old. Flying juveniles recorded very rare in end June, mostly in July – early August. Autumn migration early, most breeding areas they leave until end of August, some birds linger up to mid-September.

214. **White-winged Black Tern** *Chlidonias leucopterus* (Temminck, 1815)

Breeds in northern half of plain Kazakhstan, south up to Kamysh-Samarskiye lakes and Tuma between Volga and Ural rivers (Shevchenko *et al*., 1993), northern Caspian Sea area (Berezovikov, Gistsov, 2001), lower reaches of Irgiz river, Balkhash-Alakol' (Grachev, 1968) and Zaysan depressions (Survillo, 1968). Probably breeds also on lakes of Emba delta (Neruchev, 1968). On migration recorded everywhere.

Common, in places rare breeding migrant. Inhabits shallow water of steppe lakes, marshy meadows, steppe rivers with slow current, well covered by surface vegetation. Arrives in early – mid-May in small flocks of 10-20, up to 30 birds rare. Breeding in colonies of 10-20, up to 200 pairs, together with Little Gull especially, but with Black-necked Grebe and waders too. Nest is built on dry reed heaps, tussocks or among marsh grass from dry grass, at 1-3 m one of other. Clutches of 1-4, usually 2-3 eggs in end May or June. Flying juveniles recorded in mid-July – early August. Autumn migration early, mostly in August, some birds linger until mid-September.

PTEROCLIDIFORMES

215. **Black-bellied Sandgrouse** *Pterocles orientalis* (Linnaeus, 1758)

arenarius – breeds and occurs on migration in southern half of plain Kazakhstan, north up to north-eastern border of Volzhsko-Ural'skiye sands (Bidashko, Dzhubanov, 1999), Inderskiye Mts. (Shevchenko *et al*., 1993), upper reaches of Uil, Akkumsagiz sands in Sagiz valley (Grachev, Eszhanov, 1999), lower reaches of Turgay, Arkarly area, near Irtysh river at Maykain (Solomatin, 1999b), in foothills of Monrak ridge (Dolgushin, 2002) and Zaysan depression. Dispersing birds observed up to Elton lake (Lindeman, 1986), on Kushum river near Telnov village (Shevchenko *et al*., 1993) in area between Volga and Ural rivers, in Naurzum Reserve (Bragin, Bragina, 2002), near Tengiz lake (Andrusenko, Khrokov, 1981) and Semipalatinsk. Common on Ustyurt (Plakhov, 1999). In small numbers winters in Kyzylkum desert on not snowy areas, on Ustyurt (Vinogradova, 1997) and Barsa-Kelmes island (Gistsov, 1978).

Common, in places rare breeding migrant. Inhabits plain or little hilly clay deserts with wormwood associations, prefer crushed stone or pebbly places, sandy deserts with wormwood-grasses associations and saline soil deserts, with fresh or salty water not far as 60-80 km. In such habitat lives on mountain broad valleys, up to 1400-1800 m. Appears in end February – mid-April, in pairs, small groups and flocks of up to 20-30 birds. Breeding in separate pairs no less, than 150-200 m each of other. Nest is shallow hole without lining. Clutches of 3, rare 2 eggs in end April – mid-August. Both parents excavate nesting hole, incubate (female at day, male at night) and care for chicks. Regularly flight for water and at nearby water can be met from late morning up to evening. Flying juveniles recorded from mid-July, and they begin to fly for water, when distal primaries not fully grown jet. A brood of feathered, but not flying juveniles recorded 10 October 1978. Two broods per season. As up to 92% nests loss out of predators, repeated breeding very common. After breeding is finished, they joined in large flocks, up to several hundred individuals, and disperse widely. Autumn migration in September – October mostly, some birds linger up to mid-November.

216. **Pin-tailed Sandgrouse** *Pterocles alchata* (Linnaeus, 1766)

caudacutus – before bred in southern parts of plain Kazakhstan, north up to lower reaches of Emba river, area adjacent to Aral Sea from north, Dzhezdy mouth and Chu valley (to east up to Kurty river). Now it occupies deserted areas from the Aral Sea up to Karatau foothills near Kyzylkol' lake (in 2000), eastern border of Muyunkum desert, western and central Betpak-Dala, to north up to 47 parallels (Levin, 1991; Kovshar, Levin, 1993). Since 1994 begin occurs along of Taukum sands from Aksuek up to Kolshengel, and its number with years increased; in 1999 it was numerous (Berezovikov, Gubin *et al*., 1999). Dispersing birds recorded in August 1907 near Kamysh-Samarskiye lakes (Shevchenko *et al*., 1993), in upper reaches of Temir and lower reaches of Irgiz river, in Kurgaldzhino area (Koshkin, 2002, 2003). Usually migrate for winter, but one bird was observed at Kolshengel 8 December 1995 (*per* O.Belyalov).

Common, in places rare breeding migrant. Inhabits sandy hilly desert, which alternate with clay and saline soil parts, not very far from water. Appears in end March – April. Breeding in colonies, at 10-30 m one pair from other. Nest is shallow hole on sand or clay, under grass often. Clutches of 3 eggs in early May – mid-August. Both parents incubate and care for juveniles. Two broods probably. Regularly flight for water and at nearby water occurs from late morning up to evening. At August they join in large flocks, up to two dozens thousand birds, and disperse on areas with plenty food. Autumn migration begins in August, most birds leave in September – early October, though in small numbers linger until early November.

217. **Pallas's Sandgrouse** *Syrrhaptes paradoxus* (Pallas, 1773)

Breeds and occurs on migration in southern half of plain Kazakhstan, excepting Southern Ustyurt and sandy deserts, north up to Taysogan sands in area adjacent to Caspian Sea from north (Shevchenko *et al*., 1993), in Kurgaldzhino (Khrokov *et al*., 1978; Krivizkiy *et al*., 1985) and steppe between Semipalatinsk and Karaaul (Berezovikov, Kovshar, 1991). On dispersal small flocks recorded in Volzhsko-Ural'skiye sands and lower reaches of Kushum river (early August 1957, 18 and 30 May 1964, 17 October 1975; Shevchenko *et al*., 1993), in middle current of Ural valley (20 and 26 April 1976; Gubin, Levin, 1980), lower reaches of Ilek, in Naurzum Reserve (in 1975, 1976, 1979, 1980, 1984, 1986 and 1998; Bragin, Bragina, 2002), in steppe adjacent to Altai Mts., Bukhtarma valley (Samusev, 1977), and also on Markakol' lake (Berezovikov, 1989a). Wintering in small numbers in Kyzylkum, near

Syrdarya valley, on Barsa-Kelmes (Gistsov, 1978) and two birds recorded in winter 1962/63 at desert near Emba river (Neruchev, 1968).

Common, in places rare breeding migrant. Inhabits plain or hilly deserts and half-deserts with dense soil (clay, crushed stone or saline soil) with scarce vegetation, and sometimes southern steppe with low vegetation, not very far from water. Arrives in end February – March, sometimes in early April. Nest is shallow hole on open ground without lining, under cover of grass sometimes. Clutches of 2-3 eggs, in end March – mid-July. Both parents incubate and care for juveniles. Two broods probably. Regularly flight for water, where occurs from late morning up to evening. Flying juveniles recorded from end May. Autumn migration in September – early October. Massive flight recorded at Dzhungarian "Gate", where birds fly to China. Latest observed in early November.

COLUMBIFORMES

218. **Rock Dove** *Columba livia* Gmelin, 1789

livia *– general colour somewhat darker. Rump white, width of this white strip 40-60 mm.* Breeds in northern half of Kazakhstan, south up to Mangyshlak, Mugodzhary ridge and Zaysan depression, where intergradates with ***neglecta***.

neglecta *– general colour somewhat lighter. Rump usually greyish-blue-grey, some lighter, than back, less often so dark, as back and very rare rump white. In the latter case width of white strip usually 20-40 mm.* Breeds in southern half of Kazakhstan, north up to Mangyshlak, Mugodzhary ridge and Zaysan depression, where intergradates with ***livia***.

Common, in places rare resident. Inhabits rocky cliffs in low and high mountains up to 2000-2500 m, caves, clay precipices, chinks, old grave monuments, villages and towns, but here hybridises with Domestic Dove. Breeds in separate pairs or colonies up to 25-30 pairs. Breeding in clay holes, rock hollows *etc*, nest is built from thin twigs. Clutches of 2 eggs in April – July. Both parents incubate and care for chicks. Two or three broods per season. For food they regular fly in flocks to cereals fields, at morning and in evening.

219. **Blue Hill Pigeon** *Columba rupestris* Pallas, 1811

turkestanica – breeds in Kazakhishe upland (including Kalmyk-Kyrgan and Kyzyltau Mts.; Chelzov-Bebutov, 1978a), in Kalbinskiy Altai and on Southern Altai, in Saur, Monrak, Tarbagatay ridges, Dzhungarskiy Alatau and Tien Shan. On Altai, where hybridise with Rock Dove, it almost disappeared (Berezovikov, Scherbakov, 1990a).

Common, in places rare resident. Inhabits clay precipices and rocky cliffs in low mountains, but in Altai up to 1500-1800 m and in Tien Shan above 2000-2700 m. Breeding in separate pairs or small colonies often. Nest is built in hollows, on ledges, in caves or cavities between rocks from thin twigs. Clutches of 2 eggs in April – June. Two broods probably per season. Both parents incubate and care for chicks. From late summer broods join in flocks, sometimes up to several hundred birds, and regular fly for food on cereal fields and mountain slopes.

220. **Stock Dove** *Columba oenas* Linnaeus, 1758

oenas *– general colour darker, under parts more grey-blue-grey, less ash-blue-grey than* ***yarkandensis****; back usually with admixture of brown. Male wing length 196-228 (212), female 200-215 (208) mm.* Breeds in middle current of Ural valley and probably its lower reaches from Uralsk up to Chapaevo (Shevchenko *et al*., 1993). Probably nests in places in Northern Kazakhstan. In summer observed in Shortandy area (Berezovikov, Kovalenko, 2001), Western Altai and Bukhtarma valley (Starikov, Zikh, 1990; Scherbakov, 1989a, 1995b), between Ust-Kamenogorsk and Ridder (16 July 2001; Berezovikov, Rubinich, 2001), in Semipalatinsk vicinities (Berezovikov, Kovshar, 1991). A nest found 21 July 2001 at clay cliff on Orta-Terekty canyon, Dzhungarskiy Alatau (Berezovikov, Levin, 2002b). On migration occurs everywhere. In winter a flock of 12 birds observed 18 December 1963 in lower reaches of Emba (Neruchev, 1968), near Krasnokutsk village (Solomatin, 1999a), in Bukhtarma valley (Berezovikov *et al*., 1992) and since 1988 in Almaty area, where their numbers grows (Karpov, 1991; 1995). In small numbers wintering in southern and south-eastern Kazakhstan.

yarkandensis *– general colour lighter, under parts more ash-blue-grey, less grey-blue-grey than* ***oenas****; brown colour on back absent or nearly so. Male wing length 207-230 (220), female 205-221 (214) mm.* Sporadically breeds in Tien Shan (Pskem, Charyn valleys, and Bartagoy, but in last place

disappear after trees were cut off and reservoir was established); seasonal distribution not well known. May be wintering near Almaty birds belong to this subspecies.

Rare breeding migrant and numerous on migration. Inhabits oak-elm-willow flood plain or mixed forests, and willow-poplar-ash-maple groves. On migration, occurs in open landscape, stubble fields, river valleys. Arrives in end March – April in small flocks of 5-20 birds, migration finishes in early May. Breedind in separate pairs, in suitable habitat not far each of other. Nests in tree holes (on south in Asiatic Poplar). Clutches of 2 eggs. No specific data about breeding for Kazakhstan existed. Autumn migration begins in end August. Mass flight occurs in Ural valley and in foothills of Western Tien Shan, where flocks of several hundred birds are not rare. Adults and juveniles migrate in the same flocks. Latest birds recorded in end October.

221. **Yellow-eyed Stock Dove** *Columba eversmanni* Bonaparte, 1856

Breeds and occurs on migration in south and south-east Kazakhstan, north to lower reaches of Syrdarya, Sarysu valley at ravine Aksay, to area adjacent to Balkhash lake from south and Zaysan depression (Dolgushin, 1962c). Two birds recorded at early May 2003 in Karatal valley (Berezovikov, Levinsky, 2003). In 31 May 2002 one bird in Tarbagatay, but breeding not proved (Berezovikov, Levin, 2002d). In 18-19 July 1947 several birds recorded on Mangyshlak (Dolgushin, 1948b). Its numbers sharp lowered in 1973-1974 when Kapchagay reservoir established and large area of its breeding disappeared. Up to present very few birds recorded at Chokpak pass in autumn. But 30 April 2001 on Bakanas – Akkol road on 50 km 20 Yellow-eyed and three Stock Doves recorded on concrete poles with oupen upper part, many of them display (Belyalov, Karpov, 2002b). As birds begin to use new breeding place, we hope that their numbers increased in near future.

Rare breeding migrant. Inhabits Asiatic poplar groves and riparian forests or clay precipices and old Kazakhishe grave monuments on plain. On migration occurs in open habitat, stubble fields and forest-belts. Arrives in April in flocks of up to dozen birds. On Chokpak Pass caught 24 March 1974 – 19 May 1990. Breeding in separate pairs or loose colonies up to 15-20 pairs. Nests in tree or precipices hole, sometimes several thin twigs are added. Clutches of 2 eggs, in May – mid-July. Both parents incubate and feed juveniles. Two broods, repeated breeding after loss of nest is not rare. Fledglings recorded up to beginning September. Autumn migration begins in August in flocks of 20-50 individuals. Adults and juveniles migrate in the same flocks. On Chokpak Pass caught 28 August 1974 – 1 November 1978.

222. **Wood Pigeon** *Columba palumbus* Linnaeus, 1758

palumbus *– general colour darker. Neck spots large, pure white. Male wing length 237-262 (249) mm.* Breeding at Dzhanybek (Lindeman, 1971) and Urda, also in Ural valley south up to Atyrau, in island woods in middle current and forest-belts on Kushum river (Shevchenko *et al*., 1993). In places, breeds in Northern Kazakhstan, in particular at Naurzum (Gordienko, 1983; Bragin, Bragina, 2002), Kokchetav forest (Kovshar, 1996a) and Karaganda area (Berezovikov, Kovalenko, 2001). In summer, observed in Pavlodarskoye Trans-Irtysh'e (Kovshar, Khrokov, 1993), on Irtysh and Ulba valleys (Scherbakov, 1978b). On migration occurs in western half of Kazakhstan, east up to Kurgaldzhino (Andrusenko, Khrokov, 1981; Krivizkiy *et al*., 1985), Chulak-Espe (Kovshar, Levin, 1993) and middle current Syrdarya valley. Rare recorded in winter (28 December 1975, 19 February 1992 and 25 March 1978) near Ust-Kamenogorsk (Starikov, 1999a).

casiotis *– general colour lighter. Neck spots smaller and mostly with ochre shade. Male wing length 238-269 (256) mm.* Breeds in Tien Shan and Karatau (Kolbintsev, Chalikova, 2002a), in Dzhungarskiy Alatau and its foothills, up to lower reaches of Tentek river (Berezovikov, Erokhov, 2004). Here occurs during migration too.

Numerous, in places common breeding migrant. Inhabits elm-poplar-oak flood plain forests, steppe birch-asp or mixed island forests, groves and old forest-belts with elm prevalent, deciduous apple and coniferous mountain forest at 1000-2500 m. Appears in mid-March – April in flocks of one-two dozen birds. Migration finishes in early May. Breeds in separate pairs, at 50-100 m each of other. Nest is built in deciduous (elm, poplar, apple) or coniferous (spruce, juniper) trees at 1.2-20 m above ground from thin twigs. Clutches of 2 eggs end April – early July; latest clutches found end August. Both parents incubate (mostly female) for 17-18 days and feed juveniles, which fledge at some more then 20 days old. Two broods, repeated breeding after nest loss is common. In late summer broods join in large flocks of to several hundred birds and feed on stubble fields often. Autumn migration begins in September, latest birds observed mid-October.

223. **Snow Pigeon** *Columba leuconota* Vigors, 1831

In Zailiyskiy Alatau highland at Kumbel Mt. three birds observed 21 August 1946 and singles 29 August 1948 and 2 August 1949 (Stegman, 1954). In Elchin-Buyiryuk Mts., between Ketmen ridge and Terskey Alatau, a pair was observed in 25 April 1956 (Zhyrnov *et al*., 1978). A recent find of its nest in Kyrgyzstan on northern slopes of Chonalayskiy ridge and repeated records of birds in various points of Inner Tien Shan (Shukurov, 1988) make observations of B.K.Shtegman not by such improbable, as it was represented to I.A.Dolgushin (1962c).

Very rare species with uncertain migratory status. In Kyrgyzstan, nest discovered 14 June 1985 on upper border of forest belt at 3200 m, with bushes (honeysuckle, dog rose, juniper, meadow-sweet, rowan-tree) and rare small clumps of spruce. Nest from thin twigs with 2 eggs was in niche of rock cliff at 6-8 m above river (Shukurov, 1988).

224. **Collared Dove** *Streptopelia decaocto* (Frivaldszky, 1838)

decaocto *– sizes smaller, male wing length 164-173 (167.8), female 160-174 (167.6) mm. General colour a little darker, belly is bluish-grey, without pinkish shade. White tip of outer web of distal rectrix the same length or nearly so, as on inner web.* At recent years breeding between Volga and Ural rivers (Urda, in 1981, Furmanovo, in 1984), Ural valley from Atyrau (in 1974) up to Uralsk (in 1976; Blagosklonov, 1978, in 1974), and also Darinsk (in 1978), Aksay (in 1986) and Dzhambeity (in 1988; Shevchenko *et al*., 1993), Aktobe (in 1973; Blagosklonov, 1978), Kustanay (from 1987; Bragin, Bragina, 2002), Irgiz village (in 1986; Khrokov *et al*., 1990) and in Kurgaldzhino from 1993 (Andrusenko, 2002). In 2004 several birds recorded 12 and 15 May 2004 at western chink of Usturt (Levin, Karyakin, 2005) The expansion of this race passed and in the south of Kazakhstan, from Tashkent, whence penetrated in Chimkent and Taraz. One bird was observed 16 April 1982 in lower reaches of Sarysu river on weather station Zlikha (*per* A.M.Sema).

stoliczkae *– sizes larger, male wing length 175-191 (179.5), female 169-188 (178.6) mm. General colour a little paler, pinkish shade of breast is distributed on belly also. White tip on outer web of distal rectrix much shorter, than on inner web.* Occupies south-eastern Kazakhstan, for last years was settled west up to Otar settle, on foothills of Dzhungarskiy Alatau up to Uch-Aral and Obukhovka, has occupied Zaysan depression and on Irtysh valley has penetrated up to Shemonaikha village (Gavrilov *et al*., 1982), in 1981 appeared in Pavlodar, in 1985 in Ermak, in 1990 at Zhdanovo near Krasnokutsk (Solomatin, 1999a). On Southern Altai appeared in 1975, and in 1984 reached Uryl village (*per* S.L.Sklyarenko), in 15 July 1989 Katon-Karagay (Berezovikov, Starikov, 1991). The tendency of this race to be settled mainly in northern direction was noticed earlier (Selevin, 1932).

Common, in places rare resident. Inhabits villages or towns, in which prefers areas with one-floor houses. Breeding in separate pairs, not far one of other often. Nest is built on trees or house niches from thin twigs. Clutches of 2 eggs from March. Both parents incubate and feed juveniles. Per a year two or probably three broods. In autumn concentrates at elevators, zoos, farms and other places with plenty of food, sometimes in small flocks fly to nearby stubble fields. Winter is a critical period for this bird, which can't survive on natural food.

225. **Turtle Dove** *Streptopelia turtur* (Linnaeus, 1758)

turtur *– general colour darker. Borders of scapulars and upper wing coverts more dark, ochre-brownish; rump and upper tail coverts dark-grey, crop area and breast lighter than* ***arenicola****.* Breeding in northern half of Kazakhstan, south up to coast of Caspian Sea, lower reaches of Turgay river and Zaysan depression. On migration occurs everywhere. Once in autumn observed in Kurgaldzhino in September 1948 (Vladimirskaya, Mezhennyi, 1952). It migrates on Ural valley mostly, at other places occurs very rare.

arenicola *– general colour lighter. Borders of scapulars and upper wing coverts lighter, brownish-ochre; rump and upper tail coverts light grey; crop area and breast darker than* ***turtur****.* Breeding in southern half of Kazakhstan, north up to Emba valley, lower reaches of Turgay river, Betpak-Dala and Zaysan depression. Here occurs on migration too.

Common, in places numerous breeding migrant. Inhabits mostly various deciduous, or rare, pine forests, shrub patches in open country, forest-belts, gardens and forested villages and towns also. Water source nearby is necessary. Arrives in end April – mid-May in flocks of several dozen, but sometimes up to one hundred birds. Migration at Chokpak Pass finishes in mid-May. Breeds in separate pairs, not far each of other. Nest is built on tree or bush at 0.5-6 m (rare 15 m) above ground from thin twigs. Clutches of 2 eggs found in mid-May – mid-July. Both parents incubate for 13-14 days and feed juveniles, which

fledge at near 20 days old. Per season two or probably three broods in southern areas, but one only in northern ones. Repeated breeding after loss of nest is common. Flying juveniles recorded from end June. Autumn migration begins in end July – August. Adults and juveniles migrate in the same flocks of 10-25 sometimes (on Mangyshlak) up to 200-300 birds, together with Rufous Turtle Dove often. Latest birds recorded in end September – early October.

226. **Oriental Turtle Dove** *Streptopelia orientalis* (Latham, 1790)

meena *– general colour lighter. Nape and back grey - brown, borders of upper wing coverts and scapulars ochre-rusty, under tail coverts, tips and outer webs of distal rectrixes white, middle of belly is white also.* Breeding in Northern Kazakhstan, south up to middle part of Mugodjary ridge (Urkach forest), where recorded 20 June (Kovshar, Davygora, 2005), Shortandy area (Berezovikov, Kovalenko, 2001), Kazakhishe upland, Irtysh valley between Pavlodar and Ust-Kamenogorsk, Southwest Altai, Kalbinskiy Altai, Saur, Tarbagatay, Dzhungarskiy Alatau and Tien Shan, where up to 2500-2600 m rise (Dolgushin, 1962c). Nests in Almaty Botanical garden and probably in foothills of Dzhungarskiy Alatau near Dzhansugurov village. Common during migration in Naurzum Reserve, where regularly observed in summer, and breeding not excluded (Bragin, Bragina, 2002). On other territory, west to lower current of Ural valley and Ustyurt (Gubin *et al*., 1977; Gubin, 2002a), rare occurs on migration.

orientalis *– general colour darker. Nape dark-grey, back somewhat darker and greyer. Borders of upper wing coverts and scapulars dark-rusty, under tail coverts, tips and outer webs of distal rectrices bluish-grey. Middle of belly with light-wine shade.* On Chokpak two males obtained 5 May 1990. Very seldom occurs on migration in eastern and south-eastern Kazakhstan.

Numerous, in places common or rare breeding migrant. Inhabits coniferous, mixed or deciduous forests on plains and in mountains, up to 1600 (Altai) – 2600 (Talasskiy Alatau) m. Arrives in mid-March – mid-May, migration finishes in end May – mid-June. Breeds in separate pairs. Nest is built on bush (hawthorn, honeysuckle, dog rose) or tree (spruce, pine, fir, juniper, birch, asp, willow, apple, apricot) from thin twigs at 1-4, up to 10 m above ground. Clutches of 2 eggs found in mid-May – mid-July. Two broods probably and repeated breeding after nest loss is common. Both parents incubate for around 20 days and feed juveniles. After breeding is finished, broods join in flocks and disperse on stubble fields and other places with rich food. Autumn migration begins in August in flocks of several dozen birds. Mass flight occurs in end August – first half of September. Latest birds recorded in end September – mid-October, some individuals linger up to end November – early December.

227. **Laughing Dove** *Streptopelia senegalensis* (Linnaeus. 1766)

ermanni – for last years widely settled in southern and eastern Kazakhstan, that was promoted by its introduction in Almaty at 1960 (Borodikhin, 1968). Now to north nests up to Aralsk and Betpak-Dala (Chulak-Espe, Koyandyozek, Dzhambulgora; Kovshar, Levin, 1993); in Kurgaldzhino appeared in 1993 (Andrusenko, 1984, 1986 a), in foothills of Tien Shan and Dzhungarskiy Alatau it reaches up to Zaysan depression, Southwest Altai (Ridder, Akzhar, Shemonaikha, Bolshenarymskoye, Alekseyevka, Katon-Karagay, Kurchum) and Semipalatinsk (Gavrilov *et al*., 1982; Berezovikov, Starikov, 1991). In July 1981 two birds seen at Karaganda airport. In 1965 appeared in Pavlodar, where it was common till 1987 (Solomatin, 1999a). Dispersal birds observed near Orenburg (Dolgushin, 1962c), in Naurzum Reserve (in 1987, 1993, 1994, 1995, 1998 and breeds now; Bragin, Bragina, 2002), on Tengiz lake 16-23 May 1978 (Andrusenko, Khrokov, 1981).

Numerous, in places rare resident. Inhabits villages and towns, prefers sections with one-floor houses. Breeding in separate pairs, not far each of other. Nest is built in buildings mostly, and on trees, bushes and vine rod rare, from thin twigs. Clutches of 2 eggs from end February – March until October. Both parents incubate and feed juveniles. Next clutches begins 1-3 days before fledge of juveniles, which later fed by male, but sometimes they return to roost with female in new nest. Two, three or more broods per season. In late summer and in autumn birds join in small flocks and concentrate on elevators, mills and other places with plenty of food. Occurs outside of villages very rare. Winter is a critical period for this bird, which can't survive on natural food.

Note. In spring 1960 -1961 near 500 birds successfully introduced in Almaty from Tashkent and now it dispersed widely.

CUCULIFORMES

228. Common Cuckoo *Cuculus canorus* Linnaeus, 1758

canorus *– general colour darker than* ***subtelephonus****. Sizes more. Male wing length 212-240 (225), female 195-227 (212) mm.* Breeding both on plains and in mountains of northern half of Kazakhstan, south up to lower reaches of Ural river, northern coast of Aral Sea, lower reaches of Syrdarya valley, Balkhash and Alakol' lakes. On migration occurs to the south of this area.

subtelephonus *– general colour lighter than* ***canorus****. Sizes lesser. Male wing length 206-224 (216), female 191-229 (205) mm.* Breeding both on plains and in mountains of southern half of Kazakhstan, north up to lower reaches of Ural river, northern coast of Aral Sea, lower reaches of Syrdarya valley, Balkhash and Alakol' lakes. Here occurs on migration too.

Common breeding migrant. Inhabits forests and meadows of river valleys, deciduous, mixed and coniferous forests, plains or mountains up to 2000 (Altai) – 3000m (Tien Shan), lakes with reed-beds, parks and gardens. Arrives in mid-April – May. Last migrants recorded early June. Breeding coincides with reproductive period of its main hosts (Warblers, Yellow, White, Masked and Grey Wagtail, Bluethroat, Turkestan Red-tailed Shrike, Long-tailed Shrike, Stonechat, Himalayan Rubythroat, Severtzov's Tit-warbler, Black-throated and Brown Accentor, Red-headed Bunting). Cuckoo eggs recorded from mid-May up to early July, fledglings in end June – early August. At once, we observed that Cuckoo searched nest of Himalayan Rubythroat with heavy incubated clutches and eat all eggs. The same behaviour observed in Ural valley with two nests of White Wagtail (Levin, Gubin, 1982). At such manner, Cuckoo stimulates repeated breeding of its host! When Rubythroat built new nest nearby and lay, one Cuckoo eggs recorded in them. Autumn migration begins in end July – August, latest birds recorded in end September – mid-October, at Chokpak Pass singles ringed 20 September 2004 and 4 October 2000.

229. **Oriental Cuckoo** *Cuculus saturatus* Blyth, 1843

horsfieldi – breeds in taiga forests of Southwest Altai (Korelov, 1970a), in pine forests of Kalbinskiy Altai (Egorov, Borisov, 1979), probably in Saur and Tarbagatay ridges (Sushkin, 1925; Khakhlov, 1928). In summer observed in tape pine forest of Pavlodarskoye Trans-Irtysh'e (Kovshar, Khrokov, 1993). On migration occurs on plains only. Recorded on Mangyshlak (11 May 1965), lower current of Ural valley (25 May 1907), close to Tashkent (5 and 14 May 1908) and Turkestan (3 May 1909), on Syrdarya valley nearby of Chinaz (2 May 1907 and 29 May 1911), in Karatau foothills and Borolday (17 May 1959 and 14 May 2000), on Irgiz valley (10 May 1898), in Naurzum Reserve (18 May 1934) and close to Kustanay, on Selety-Teniz lake, on Irtysh valley near Semipalatinsk. One bird obtained by V.V.Filatov on western shore of Alakol' lake at 13 May 1968. No records in Tien Shan and Dzhungarskiy Alatau.

Rare breeding migrant. Inhabits spruce, fir forests, marshy birch groves, subalpine larch forests at 1500-1900 m. On migration occurs in shrubs or forests on plains. Arrives early May – early June, migration finishes mid-June. Main hosts are Yellow-browed and Greenish Warblers. Cuckoo eggs recorded in end of May – early July, fledglings in mid-July – mid-August. Adults leave breeding places before mid-July, juveniles in end August. On plain recorded in early September.

STRIGIFORMES

230. **Striated Scops Owl** *Otus brucei* (Hume, 1873)

Breeds on area adjacent to Aral Sea from east and on Syrdarya valley. Repeated meeting in spring (4 May 1939) and autumn (6 September 1973) in Dzhabagly settle and (12 April – 7 May and 6 September – 24 October) at Chokpak Pass (Kovshar, 1966; Gavrilov, Gistsov, 1985) confirm assumption of V.F.Gavrin (1962) about breeding in Karatau and Western Tien Shan. In 1996 nest with eggs found in lower reaches of Ile river (Berezovikov, Panov, 1999), and in 1996-1999 in Kurty mouth and Zhelturanga grove of Ile valley (Berezovikov, Gubin *et al*., 1999). Recorded on voice in Ile valley near Malay-Sary ridge end May 2002 (Gavrilov, 2002). At once shot close to Almaty 14 April 1905.

Rare breeding migrant. Inhabits riparian forests, groves, gardens and forest-belts. Arrives in end March – April. Breeding in separate pairs. Nests in tree holes or old Magpie nests, once in hole of building. Clutches of 4-6 eggs in second half of April – May. Female incubates only, male feed her and take part in brood rearing. Fledglings recorded from end June. Juveniles collected in end July – early August not changed contour feathers jet. Autumn migration begins in September, latest birds recorded in end October, on Chokpak Station one bird ringed 24 October 2000.

231. **Eurasian Scops Owl** *Otus scops* (Linnaeus, 1758)

scops *– general colour darker, more brownish-grey, less grey; rusty shade, especial on the upper parts well developed; dark picture on upper parts less contrasts with basic background; whitish stripes on nape and shoulders less developed than* ***pulchellus****. Saturation of rusty shade on upper parts considerably varies individually from light up to dark.* Breeding on Ural valley. Probably, to this form concerns isolated breeding in Central Mugodzhary ridge (Varshavskiy *et al*., 1977) and in Mangyshlak (Levin, Karyakin, 2005).

pulchellus *– general colour lighter, more grey, less brownish; rusty shade developed poorly or nearly absent; dark picture of upper parts more contrasts with basic background; whitish strips on nape and shoulders more developed than* ***scops****. The individual variability of feather colour less developed.* Breeding at Naurzum Reserve (Bragin, Bragina, 2002), Northern Kazakhstan, Pavlodarskoye Trans-Irtysh'e, Kazakhishe upland, Southwest Altai, Saur, Tarbagatay, Dzhungarskiy Alatau, Tien Shan, Karatau ridge and Semirechye. In summer observed in Monrak and Saur ridges (Scherbakov, 1989a). On other territory occurs on migration.

Numerous, in places common or rare breeding migrant. Inhabits plain deciduous, mixed or pine forests, groves, steppe forest islands, in mountains low belt of deciduous forest (apple, apricot, asp, elm) only, in desert riparian forest, gardens, old forest-belts, villages and towns. Arrives early April – May, migration finishes early June. Breeding in separate pairs. Nests in tree holes, starling-houses (Starling or Mynah expel often), old nests of Magpie and other species at of 2-8 m above ground, rare holes in clay precipice or among stones are used too, and as exception build nest from thin twigs (like Turtle-dove) by itself. Clutches of 3-6 eggs in April – late June. Repeated nesting after loss of clutches occurs often. Nuptial call of males in Almaty can be heard up to early July. Female incubates from first egg for 25 days mostly, but male helps her too. Both parents feed juveniles, which fledge in July – end August. Autumn migration begins in early August. At Chokpak Pass most birds migrate in first decade of September and first half of October, latest recorded in end October.

232. **Snowy Owl** *Bubo scandiacus* (Linnaeus, 1758)

Occurs in open landscapes from northern border to south up to Urda village and Kamysh-Samarskiye lakes (Shevchenko *et al*., 1978), Makhambet village in Ural valley (Poslavskiy *et al*., 1964), on Mangyshlak, area adjacent to north of Aral Sea, Syrdarya valley and in northern foothills of Tien Shan (Almaty). Earlier occasionally observed in Markakol' lake area (Polyakov, 1912), in foothills of Western Altai and in Zaysan depression.

Rare, locally accident winter visitor. Occurs in open landscape near forest islands, in river valleys with bushes and trees, in steppe or ploughed fields, with telegraph or electric line poles often. In autumn appears in end October – November. In spring latest birds recorded in April – early of May.

233. **Eagle Owl** *Bubo bubo* (Linnaeus, 1758)

ruthenus *– basic colour rusty-yellow with developed greyish shade. Dark picture on upper- and under parts has brownish-black colour. On wing coverts whitish spots developed. Dark picture on upper parts (head, back and shoulders) occupies smaller space, than basic background. Male wing length 430-468 (446), female 471-515 (485) mm.* Occupies northern part of Volga-Ural rivers area and middle current of Ural valley. Probably this race breeds in Naurzum Reserve.

sibiricus *– the most light race. Basic colour ochre-whitish. Dark picture on upper- and under parts developed poorly and has black-brown colour. On wing coverts and scapulars large whitish spots well developed. Dark picture on upper parts (head, back and shoulders) considerably reduced. Male wing length 438-465 (451), female 472-515 (492) mm.* Occurs in winter at Northern Kazakhstan, south probably up to Kurgaldzhino 19 November 1967, 24 November 1968, end October 1969, 4-15 November 1974, 23 October and 2 November 1977, 12-13 October 1978, 23 September - 15 October 1980 (Khrokov *et al*., 1977; Krivizkiy *et al*., 1985).

yenisseensis *– somewhat darker than* ***sibiricus****. Basic colour ochre-greyish. Dark picture on upper- and under parts well developed and has brownish-black colour. Dark picture on upper parts (head, back and shoulders) occupies smaller space, than the basic background, irregular and does not form continuous dark sets. Males wing length 443-468 (456), female 473-518 (487) mm.* Occupies Southwest Altai, Kalbinskiy Altai, Saur, Monrak ridges and probably Tarbagatay ridge.

turcomanus *– basic colour pale, yellowish-ochre. Dark picture on upper- and under parts paler, less developed and more shattered than* ***interpositus****. Dark longitudinal picture on under parts not distributed to belly. Male wing length 420-468 (443), female 470-492 (482) mm.* Breeds from southern

part of Volga-Ural area east up to Zaysan lake and headwaters of Irtysh river, south up to Ustyurt, lower reaches of Syrdarya and area adjacent to Balkhash lake from north.

omissus *– basic colour ochre-yellow, more pale; dark picture on upper- and under parts less developed than* ***turcomanus****. Dark shaft streaks on nape very narrow. Dark longitudinal picture on under parts not distributed to belly. Dark cross picture on belly and flanks thinner and paler than* ***turcomanus****. Male wing length 404-424 (415), female 425-460 (445) mm.* Probably breeds south of Ustyurt desert.

hemachalanus *– close to* ***turcomanus****, but basic colour more yellowish, less ochre. Dark picture on upper- and under parts developed somewhat more than* ***turcomanus*** *and* ***omissus****, and less regular. Dark longitudinal picture on under parts distributed to upper part of belly. Male wing length 433-466 (451), female 473-508 (486) mm.* Occupies area adjacent to Balkhash lake from south, Dzhungarskiy Alatau, basin of Chu river, Karatau ridge and Tien Shan.

Rare resident. Inhabits plain and hilly territory with rocks and cliffs, chinks or precipitates in river valleys, in dense rubbish deciduous, mixed or coniferous forests, in Tien Shan up to 3000 m. Breeding in separate pairs, fairly far each of other. Breeding territories are stable and used by birds, if not disturbed, yearly. Nest is situated in cave or anyone void under stone, or on ground near tree butt, under brushwood, without any special material. Clutches of 2-5 eggs in mid-March – April. Female incubates for 35 days and male feed her. Juveniles hatch in end April at southern areas, and in late May on Altai. At first time male bring food and female give it to chicks, but later both parents hunt for food. Juveniles fledge in end May – mid-July. Repeated breeding after loss of clutches occurs. Broods break-up in September, and by singly they disperse not very far of birth area.

234. **Hawk Owl** *Surnia ulula* (Linnaeus, 1758)

ulula *– basic background of upper parts more light, brown. White spots on upper parts larger. Individual variability rather significant, and expressed in degree colour saturation of basic dark background and development of white spotting of upper parts. At some specimens white colour on upper parts prevails above dark basic background. Width of dark cross strips on under parts individually varies. Male wing length 220-241 (234), female 225-243 (236) mm.* Occupies Southwest Altai, Tarbagatay ridge, possibly episodically nests in Northern Kazakhstan; in Naurzum 27 April 1934 singing male obtained, on south of Kokchetav region recorded 5-8 July 1878 and 17-22 July 1878. On dispersal recorded in Ural valley and even 211 km to north of Djusaly station (4 November 1948) and near Aralsk (11 April 1949; Varshavskiy, 1957;

tianschanica *– basic background of upper part more dark, black-brown. White spots on upper parts smaller. Male wing length 238-251 (244), female 243-252 (248) mm.* Occupies Tien Shan and Dzhungarskiy Alatau.

Rare resident. Inhabits mountain spruce or larch forests, on Altai 1400-2000 m, in Tien Shan 1500-3000 m. On dispersal occurs in deciduous, mixed pine-birch and pine forests of river valleys, and in foothills. Breeding in separate pairs. For breeding old *Corvus* nests or tree holes used. Clutches of 3-4 eggs. Fledglings recorded in end of May – mid-June. In early August in Ketmen ridge female was obtained from a brood. Autumn dispersal begins in September. In Ural valley recorded from mid-October.

235. **Pigmy Owl** *Glaucidium paserinum* (Linnaeus, 1758)

passerinum – occasionally breeding on Western Altai nearby Ust-Kamenogorsk and at Ubinskiy ridge on Sinyukha Mt. (Scherbakov, 1986). In winter occurs in coniferous woods at Kustanay, Petropavlovsk, in Irtysh valley, on Southern Altai in Kara-Kaba valley (Berezovikov, 1989a) and in Tarbagatay ridge. Vagrant birds recorded in mid-January 1959 at Kurgaldzhino (Krivizkiy *et al*., 1985). Close to Almaty (Medeo) observed 2 January 1992 (Kovalenko, 2002a), but this may be cage escaped bird.

Very rare resident. Inhabits mountain taiga forest. Breeding in separate pairs. Nests in tree holes. Clutches of 4-6 eggs. Brood of 5 juveniles recorded 18 July 1968 and 26 July 1981 at 1700 m. Dispersing begins in October, when singles were observed on plains.

236. **Little Owl** *Athene noctua* (Scopoli, 1769)

noctua *– upper parts the darkest, brownish-red-brown; dark picture on under parts sated and contrast. Male wing length 152-169 (160), female 158-177 (168) mm.* Occupies northern part between Volga and Ural area (to the south up to 49-th parallel), and Ural valley, east up to lower reaches of Ilek

valley. Probably to this race concern observation a bird in end July 2001 at Shortandy area (Berezovikov, Kovalenko, 2001).

indigena *– upper parts lighter than* ***noctua****, rusty-brown, less brown, sometimes with greyish shade. Dark picture on under parts a little paler and less contrast than* ***noctua****. Male wing length 163-170 (164), female 166-173 (168) mm.* Occupies a southern part of Volga-Ural area north to 49-th parallel, on east up to lower current of Ural valley.

bactriana *– upper parts lighter than* ***indigena****, light-brown with rusty shade. Dark picture on under parts more paler and less contrast than above races. Male wing length 159-174 (166), female 159-177 (169) mm.* Breeds from east coast of Caspian Sea and lower valley of Ural river up to east border of Balkhash-Alakol' depression, foothills of Tarbagatay ridge, Dzhungarskiy Alatau and Tien Shan. In 3 September 1980 collected on Tengiz lake (Andrusenko, 1984).

orientalis *– upper parts usually lighter than* ***bactriana*** *(occasionally not distinguished from* ***bactriana****), clay-grey, less brownish. Dark picture on under parts a little more contrast than* ***bactriana****. White spotting on upper parts more developed than at other races. Male wing length 165-172 (168), female 170-181 (176) mm.* Occupies Tien Shan, Dzhungarskiy Alatau, Tarbagatay ridge and possible foothills of Altai and Kalbinskiy Altai (Scherbakov, 1978; Egorov, Borisov, 1979). A.M. Chelzov-Bebutov (1978) considers, that birds, recorded in Kyzyltau Mts. at south of Pavlodar region concern to this subspecies.

plumipes *– upper parts similar to* ***bactriana*** *and slightly darker, more brownish-grey than* ***orientalis****. White spotting of upper parts as* ***orientalis****. Male wing length 158-170 (163), female 167-178 (173) mm.* Occupies Altai, in area of Tarbagatay ridge intergrades with ***orientalis***.

Common resident. Inhabits sandy, clay or crashed stone deserts and semi-deserts with ravines, dry bed of rivers; xerophytic low mountains and chinks; foothills of main ridges without forest, at less than 1500-2000 m. Breeding in separate pairs, not less than 0.5 km each of other. Nests in cavities of precipices, rocks, between stones, in holes of rodents, tree holes, old cemetery monuments, not inhabited houses, sheep-folds, under bridges. Cavity is lined with regurgitation remnants (chitin of insects, hair, feathers, bones). Clutches of 4-8 eggs in April – May. Female incubates from first egg for 28 days, male feed her and the brood later. Fledglings at age near a month recorded from mid-June. After several weeks broods break up, and juveniles begin to disperse not far from place of birth. Pairs remain faithful several years, as adults live in winter on their territory.

237. **Tawny Owl** *Strix aluco* Linnaeus, 1758

siberiae *– morphism in this subspecies absent, only grey variation of colour. General colour pale-grey, lighter than* ***haermsi****. Dark picture on upper- and under parts less developed and more thin, that determines more wide circulation of white on basic background, especial on under parts. Males wing length 280-300 (291), female 301-307 (303) mm.* On dispersal and in winter occurs in Ural River valley up to Atyrau. Three birds shot near Dokuchaevka village in December 1996 (Bragin, Bragina, 2002).

haermsi *- morphism in this subspecies absent, only grey variation of colour. General colour close to* ***siberiae****, but a little darker. Dark picture on upper- and under parts more developed, that determines smaller distribution of white on basic background than* ***siberiae****. Cross picture on under parts more straightened, less zigzag. The largest subspecies. Male wing length 300-316 (307), female 315-332 (323) mm.* Occupies Western Tien Shan. Singing was heard in Almaty 29 May and 2 June 2004 (Ashbi, Annenkova, 2005). In winter recorded 27 March 1927 near Kzyl-Orda and 3 December 1906 at Dzharkent.

Very rare resident. Inhabits old deciduous and mixed forests. Breeding in separate pairs. Nest is in tree holes, on attic of house, in old *Corvus* or raptors nests at 0.5-10 m above ground. Mating-calls utter from end of March up to end July. Clutches of 2-6 eggs in April – May probably. Fledglings recorded in end of May – early June.

238. **Ural Owl** *Strix uralensis* Pallas, 1771

uralensis – breeds on Southwest Altai (Khrokov, Berezovikov, 1990; Berezovikov *et al*., 1992) and in Kalbinskiy Altai (Egorov, Borisov, 1979). In winter occurs also on valleys of Irtysh and Ural rivers. One of two dead owls, which found on road in vicinity of Balkhash lake 26 January 1989 at Sarychiganak, was Ural Owl (Rodionov, Gavrilov, 1993).

Very rare resident. Inhabits fir forest with birch and asp trees up to 1600 m. Breeding in separate pairs, old nests of other birds or tree holes are used. Clutches of 2-3 eggs. Brood recorded in 31 July 1971. Autumn – winter dispersal begins in end September.

239. **Great Grey Owl** *Strix nebulosa* Forster, 1772

lapponica – breeds on Altai at ridges Altaiskiy Tarbagatay and Southern Altai (Scherbakov, 1990a).

Very rare resident. Inhabits cedar-larch forest with crags up to 1800 m. Breeding in separate pairs in old nests of other birds. Clutches of 3-5 eggs. Brood of three juveniles recorded 27 August 1987.

240. **Long-eared Owl** *Asio otus* (Linnaeus, 1758)

otus – breeds and migrates almost everywhere, excepting non-forested Volga-Ural area, Mangyshlak and most of Central Kazakhstan. Probably nests in forest near Urda village (Shevchenko *et al*., 1978), about Akmola (Gavrin, 1962) and in Kurgaldzhino (Krivizkiy *et al*., 1985). Broods observed 7 July 2000 in Shortandy area (Berezovikov, Kovalenko, 2001), 21 May 2002 near Sary-Ozek village (Annenkova, 2002a). On Ustyurt chink two nests and one brood found in April – May 2004 (Levin, Karyakin, 2005). One nest with chicks found in Tentek delta (Berezovikov, Levinskyi, 2004). In small numbers wintering in southern and south-eastern Kazakhstan, near Atyrau, at Irtysh valley between Semipalatinsk and Ust'-Kamenogorsk, in Chu valley and Almaty Botanical Garden.

Common, in places rare breeding migrant and rare winter visitor. Inhabits various forests both on plains and in mountains up to 2000 m on Altai and 3000 m in Tien Shan, forested river valleys, forest-belts, groves and gardens.Appears early, in February or March. Latest migrants recorded in mid-April – early May. Breeding in separate pairs in old nests of Magpie, Crow, Rook, Buzzard or Kite, rare on ground under bush. Clutches of 4-6 eggs in mid-March – mid-May. Such long time explained by latitude or altitude of breeding place, later nesting of first breeders, and repeated breeding after loss of first clutches. Female incubates only, beginning from first egg, for 27-28 days, both parents feed brood. Juveniles fledge in end April – July, and parents feed them two months more. Autumn migration, when loose flocks of two-three dozen birds can be met, begins in mid-September. Mass migration occurs in first half of October, and finishes in November.

241. **Short-eared Owl** *Asio flammeus* (Pontoppidan, 1763)

flammeus – breeds in northern half of Kazakhstan (excepting area adjacent to Balkhash lake from north and Betpak-Dala desert), south up to lower Ural valley, Syrdarya mouth, south edge of Taukum desert at Kolshengel (Annenkova, 2002a), Kopa station area and Almaty. On Southwest Altai nests in valleys of Irtysh and Bukhtarma rivers and on Markakol' lake (Berezovikov, 1989a; Berezovikov *et al*., 1992; Khrokov, Berezovikov, 1990), at Kalbinskiy Altai (Egorov, 2001) and also in Zaysan depression. On migration occurs also on Mangyshlak, Ustyurt and in Southern Kazakhstan, in mountains at 1500-2000 m. Winters not regular and in small numbers, in Ural valley, at area adjacent to Aral Sea from north, on Kazakhishe upland, in eastern and south-eastern areas of the Republic.

Common breeding migrant, in places rare resident. Inhabits open landscape; plain or hilly steppe with rare bushes, river meadows, fallow lands, and shrubby patches or riparian forest edges rare. In spring appears in early March – April, when snow waste away mostly. Breeding in separate pairs, when height numbers of field-vole at 2-3 km each of other. Nest is built in shallow hole lined with dry grass, under bush or grass usually. Clutches of 4-11 eggs in early April – May. Female incubates from first egg for 24-29 days alone and male feed her. Both parents care for brood. Juveniles fledge in mid-July. Repeated nesting after loss of first clutches is common. Autumn migration begins in August, northern areas leave until mid-October, southern ones up to mid-November.

242. **Tengmalm's Owl** *Aegolius funereus* (Linnaeus, 1758)

pallens – *upper parts chocolate-brown with rusty shade, without grey. White spotting of upper parts less developed than* ***sibiricus****. Dark picture on under parts well developed.* Occupies Tien Shan and Dzhungarskiy Alatau.

sibiricus – *upper parts less brown, more grey. White spotting of upper parts more developed than* ***pallens****. Dark picture on under parts less developed.* Occupies Kokchetav upland, pine forests in Semipalatinsk area (Panchenko, 1968), Altai (Rakhmanovskiye springs), Kalbinskiy Altai (Berezovikov, 1989a; Khrokov, Berezovikov, 1990; Starikov, Prokopov, 2002). On dispersal occurs in Kurgaldzhino 26 September 1969 (Khrokov *et al*., 1977), in Naurzum Reserve (Bragin, Bragina, 2002), in lower Ural valley 23 October 1957 close to Kozhekharovo (Shevchenko *et al*., 1978) and near Atyrau.

Rare resident. Inhabits spruce, spruce-fir, pine, larch, mixed, or old deciduous forests at up to 2500 m in Tien Shan. Breeds in separate pairs fairly far each of other. Nests in tree holes lined with moss, dry leaves and grass stems, at 3-4 m above ground. Sometimes nest-boxes for Goldeneye occupied too.

Clutches of 5-8 eggs, in April – mid-June. Female incubates only, male feeds her and the brood. Fledglings recorded in end June – early July, and up to August they depend from parents. In late autumn (October – November) they lower to foothills, on plains disperse up to several hundred kilometres.

CAPIMULGIFORMES

243. **European Nightjar** *Caprimulgus europaeus* Linnaeus, 1758

europaeus *– the most dark and large race. General colour of upper parts dark-brown, black strips wide and bordered brown. At males white spot on PM 10 inner web rounded and does not reach or hardly concerns shaft; on PM 9 it does not pass or hardly passes on outer web. At females the first from wing top ochre spot on PM 10-9 inner webs little differs from following spots.* Everywhere occurs in Kazakhstan on seasonal migration.

sarudnyi *– a little lighter than* ***europaeus****, rusty tone on head, throat and wings absent. At males white spot on PM 10 inner web adjoins to shaft for 1-1.5 cm; on PM 9 it usually forms cross strip through both webs (sometimes on outer web only small spot). At females the first from wing top rusty-ochre spot on PM 9 inner web much larger and more brightly, that other ones.* Breeds in northern half of Kazakhstan, from Urda village east up to Pavlodarskoye Trans-Irtysh'e (Kovshar, Khrokov, 1993) and Kalbinskiy Altai. Occupies Southwest Altai, southern slope of Lineyskiy ridge (Scherbakov, 1986, 2001; Berezovikov, 1989a), Zaysan depression, Tarbagatay ridge, Dzhungarskiy Alatau and Tien Shan to the west up to eastern spurs of Zailiyskiy Alatau ridge and also nearby plains. Occurs on migration to the south of this area.

unwini *– general colour of upper parts light grey. At males white spot on PM 9 inner web always forms wide cross strip through both webs.* Occupies deserts of southern Kazakhstan (Mangyshlak and Ustyurt), xerophytic mountains (Karatau, Chu-Iliyskiye), and also Talasskiy Alatau, Kirgizskiy Alatau and Zailiyskiy Alatau ridges. In outlined area occurs on migration too.

plumipes *– general colour of upper parts light-ochre, sandy colour. Dark streaking on head and back not sharp and poorly appreciable; light spots on scapulars and wing coverts ochre and poorly allocated on general background also. Cross strips on central rectrixes narrow and not so dark, as at other races. Primaries with wide rusty cross-spots on both webs, on inner web they reach or nearly so the shaft. Tarsus feathered stronger than other races.* Rare occurs on migration in southern and south-eastern Kazakhstan.

Common, in places rare breeding migrant. Inhabits steppe forest islands, forests in river valleys, riparian forests, sandy deserts and low old mountains with bushes and reed-beds on streams. On Altai inhabits meadow-steppe belt with bushes and rocks at 1450-1600 m and juniper tree forest in Western Tien Shan up to 2000 m. Arrives in end April – May, migration finishes in early June. Nest not built, eggs lay on ground. Clutches of 2 eggs found in mid-May – end June. Very late breeding observed in Zaysan depression, where clutches found 21 July 1995 and chicks hatched 25 July. Incubation lasts 17-18 days. Both parents feed juveniles. Repeated nesting after loss of first clutches very probably. Autumn migration begins in August, mass flight occurs in September, latest birds recorded in end October (24 October 2000). On Chokpak Pass in spring ringed 184 ***europaeus***, 532 ***zarudnyi***, 110 ***unwini*** and 44 ***plumipes***; in autumn 158 ***europaeus***, 209 ***zarudnyi***, 174 ***unwini*** and 45 ***plumipes.***

Note. At definition of subspecies it is necessary to take into account, that young specimens are lighter, than adults (Cramp, 1985).

244. **Egyptian Nightjar** *Caprimulgus aegyptius* Lichtenstein, 1823

arenicolor – breeds and occurs on migration in Kyzylkum desert, on Syrdarya valley, in Karakum sands adjacent to Aral Sea and in lower reaches of Sarysu river. On Ustyurt it was observed in 7 May 1989 (Rustamov, 2004), but no bird obtained.

Rare breeding migrant. Inhabits sandy deserts with bushes near water. Appears in end April – early May. Breeding in separate pairs. Nest is shallow hole without lining. Clutches of 2 eggs found in mid-May – mid-June. Flying juveniles were mist-netted in end July. Repeated nesting after loss of first clutches very probably. Autumn migration begins in second half of August, latest bird recorded 1 October 1954.

APODIFORMES

245. **White-throated Needletail** *Hirundapus caudacutus* (Latham, 1801)

caudacutus – in summer of 1983, 1984 and 1986 repeatedly observed on Western Altai in Sakmarikha valley (Baydavletov, 1994). Accident occurrence are known 6 September 1984 in Almaty (Gavrilov, 1986), 4 September 1909 in Karatau (Korelov, 1970b), 4 September 1990 in Aksu-Dzhabagly Reserve near Dzhabagly settle (Belousov, 1994) and 19 September 1908 in vicinities of Tashkent.

Rare vagrant, though breeding on Altai not excluded. Occurs on Altai at 800-1100 m in flocks mid-June, mid-July – early August and in end June – early July. Other three singles recorded in September. In Siberia, appears in May. Breeding in colonies in tree holes or height rocky precipices of river shore. Clutches of 2 eggs in June, juveniles fledge in end July – early August. Autumn migration begins in end August, latest birds recorded in end September.

246. **Alpine Swift** *Apus melba* (Linnaeus, 1758)

tuneti – breeds on low mountains and coastal steeps in southern part of Kazakhstan, north up to Mangyshlak, and south-western spurs of Dzhungarskiy Alatau. Here occurs on migration too (Korelov, 1964, 1970). Vagrants recorded in lower reaches of Ural river 3 September 1974 (Gubin *et al*., 1977), near Orenburg (Zarudnyy, 1897), and large flock 16 April 1911 near Kapal village at foothills of Dzhungarskiy Alatau (Shnitnikov, 1949). On Charyn river 5 km up of Aktogay near 100 birds observed 26 May (Kovalenko, Kovshar, 2004).

Rare breeding migrant. Inhabits chinks, caves, rocky gorges of low mountains, and villages (Taushik on Mangyshlak) rare. Appears in early March – April, singly or in small flocks. Nests are built in cracks from pieces of grass, hair and feathers, pasted together with saliva. Clutches of 2-4 eggs in mid-May – early June. Both parents build nest and feed juveniles. Autumn migration in end August – late October. On Chokpak Pass one adult (moult score 44) was ringed 14 October 2004 and singles recorded 18 and 21 October 2000.

247. **Common Swift** *Apus apus* (Linnaeus, 1758)

apus – *general colour darker, forehead the same colour as back or somewhat lighter; light spot on throat lesser and dirty-white.* Breeds in northern half of Kazakhstan, south up to lower reaches of Emba river (Neruchev, 1968), Aral Sea, Balkhash lake, Zaysan lake and eastern part of Dzhungarskiy Alatau (Berezovikov, Levin, 2002b). More southern and also in mountains of Western Altai and in upper reaches of Bukhtarma river (Berezovikov *et al*., 1992), occurs on migration only.

pekinensis – *general colour lighter, forehead greyish and lighter than back; light spot on throat larger and more purer colour.* Breeds in southern half of Kazakhstan: Ustyurt, Kyzylkum desert, Tien Shan and area adjacent to Balkhash lake from south (in Bakanas 30 June 2001). Here occurs on migration too.

Common breeding migrant. Inhabits clay or rocky precipices, chinks, caves, villages and towns, steppe forest islands. Arrives in April – early June in small flocks. Breeding in colonies. Nest built from pieces of grass, hair and feathers, pasted together with saliva, in tree holes, nest-boxes, precipice cracks or under building roof. Clutches of 2-4 eggs in mid-May – June, juveniles fledge in July. Both parents incubate and care for chicks. Autumn migration begins from end July in flocks of several dozen or hundred birds. Most breeding areas leave until end August – early September, some birds linger up to mid-October.

248. **Pacific Swift** *Apus pacificus* (Latham, 1801)

pacificus – breeds and occurs on migration in Southwest Altai at basins of Uba, Ul'ba, Bukhtarma rivers and on Markakol' lake. Many birds recorded in end July – early August 2003 on Rakhmanovskoe and Yazevoe lakes (Prokopov, 2004).

Rare breeding migrant. Inhabits rock cliffs up to upper part of forest belt (1700-2000 m.). Arrives in end April – mid-May. Breeding in colonies of several up to 50 pairs. Nest is built in rock cracks from pieces of grass, hair and feathers, pasted together with saliva. Clutches of 2-3 eggs in end May - June. One bird with grass in bill was observed 3 July 1960, fresh egg on Eagle Mt. was found 22 June 1961, and juveniles in nests recorded 10 July 1947. Flocks of adults and juveniles were observed in 30 July 1980.

CORACIIFORMES

249. **Common Kingfisher** *Alcedo atthis* (Linnaeus, 1758)

atthis – breeds on reservoirs of eastern and south-eastern Kazakhstan, west up to Pavlodar, Semipalatinsk, Karaganda and Kzyl-Orda, and also in middle (Gubin, Levin, 1982) and probably lower reaches (Dubinin, Toropanova, 1956) of Ural valley. Common on Tentek river and on western shore of Alakol' lake (Berezovikov, Erokhov, 2004). On migration occurs everywhere both on plains and in mountains (Markakol' lake, 1450 m; Berezovikov, 1989a).

Common, in places rare breeding migrant. Inhabits river valleys, streams with slow flow, pounds and lakes with fish and precipices. On migration occurs on all reservoirs. Appears in April – mid-May singly or in pairs, last migrants recorded end May – early June. Breeding in separate pairs not close each to other. Nest is built in hole of precipices up to 3 m long, which finishes by nesting chamber without lining (later a layer of fish bones from regurgitation appears). Both birds excavate it, incubate near 20 days and feed juveniles. Clutches of 4-8 eggs found in end May – mid-July. Fledglings (23-24 days old) recorded in mid-July – mid-August. Two broods probably per season. Autumn migration begins in September. Latest birds recorded in early – mid-October.

250. **Blue-cheeked Bee-eater** *Merops persicus* Pallas, 1773

Breeds in southern Kazakhstan, north up to Novaya Kazanka, Raygorodok villages and Srym natural boundary on Uil river (Shevchenko *et al*., 1993), north of Aral Sea at Akespe station (Kuzyakin, 2005), Betpak-Dala at Chulak-Espe (Kovshar, Levin, 1993) and Ile valley. Near 3-4 pairs bred on western shore of Alakol' lake in 1993 (Berezovikov, Erokhov, 2004). Vagrants recorded near Orenburg (Zarudnyy, 1888; Kornev, 1989), in Naurzum Reserve a flock of 12 birds recorded 14 August 2002 (Bragin, Bragina, 2002), in lower reaches of Turgay river 5 July 1975 (Auezov *et al*., 1978) and in Kurgaldzhino 20 June – 2 July 1970 (Khrokov *et al*., 1977; Krivizkiy *et al*., 1985). In outlined area occurs on migration.

Common, in places rare breeding migrant. Inhabits sandy plain and hilly deserts near lakes often, river valleys, irrigation canals. Arrives in mid-April – early May in flocks up to 20-50 birds, migration finishes at early June. Breeding in colonies of several up to six hundreds pairs in Kyzylkum (Gubin, Sklyarenko, 1990). Hole for nest excavates by both partners in clay precipices or in compact sand of 130-290 cm long (at angle of 12-28^0) with nest chamber for 6-10 days. When strong wind, entrance of holes filled by sand, and birds clear them regularly. Clutches of 4-9 eggs in mid-May – early June. Female incubates only, male feeds her and juveniles, which fledge from mid-July. Autumn migration begins in August, most birds leave in first half of September, latest flocks recorded on Chokpak Pass 12 October 2000 and 20 October 1973.

251. **European Bee-eater** *Merops apiaster* Linnaeus, 1758

Breeding in southern half of Kazakhstan,north up to lower reaches of Ilek river and Aktau Mt. (Berezovikov *et al*., 1995, 1997), Naurzum (Bragin, Bragina, 1999, 2002), Uly-Zhilanchik, southern coast of Balkhash lake, Semipalatinsk (Korelov, 1970c), Berezovka and Narym villages (Berezovikov *et al*., 1992). Dispersal birds were observed 28 August 1958 near Zharkol lake, to south of Ishim river and 23 May 1978 in Kurgaldzhino (Andrusenko, Khrokov, 1981). On migration occurs to the south.

Common breeding migrant. Inhabits open plain or hilly landscape with soil or clay precipices, river valleys and shore of lakes, near villages and towns especially. Appears in second half of April – mid-May in flocks of 10-70 birds. At Chokpak Pass latest migrants recorded in end of May. Breeding in colonies of several up to 30-40 pairs, in singly pair very rare. Nest is built in precipice hole of 1-2 m long, which excavated by both partners for 10-15 days, and finished by nest chamber without any lining. Later a layer of insect chitin from regurgitation appears. Clutches of 4-7 eggs in end May – June. Both parents incubate for near 20 days and feed juveniles, which fledge at near a month old, in end July – first half of August. After this they begin disperse, and concentrate on wires along roads and near bee-gardens especially. Intensive autumn migration is going in first half of September, in flocks (adults and juveniles together) of several dozen up to 100-150 birds. Latest recorded in end October.

252. **European Roller** *Coracias garrulus* Linnaeus, 1758

garrulus *– brown back darker; on head, neck, under parts and on great and median upper wing coverts more advances bluish and less greenish shade.* Breeds in Volga-Ural area in throw off structures of reservoirs, in Ural valley and its inflows (Shevchenko *et al*., 1993), in Naurzum Reserve, at Irtysh

valley upwards up to Semipalatinsk, and also on Altai in Uba valley near Shemonaikha village (Scherbakov, 1978b). In summer recorded in Pavlodarskoye Trans-Irtysh'e (Kovshar, Khrokov, 1993). On migration occurs to the south. Vagrant bird observed 28 May 1982 on Markakol' lake (Berezovikov, 1989a).

semenowi – *brown back lighter; on head, neck, under parts and on great and median upper wing coverts more developed greenish and less bluish shade.* Breeds in southern half of Kazakhstan, north to northern coast of Aral Sea and Zaysan depression. Here occurs on migration too.

Common, in places rare breeding migrant. Inhabits flood plain forests, patches of pine forest, grove of Asiatic poplar at Zhelturanga (Ile valley), desert clay precipices in ravines, on lakes and rivers in open or hilly county in foothills. Arrives in end April – mid-May singly or in small loose flocks of 15-30 birds, which observed at Chokpak pass early morning. Latest migrants recorded end May. Breeding in separate pairs, no less 50-200 m apart. Nests in natural tree holes (willow, Asiatic poplar) or in ground holes of 0.25-1.25 m long excavated by birds, which used several years. Hole finished by nest chamber without any lining. Clutches of 3-7 eggs mid-May – June. Both parents excavate hole, incubate from first egg 18-19 days and feed juveniles, which fledge in July, at 26-28 days old. On dispersion birds occur in mountains much higher of breeding places, concentrate on poles and wires along roads in open country. Autumn migration begins in August, single birds linger up to end September – early October, latest recorded near Merke 29 October 2000.

253. **Hoopoe** *Upupa epops* Linnaeus, 1758

epops – everywhere breeds and occurs on migration in steppe, deserted and forested plains, and also in mountains on Altai (Markakol' lake; Berezovikov, 1989a) and Tien Shan. In 1960th years singles winter in Almaty, where recorded 5 December 1963, 27 December 1961, 17 January 1962, 24 and 28 Jauary 1964, 2 February 1962, 3 February 1963 and 28 February 1961.

Common breeding migrant. Inhabits flood plain and riparian forests with soil precipices and open low grass patches, sheepherd houses and their remnants, villages and town environs, cemeteries, gardens, low mountains and foothills with stony gorges or clay ravines. Lives up to 1600 m on Altai and 1800-2000 m in Tien Shan. Arrives in end February – March singly or in small groups at southern areas, and in April at northern and in mountains. Breeds in separate pairs not close one to other. Nests in tree or precipice holes, any cavity of houses, sheep-folds, cemetery monuments, under bridges and so on. No lining used. Clutches of 5-12 eggs found in April – mid-June. Female incubates for 16-18 days and male feed her. Both parent rear juveniles, which fledge at 22-24 days old, in end of May – early August, and near two weeks they fed by parents. Probably two broods per season, repeated nesting after loss of first clutches is common. In late summer broods disperse, concentrations of two-three dozen birds occur at some places. Autumn migration in August mostly, some birds linger up to early October.

PICIFORMES

254. **Wryneck** *Jynx* torquilla Linnaeus, 1758

torquilla – breeds in Ural valley (south up to Budarino village) and Ilek valleys, on Kokchetav upland, in Irtysh valley, on Southwest and Southern Altai. At Tarbagatay foothills in Karabuta village displaying male recorded 10-12 June 2004 (Berezovikov, Levin, 2004). Occupies plain and mountain woods. In other territory occurs on migration only. Regularly recorded in highlands of Zailiyskiy Alatau ridge, Big Almaty Lake, where observed in August 1973-1977 (Kovshar, Lopatin, 1983).

Common breeding migrant. Inhabits flood plain deciduous forests, birch steppe forest islands, mountain deciduous and mixed forests of river valleys and nearby lakes (on Altai up to 1900 m.). On migration occurs in steppe and desert with bushes near water, in gardens, parks, forest-belts and in highlands up to 2800 m. Arrives singly in mid-April – early May, migration finishes in early June. In Naurzum Reserve 29 April 1972 one bird collected (Smetana. 1974). Breeding in separate pairs at 150-200 m each of other. Nests situated in tree holes (elm, birch, asp, poplar, willow or larch), nest-boxes or in hole of house, made of logs, at 1-12 m above ground, without any lining. Clutches of 6-12 eggs in end of May – late June. Female incubates from last egg for 11-12 days. Juveniles fledge in July – early August. Repeated nesting after loss of first clutches is probably. Autumn migration begins in early August, area of Markakol' lake they leave until end August. At Chokpak Pass latest recorded in end September – early October.

255. **Grey-headed Woodpecker** *Picus canus* Gmelin, 1788

canus *– green colour of upper parts more sated, greyish shade on back poor or not developed.* On dispersal occurs in Ural valley (one was shot western of Uralsk 27 July 1950), close to Yanaikino village 19 and 31 October 1956, 20 October 1986 and 24 February 1976 and in Northern Kazakhstan, east up to western foothills of Altai.

jessoensis *– green colour of upper parts less sated, grey shade on back more developed, frequently grey colour dominates above green.* Breeds on Southwest Altai and in pine forests of Kalbinskiy Altai. Probably this race on dispersing reaches Lepsy village in August 1926.

Rare resident. Inhabits mixed forests, up to 1900 m in Altai. Breeding in separate pairs in tree holes (asp, larch). Clutches of 3 eggs was found 19 May 1982, but lay begins in end April probably. Brood recorded in early July. Dispersing birds were observed in October – mid-March.

256. **Black Woodpecker** *Dryocopus martius* (Linnaeus, 1758)

martius – breeding on Altai, in Saur, Tarbagatay ridge and Kalbinskiy Altai, Semipalatinsk area adjacent to Irtysh river, Kokchetav upland. On dispersing occurs in middle and lower current of Ural valley from 30 September up to 22 October 1956 (seven birds recorded), near Uralsk 18 March 1983, 27 November 1985 and 8 October 1987, at once (in 1924) observed in Naurzum pine forest (Bragin, Bragina, 2002).

Rare resident. Inhabits old coniferous (fir, larch, pine) or mixed (pine, birch) forests up to 2000 m. On dispersal occurs in deciduous forest. Breeding in separate pairs in tree holes (larch, pine, spruce or asp) with right-angled entrance at 3-20 m above ground. Clutches of 3-5 eggs in May – June probably. Fledglings recorded in July – early August. Dispersing birds observed in September – November and March.

257. **Great Spotted Woodpecker** *Dendrocopos major* (Linnaeus, 1758)

major *– on PM 4-6 white strips on outer webs not wider or little more widely than black ones. Bill thick and wide, large. Males wing length 136-148 (143) mm.* Occupies northern areas of Kazakhstan from Ural valley up to Pavlodarskoye Trans-Irtysh'e (Kovshar, Khrokov, 1993), breeds also in Shortandy area (Berezovikov, Kovalenko, 2001), at Kazakhskiy small-hills territory and Zaysan depression, and also in Southwest Altai and Kalbinskiy Altai. Nesting also in Naurzum Reserve (Bragin, Bragina, 1999, 2002), in Mugodzary ridge (Urkach forest) recorded 12 and 23 June 2003 (Kovshar, Davygora, 2004). On dispersing occurs in Kurgaldzhino 25 November 1969, 18 August 1971, 8-11 May 1972 (Khrokov *et al*., 1977; Krivizkiy *et al*., 1985).

tianschanicus *– on PM 4-6 primaries white strips on outer webs significant, almost twice, more widely than black ones; on secondaries white strips not narrower than black ones. Bill lesser, more poorly and thinner than* ***major****. Wing length of males and females 139-144 (141) mm.* Occupies Dzhungarskiy Alatau, Eastern Tien Shan and Zailiyskiy Alatau ridge near Big Almaty Lake (Kovshar *et al*., 1978), where young birds collected 26 July 1971 and 17 August 1975. From 1999 occurs in Ucharal, Alakol' depression, where a brood recorded 27 June 2002 (Berezovikov, Levinskiy, 2002), but subspecies not identified (it may be White-winged Woodpecker, as bird not investigated in hands). On dispersion it repeatedly obtained in Almaty (1 March1964, January 1971, 17 January 1972), in Bortagoy grove (2 March 1961) and on Chokpak Pass where a male was ringed at 5 May 2005. As from this point to Almaty is 600 km, we think that it continue to disperse on west.

Common, in places rare resident. Inhabits old deciduous, mixed and coniferous forests on plains and in mountains up to 2600 m. On dispersing occurs in gardens, forest belts and very rare in open landscape with bushes only. Breeds in separate pairs in tree holes (asp, willow, birch, pine or spruce) at 2-20 m above ground. Clutches of 5-7 eggs in end April – late May. Female incubates for 13-14 days. Both parents feed juveniles, which fledge in end June – late July.

258. **White-winged Woodpecker** *Dendrocopos leucopterus* (Salvadori, 1870)

albipennis *– on outer webs of PM 4-6 white colour occupies all space, except for black tips, or white field, remaining dominant, interrupts by small black spots, located usually on unequal distance from each other. White spot on closed wing formed by white colour of secondaries and occupies large space. White colour in distal rectrices dominates, black cross strips narrow, sometimes not continuous and broken. On under parts, on throat and breast, upper belly and forehead in fresh plumage small ochre shade occurs.* Occupies deserts from eastern coast of Aral Sea up to western foothills of Tien Shan and Karatau.

leptorhynchus *– on outer webs of PM 4-6 black and white spots located in correct sequence, thus black spots usually occupy the greater space than white ones; black colour here dominates above white. White spot on closed wing formed by white colour of secondaries, occupies smaller space. White colour on distal rectrices less distributed, black cross strips are wider and always unbroken. In fresh autumn dress on under parts, on throat, breast, upper belly and forehead ochre shade developed in some extent.* Breeds from lower reaches of Chu river, Karatau and western foothills of Tien Shan east to Northern Tien Shan and foothills of Dzhungarskiy Alatau, including area adjacent to Balkhash lake from south, and Ile – Lepsy valleys (Berezovikov, 2002i).

Rare resident. Inhabits riparian and saxaul plain forests, groves, old forest belts. On Pskem and Ugam ridges lives in gardens and mixed walnut forests on valleys, up to 2000 m. Breeding in separate pairs at 300-500 m each of other, in tree holes (Asiatic poplar, willow, apple, elm, nut-tree or saxaul) at 0.5-5 m above ground. Clutches of 4-5 eggs in mid-April – mid-May. Both parents incubate and fed juveniles, which fledge in end June – early July. Broods with parents recorded up to September. Repeated nesting after loss of clutches is common.

259. **White-backed Woodpecker** *Dendrocopos leucotos* (Bechstein, 1803)

uralensis – breeds on Ural valley (south up to Kalmykovo village), in Kokchetav upland, in Irtysh valley, on Southwest Altai, in Kalbinskiy Altai and on Chernyy Irtysh valley. On dispersal recorded at Zaysan depression.

Rare resident. Inhabits deciduous or mixed pine-birch both plain and mountain forests up to 1450 m. Breeding in separate pairs in tree holes (birch, willow) at 2-7 m above ground. Clutches of 3-5 eggs in end April – early May, juveniles fledge in mid – end June.

260. **Lesser Spotted Woodpecker** *Dendrocopos minor* (Linnaeus, 1758)

minor *– under parts darker, frequently with ochre shade. White colour on back occupies smaller space and has expressed black cross picture. Dark longitudinal strips on breast and belly sides developed poorly. Black cross strips on rectrices more correct than* ***kamtschatkensis****.* Breeds in middle and lower current Ural valley, south to Budarino village, 40 km south of Uralsk. On dispersing occurs in northern part of Volga-Ural area, in Naurzum pine forest (Bragin, Bragina, 2002) and south up to Atyrau.

kamtschatkensis *– under parts lighter, more clean-white, or rare with weak ochre shade. White colour on back occupies greater space than* ***minor****. Black cross figure on back less developed. Dark longitudinal strips on breast and belly sides absent or developed more poorly. Black cross strips on rectices less correct than* ***minor****. Individual variability rather developed.* Occupies northern Kazakhstan, adjacent to Irtysh river area, Kalbinskiy Altai and Southwest Altai. One bird recorded in 5 December 1986 at Kurgaldzhino (Andrusenko, 2002).

Rare resident. Inhabits deciduous, rare mixed pine-birch forests and groves or shrub thickets with singles trees both on plains and in mountings up to 1500-1700 m in Altai. Breeding in separate pairs in tree holes (birch, asp, willow, apple-tree or poplar) at 0.5-10, usually 2 m above ground. Clutches of 5-9 eggs in May – early June, juveniles fledge in early June – July. Dispersal begins in end July.

261. **Three-toed Woodpecker** *Picoides tridactylus* (Linnaeus, 1758)

tridactylus *– lighter. White colour on back more developed. Black "moustache", black longitudinal picture on breast sides and black cross picture on belly sides expressed more poorly. Outer rectices have more developed black picture.* Occupies Semipalatinsk area adjacent to Irtysh river, Southwest Altai and Saur ridge.

tianschanicus *– darker. White colour on back less developed. Black "moustache", black longitudinal picture on breast sides and black cross picture on belly sides expressed more strongly. Outer rectices have more developed white picture.* Occupies Tien Shan and Dzhungarskiy Alatau.

Rare resident. Inhabits coniferous, rare mixed forests (spruce, fir, larch or cedar) with dead wood, on Altai up to 1700 m, in Tien Shan between 1500-2600 m. Breeds in separate pairs in tree holes (spruce, larch) at up to 20 m above ground. Clutches of 3-5 eggs in May. Both parents incubates (males have a brood patch) and feed juveniles, which fledge in July, but nest with chicks recorded 26 August 1937 too. Not disperse in foothills, far of breeding area.

PASSERIFORMES

Alaudidae

262. Calandra Lark *Melanocorypha calandra* (Linnaeus, 1766)

calandra *– upperparts are darker brown, with a less sandy-yellow tint than* ***psammochroa****; the dark shaft streaks are thicker.* Breeding and occus on migration in Western Kazakhstan, south up to Novaya Kazanka (Gavrilov *et al*., 1968); to east from the lower Emba river and Mount Aktau in Utva-Ilek territory (Berezovikov *et al*., 1995) up to Turgay (near the Tusum sands) and north-west coast of the Aral Sea; south up to western and northern Ustyurt (Varshavskiy, 1965). Wandering birds observed in Kurgaldzhino 7 April 1985 (Andrusenko, 1986a). Occasional wintering has occurred on Barsa-Kelmes island (Gistsov, 1978).

psammochroa *– upperparts are lighter, more sandy-yellow than brown; dark shaft streaks are narrower.* Breeding from Syrdarya and Chu valleys, north up to the Zaysan depression, where it also occurs on migration. In 18-21 December 2003 huge amunt up to 20-30 thousand birds recorded nearby of Chardara reservoir (Erokhov, Belyalov, 2004).

Common, in places numerous, breeding migrant. Inhabits feathergrass/wormwood, grass/wormwood, fescue/wormwood and wormwood steppe, dry and flooded meadows, wheat, lucerne and clover fields, fallow lands, both on plains and in foothills up to 1300-2000 m. During migration occurs on stubble fields, shore of lakes and tracks in flocks of up to a thousand birds. Appears early, in mid February – early March, most birds migrating in March. Breeding in separate pairs 100-200 m apart. Nest is built in a shallow scrape under grass shelter and made from dry grass. Clutches of 3-6 eggs found in mid April – mid May. Females incubate, though males also have a brood patch. Both parents feed juveniles, which fledge at 10-11 days old, in mid May – June. Repeated breeding after loss of first nest is common. The last singing males recorded in early July. Autumn migration begins in August, when many birds concentrate near lakes, artesian wells and other water sources, often with other lark species. Most birds depart in the second half of September – mid October. Last flocks recorded in early – end November.

263. **Bimaculated Lark** *Melanocorypha bimaculata* (Menetries, 1832)

torquata – breeding and migrating in the southern half of Kazakhstan, north to the upper valley of Emba (Neruchev, 1968), Dzhezkazgan, north of Balkhash lake, Ayaguz valley, Zaysan depression, where one juvenile recorded on 28 July 2001 (Berezovikov, Rubinich, 2001). Summer records of 18 June 1975 are known from Kurgaldzhino (Krivizkiy *et al*., 1985).

Common, in places numerous or rare, breeding migrant. Inhabits crushed clay stone desert with poor vegetation, stony slopes with low grass, wormwood/grass and wormwood/fescue steppe on plains and in foothills up to 1700-2000m. During migration shows a preference for stubble fields and tracks. Appears end February – early March, most migrating in March in flocks of several dozen. Migration is finished late March – early April. Breeds in separate pairs, not far apart. Nest is built on ground in a shallow scrape under a grass shelter and is made from dry grass and rootlets. Clutches of 3-6, more often of 4-5 eggs, are laid mid April – late June. Both parents feed juveniles, which fledge late May – early July. Repeated breeding after nest loss probably occurs. Autumn migration begins in late August, most birds departing between the second half of September and mid October; the last flocks generally recorded late October – early November.

264. **White-winged Lark** *Melanocorypha leucoptera* (Pallas, 1811)

Breeding in feathergrass and wormwood steppe of northern half of Kazakhstan, from Volga-Ural area and Utva-Ilek territory (Berezovikov *et al*., 1995), Naurzum Reserve (Bragin, Bragina, 2002) and Pavlodar territory adjacent to Irtysh river (Berezovikov, Kovshar, 1991), south up to northern edge of Volga-Ural sand (Gavrilov *et al*., 1968), Makhambet settlement, large bend of Emba river, Mangyshlak to Shetpe station (Levin, Karyakin, 2005), the northwest (*per* B.Gubin) and northeast corners of Aral Sea (Varshavskiy, 1965), Kiik station, Chubartau, Chiliktinskaya valley, the northern part of the Alakol' depression and on Arkharly mountains, east of Balkhash lake (Berezovikov, Levin, 2002b). One bird recorded in late May near Kolshengel where at leas 5 pairs bred in May 2003. Bred in western foothills of Chu-Iliyskiye Mts. at mid-June 2003 (*per* O.Belyalov). One male seen 25 July 2002 near Ustyurt Reserve (Gubin, 2002a). On passage and in winter it is met everywhere in Kazakhstan, including southern areas. At Kyzylkol' lake two singles in flock of Bimaculated Lark recorded 12-13 September 2002.

Common, in places numerous, resident. Inhabits feathergrass/fescue/grass and wormwood/grass steppe and fallow lands often with scattered bushes. On passage and in winter occurs in open habitat, stubble fields and tracks in flocks of several hundred to a thousand birds. Spring arrival at breeding sites mid – late March or in early April. Breeds in separate pairs at distance of 50-150 m from one another. Ground nest located in shallow scrape and built of dry grass and wormwood lined with soft grass. Clutches of 4-6 eggs found end April – mid June. Female incubates for around 12 days, probably aided by male, as brood-patches have been recorded in both sexes. Both parents feed juveniles, which fledge mid May – mid July. Repeated breeding after loss of first nest is common. Most birds migrate to southern areas in September – October; small numbers linger into late November.

265. **Black Lark** *Melanocorypha yeltoniensis* (J.R.Forster, 1768)

Breeding in the northern half of Kazakhstan (except the Kokchetav highlands), south to Volga-Ural sands (Iglik, Ishingali, Koktau; Gavrilov *et al*., 1968), lower Emba river, western edge of Bolshiye Barsuki (Varshavskiy, 1965), north of Aral Sea (Duysebaeva, 2002), territory adjacent to north of Balkhash lake and Zaysan depression. Not rare in Pavlodarskoye Trans-Irtysh'e (Kovshar, Khrokov, 1993). At 20 May 2002 two males observed close to Kulsary (*per* Yu.S.Lobachev). On passage and in winter sometimes seen on Barsa-Kelmes island (Gistsov, 1978), at Chimkent, in Western Tien Shan foothills (Gavrilov, Gistsov, 1985) and in Almaty area.

Common resident. Inhabits steppe (wormwood, feathergrass, fescue/grass) often with scattered bushes, and semi-desert (near saline soil on meadow patches with *Lasiagrostis*, feathergrass and wormwood). During passage and in winter concentrates on pastures, stubble fields, near roads and settlements. Arrival at breeding sites occurs late February – March. Pairs form in April. Pairs breed 80-700 m from each other. Nest is built in shallow scrape under grass shelter and is made from dry grass lined with soft grass and scraps of vegetation. Clutches of 3-7 eggs in early April – late June. Only female incubates. Both parents feed juveniles, which fledge at 9-11 days old, in mid May – early July. Repeated breeding after loss of first nest is common. Males predominate in broods and comprise 68% of juveniles. Flocks of non-breeding males were observed in May – June on shores of Tengiz lake, where they do not breed. Juveniles gather independently in flocks in June. In winter, males wander in huge flocks of up to several hundred birds. Such flocks regularly comprise only 10-20% females recorded among them. Flocks of females numbering up to several dozen birds rarely recorded.

266. **Short-toed Lark** *Calandrella brachydactyla* Leisler, 1814

longipennis – breeding and migrating throughout plains, north up to Kustanay, Atbasar, Selety-Teniz lake and Zhamantuz and Svetliza lakes in Pavlodarskoye Trans-Irtysh'e (Kovshar, Khrokov, 1993) and Kalbinskiy Altai (Egorov, 2001). Singles observed 180 km north-eastern of Kustanay in summer. On migration occasionally observed in Southern Altai, on Markakol' lake, in mid April and mid October (Berezovikov, 1989a).

Numerous, in places common breeding migrant. Inhabits dry wormwood steppe, clay desert with stunted wormwood and *Salsola* vegetation, crushed clay and stony plots of sandy desert, fasten sands with wormwood, fescue-wormwood steppe, foothills and tablelands from plains up to 1000-1600 m. On migration it observed on stubble fields, hayfields and roadsides. Arrival occurs early - mid March in flocks of several dozen individuals in southern areas, and early – mid April in northern ones. Most birds migrate March – mid April. Breeding in separate pairs not far from each of other. Nest is built on the ground in a shallow scrape under tussock of dry grass lined with soft grass, vegetation fluff and spider's cocoons. Clutches of 3-5, more often of 4 eggs, in mid April – early June. Both parents share incubation for 10 – 11 days and feed juveniles, which fledge at 11-12 days, in mid May – early July. All phases of reproduction occur two weeks later in the north than in the south. Begin to wander in loose groups (sometimes of dozens of individuals) end July – August. Most birds migrate in September – mid October. Last recorded early November.

267. **Hume's Short-toed Lark** *Calandrella acutirostris* Hume, 1873

acutirostris – breeds in highland steppe of Western Tien Shan in Karjantau ridge (Chalikova, 2003; Kovshar, 2004) and Pskem ridge, between Mynchukurbel and Yakhak passes (Kovshar, 2004). Vagrant obtained 31 March 1900 near Dzharkent settlement (Koreev, Zarudnyy, 1906).

Rare breeding migrant. Inhabits mountain steppe and alpine meadows at 2500-2800 m. Appear late April – early May in small flocks. Pairs breed separately at density of 5-7 pairs per km. Nest is built in shallow scrape under grass shelter from dry grass and some moss lined with plenty of vegetation fluff

and hair. Clutches of 3-4 eggs are laid mid May – mid July. Incubates by female for 10-11 days. Both parents feed juveniles, which fledge at 10-11 days, in mid June – early August. Repeated breeding after loss of first nest is common. Wandering birds are recorded mid – end August.

268. **Lesser Short-toed Lark** *Calandrella rufescens* (Vieillot, 1820)

heinei - occupies desert and semi-desert plains of southern half of Kazakhstan, north up to Ural (Gavrilov *et al*., 1968) and Utva valleys (Berezovikov *et al*., 1995), Kurgaldzhino Reserve and Sasykkol lake (Korelov, 1970d). In summer observed at foothills of Monrak ridge and in the Chiliktinskaya valley (Survillo, 1971), but breeding not proved. In outlying areas is seen during seasonal migration. Wintering in small numbers from desert adjacent to Caspian Sea, south to Mangyshlak and lower of Ile river.

Common, in places numerous breeding migrant. Inhabits saline zones in sandy desert, sands fastened with saxaul bushes, wormwood desert and dry steppe. Arrives late February – early March in southern areas, and mid March – early April in northern ones in flocks of several dozen birds. Breeding in separate pairs, not far from each other. Nest is built on ground in shallow scrape shaded by a plant and is made from dry grass lined with thin grass and vegetation fluff. Only female builds the nest, male escorts. Clutches of 3-6, more often of 5 eggs, are laid early April – end June. Both parents incubate (male has brood patch) for about 14 days, and feed juveniles, which fledge mid May – early July. Probably, two broods are reared per year, repeated breeding after loss of first nest is common. Autumn passage begins end July, most departing end August – late September. Last birds recorded end October.

269. **Asian Short-toed Lark** *Calandrella cheleensis* (Swinhoe, 1871)

leucophaea - occupies saline soil plains of the southern half of Kazakhstan, north to the mouth of Emba river, the lower part of the Sarysu river and the Alakol' depression. Breeding is probable in the lower Turgay river, at lakes Zhaksy-Akkol', Zhamanakkol and near Dzhezkazgan. It occurs in winter in these places. There is an opinion, that at last decades this species forced from some places by Lesser Short-toed Lark (Kovshar *et al*., 2004).

Common, in places rare, resident. Inhabits saline plains with stunted vegetation, rarely among low reeds; saline soil patches in wormwood desert near tamarisk and saxaul bushes; salty clay depressions with sedge, *Salsola* and wormwood. During wandering occurs in sandy and clay desert with wormwood or *Salsola laricifolia*, on river and shore of lakes with meadow vegetation. Breeding in separate pairs. Nest is built in scrape under grass shelter and made from dry grass lined with soft grass and some vegetation fluff. Clutches of 3-5 eggs laid end April – early June. Incubates by female. Both parents feed juveniles, which fledge end May – early July. Probably, two broods are reared each year. Post-breeding flocks of 1-2 dozen birds are usual.

270. **Crested Lark** *Galerida cristata* (Linnaeus, 1758)

tenuirostris – *upperparts dark ochraceous, dark shaft streaks thick.* Occupies Western Kazakhstan, east up to Ural and Emba watershed and Utva-Ilek area (Berezovikov *et al*., 2000a).

iwanowi – *upperparts are paler and more sandy, dark shaft streaks narrower.* Occupies southern Kazakhstan from Mangyshlak up to foothills of Tien Shan and Dzhungarskiy Alatau, northern coast of Aral Sea, Betpak-Dala and Zaysan depression.

magna - *upperparts rusty buff, lacking any sandy shade.* Occurrence of individuals wandering into eastern areas of Kazakhstan near the boundary with China is possible.

Common, in some places rare, resident. Inhabits deserts and semi-deserts with low grass, near roads, in village outskirts, farms, and foothills up to 1800-1900 m, also rarely in saline habitats. Wintering mostly near human settlements. Appears at breeding grounds very early, in southern areas in late February – early March, but in northern ones in March, in pairs or small groups. Last spring migrants observed in mid April – early May at Chokpak Pass. Pairs breed separately. Nest is built on the ground in a shallow scrape under low vegetation and constructed from dry grass stems and rootlets lined with scraps of vegetation. Clutches of 3-6, more often of 4-5 eggs, found early April – early June. Only female incubates, for between 10 and 12 days. Both parents feed juveniles, which fledge in mid May – early July. Two broods reared per year, repeated breeding after loss of first nest is common. Autumn wandering in small groups begins end August – early September. Birds from northern areas move to winter in warmer southern areas. At Chokpak Pass mostly recorded in October.

271. **Wood Lark** *Lullula arborea* (Linnaeus, 1758)

arborea – collecled 1 November 1975 in the lower Turgay basin near Zhalauly lake (Auezov *et al*., 1978), between Atyrau and Ganyushkino recorded 18 October 1941. Probable nesting in a valley of middle current of Ural river (Kovshar, Sklyarenko, 1989) not confirmed, as near Orenburg observed on migration only (Zarudnyy, 1988). One bird recorded on Tengiz lake 1 October 2000 (Koshkin, 2003) but not proved documentary.

Rare passage migrant. Occurs in steppe and desert with reed beds and some bushes. No other information.

272. **Eurasian Skylark** *Alauda arvensis* Linnaeus, 1758

arvensis *– upperpart feather edges are darker, more brownish and ochre, and the general tone of the upperparts is darker, than on* ***dulcivox****.* Occupies Western Kazakhstan from Volga-Ural area (Gavrilov *et al*., 1968) and Turgay valley in west, to northern part of Ustyurt in the south and northern coast of Aral Sea (Varshavskiy, 1965). Occasionally wintering on Barsa-Kelmes island (Gistsov, 1978),

dulcivox *– edges of upperpart feathers are paler, more grey and less ochre. The general impression of the upperparts is paler than in* ***arvensis****.* Occupies territory from Turgay valley, east to Irtysh valley and Zaysan depression; northern and southeast Kazakhstan, south to Betpak-Dala (Kovshar, Levin, 1993).

alticola *– edges of feathers on the upperparts are wider, lighter and sandier in tone than on* ***dulcivox,*** *with finer dark shaft streaks.* Occupies southwest Altai to Irtysh valley in west and to Zaysan depression in south. Distribution on migration not been investigated.

dementievi *– streaking on the crown and upperparts is dark brown, a shade paler than in* ***dulcivox****. Feather edges are pale buff, without a hint of grey or white. Narrow streaking on throat and breast is brown. In fresh autumn plumage the streaks are paler brown, with buff brown edging, whereas in* ***dulcivox*** *dark streaks are almost black, and the edges of feathers are pale-grey.* Breeding in Dzhungarskiy Alatau, Tien Shan and its foothills, and in places on nearby plains.

Common, in places abundant, breeding migrant. Inhabits steppe (feathergrass/fescue, fescue/wormwood types), meadows, areas of meadow/steppe intergrades, fallow land, on or near agricultural fields, both on plains and in mountains up to 1700 m in Altai and 2000-2600 m in Tien Shan. During migration occurs on tracks, stubble, pasture and hayfields. Arrives late February – early March, when first thaw appears, and in end March – early April further north, in flocks of dozens or hundreds strong. Last migrants recorded late March – late April. Breeding in separate pairs, not very far from each other. Nest is built in shallow scrape under grass shelter and made from dry grass lined with thin grass and sometimes with hair or down. Clutches of 3-6 eggs found in early April – mid June. Only female incubates, for 14 days. Both parents feed juveniles, which fledge at 10 days old, early May – early July. On plains, in foothills and in Altai double brooded, repeated breeding after nest loss (normally due to predation by harriers or snakes) very common. Birds wander from end July – August, but autumn migration begins in September. Most birds leave in end September – mid October. Mass flights have been observed, especially after snowfall. Last migrants recorded late October – early November, with some lingering to early December. Sometimes wintering in Central Kazakhstan, and many remain in southern areas, particularly during milde winters.

273. **Oriental Skylark** *Alauda gulgula* Franklin, 1831

inconspicua - nests in southern Kazakhstan from territory east of the Aral Sea and the Syrdarya river delta up to Karatau foothills near Kyzylkol' lake (recorded 14-15 May 2000; Kovalenko *et al*., 2002), Chulak-Espe (Kovshar, Levin, 1993) and the Kopa river valley 100km west of Almaty (Kovshar, Berezovikov, 1995). In recent years it was found in Dzhungarskiy Alatau foothills, in western and northern foothills of the Tarbagatay ridge, northern foothills of Saur, Saykan and semi-desert by southern and western shores of Zaysan lake and at Kazakhskiy small-hills territory between Karaganda and Karkaralinsk (Berezovikov, Levin, 2001, 2002b, 2002c). On migration it is met in the Western Tien Shan foothills (Gavrilov, Gistsov, 1985), and in the Alakol' depression (Berezovikov, Levin, 2001).

Rare breeding migrant. Inhabits wet areas of low grass often interspersed with patches of *Lasiagrostis* on or near lake shores and rivers, areas of meadow between rice or wheat plots, fallow land, pastures and hilly steppe on plains and in foothills up to 500-1500 m. In spring appears mid March – early April in flocks of 50-120 birds. Breeds in separate pairs 150-200m from each other. The nest is built on the ground in shallow scrape under a tussock and is constructed from dry grass and rootlets lined with thin grass, sometimes hair. A clutch of 3-5 eggs is laid in mid April – early May. Females incubate for

11-12 days and feed juveniles, sometimes joined by their partners. Young fledge at 9-10 days old, in early May – first half of July. Double brooded. Sheep often trample nests and repeated breeding attempts are common. Singing males and pairs have been observed in the second half of June – first half of July. No data on autumn migration exists.

274. **Shore Lark** *Eremophila alpestris* (Linnaeus, 1758)

flava *- upperpart coloration is generally darker, more brown, less pink-grey, and with bolder shaft streaks, than on* ***brandti****. The forehead and throat are yellow or whitish-yellow. The black mask and collar do not merge and are separated by a yellow or whitish-yellow strip.* Wintering in plains only, but occasional on Markakol' lake (Berezovikov, 1989a).

brandti *– general colouring of the upperparts is lighter, more pink-grey, less brown, with lighter and narrower shaft streaks, than on* ***flava****. The forehead and throat are white. The black colouring of the cheeks and breast is divided by a white crosspiece.* Breeding in most plains areas, north up to Kamysh-Samarskiye lakes, Ilek river basin, Betpak-Dala, Kazakhskiy upland, Semeytau and Zaysan depression.

albigula *– general upperpart coloration is similar to that of* ***brandti****, but the lower back is more clay coloured. The forehead and throat are white. The black colouring of cheeks and breast is closed, forming a black ring around a white throat.* Breeding in highlands of Tien Shan, Dzhungarskiy Alatau, Saur and Chiliktinskaya valley (Dolgushin, 2002). Details of seasonal distribution are not known.

Common, in places numerous, resident or winter visitor. Inhabits desert and semi-desert with stunted vegetation on clay or stony tracts of low mountains and hills, edges of saline pans, sandy areas on plains, and alpine steppe and meadow on alluvial fans near snowfields at altitude of 2000-4000 m in the Tien Shan. During passage and in winter it prefers open habitats, roads, pastures, settlements and farms. In spring ***brandti*** pairs form end March, while ***albigula*** pairs form later from end April – mid May. Breeding in separate pairs not close to one another. Ground nest is built in shallow scrape under grass or stone shelter and made of dry grass and rootlets lined with soft grass and plenty of hair and vegetation fluff (such warm lining only in mountains). Clutches of 2-4 eggs are laid April – end June. Both parents (mostly female) incubate for 9-10 days, and feed juveniles, which fledge at 10-11 days old, at end May – mid July. Most pairs are double-brooded. Long breeding period can be explained by different phenology on plains and in highlands. For most of the year resident birds live in flocks of several dozen birds. Northern ***flava*** appear in autumn at end October – early November, and depart in March or April. Desert ***brandti*** winter on plains, whereas mountain ***albigula*** winter in foothills and low mountains.

Hirundinidae

275**. Eurasian Sand Martin** *Riparia riparia* (Linnaeus, 1758)

riparia *– the dark breast band is wider and the upperparts are darker than in other subspecies. It averages larger than* ***dolgushini****. Wing length is 103-115mm (109.1).* Breeding in northern half of Kazakhstan, south up to Caspian Sea, Syrdarya delta, lower reaches of Turgay river, Tengiz-Kurgaldzhinskaya depression and Zaysan lake. On migration occurs in southern areas.

dolgushini *– the dark breast band is narrower, and thinner in the centre. Upperpart coloration is lighter. The size averages smaller than nominate. Wing length is 103-111mm (106.8).* Breeding in southeast Kazakhstan, north to middle current of Syrdarya river, on Balkhash and Alakol' lakes. On migration occurs in southern areas.

Abundant breeding migrant. Inhabits bank of rivers, ponds and lakeside banks, low dry banks or sand pits situated far from water sometimes. Nesting occurs in sand or clay banks, clay walls of houses, wells and big human excavated holes with vertical walls on plains. Appears in early – mid April in southern areas, and in mid April – early May in northern ones, in flocks of 20-50 birds. At Chokpak Pass most birds migrate late April – first half of May, last recorded in late May. Breeding in colonies of 25 or more pairs, sometimes several thousand. Nest hole is excavated by both pair members, lined the chamber with dry grass and feathers over 3-7 day period. Clutches of 3-5 eggs appear late May – early July. Both parents incubate for 12-16 days and feed juveniles, which fledge at about three weeks old, from end June up to mid – end July. Some pairs rear two broods, repeated breeding is common, as some colonies are destroyed by strong waves. Autumn migration begins in mid August. Most birds leave late August – first half of September, often in mixed flocks with Pale Sand Martin, Barn Swallow, Red-rumped Swallow and European House Martin. Last migrants recorded late September – late October.

276. **Pale Sand Martin** *Riparia diluta* (Sharpe et Wyatt, 1893)

diluta *– the breast band is lighter and narrower, upperpart coloration is a little lighter and overall size smaller than* ***gavrilovi****. Wing length is 95-103mm (99.7).* Breeding in southern and south-eastern areas, northwards to Chimkent, Balkhash and Alakol' lakes. During migration occurs in outlying areas.

gavrilovi *– the breast band is wider and darker, the colouring of the upperparts is somewhat darker and the size averages larger than* ***diluta****. Wing length is 97-109mm (103.3).* Breeding in Altai and very common on migration in southeast and southern Kazakhstan. Its distribution poorly known.

Common, in places abundant, breeding migrant. Inhabits clay or sand banks by rivers, lakes and ponds. During migration occurs in deserts and also in reed beds, where large numbers congregate in communal roosts with Barn Swallows. Appears early – mid April in small flocks of 20-50 birds, settling to breed in colonies of several dozen pairs, often together with Eurasian Sand Martin. Both partners excavate nest hole and lined chamber with dry grass and feathers. Clutches of 3-5 eggs are laid late May – mid June. Both parents feed juveniles, which fledge in end June – mid July. Autumn migration begins in mid August. Pale Sand Martin migrating mostly in September in mixed flocks with Eurasian Sand Martin and Barn Swallow. Last birds recorded in early October.

277. **Eurasian Crag Martin** *Ptyonoprogne rupestris* (Scopoli, 1769)

Breeding in southern and eastern Kazakhstan, from Karatau and Talasskiy Alatau ridge to Zaysan depression (Borodikhin, 1970), in southern Altai (Berezovikov, 1989 a) and 22 May 1996 in Kalbinskiy Altai (Scherbakov, 1999b). On Mangyshlak (Karatau ridge) 7 birds recorded end April, breeding not proved (Karyakin *et al*., 2004). Here occurs on migration.

Rare, in places common, breeding migrant that inhabits rocky canyons covered by grass or shrubs, cliffs and gorges over springs and streams. Appears late March – early April. At Chokpak Pass singles are recorded early – late April. Breeding in small colonies of 12-24 pairs. Nest is built under a cliff ledge with mud balls lined with dry grass and feathers. Clutches of 2-5, more often 3-4 eggs, in end April – mid July. Only female incubates, over 14 days. Both parents feed juveniles, which fledge at age 25-26 days, end May – late August. Long breeding season may be due to double broods, but this not proved. Autumn migration occurs in September. Migration probably occurs over mountains at high altitudes, as this species not observed at Chokpak Pass. Last birds recorded in mid October.

278. **Barn Swallow** *Hirundo rustica* Linnaeus, 1758

rustica *– underparts white or light-ochre, the brown gular patch is medium-sized and not separate a dark breast band.* Breeds and also is seen during migration everywhere in Kazakhstan, but avoids higher places.

tytleri *– underparts are rich chestnut, the brown gular area is large and is usually separate a dark breast band.* It can be seen during migration in eastern and southern areas of Kazakhstan.

gutturalis *– underparts generally light-ochre or cream, less often white, occasionally light-chestnut. The brown gular patch is large and separate a dark breast band.* It too can be seen during migration in eastern and southern areas of Kazakhstan.

Common, sometimes abundant, breeding migrant. Inhabits human settlements (farms and villages), both on plains and in mountains up to 1800-2000 m in Tien Shan and 1500 m in Altai, often near water. During migration occurs in steppe and desert, meadows, and near rivers and lakes, especially with adjoining reed-beds, where they roost in huge numbers. Appear end March – early April in southern areas, and in mid April – early May in higher or more northern ones, in small flocks of 20 - 50 birds. At Chokpak Pass last migrants recorded end May – early June. Barn Swallow breeds in single pairs and loose colonies of several dozen pairs. Nest is built under roof eaves of houses, sheds, verandas, attics, sheep-folds, and cow-sheds; under bridges, in wells and on other suitable vertical surfaces. It constructed with mud balls mixed with some grass and hair and lined with thin grass, hair and feathers. Both partners build nest for 4-10 days. Clutches of 3-8, more often of 4-6 eggs, found at end April – mid August. Only female incubates, for 12-18 days. Both parents feed juveniles, which fledge at 20-22 days, in mid June – early September. Exceptionally late broods, fed by parents, have been recorded on 2 October 1962 and 6 October 1948. Two broods are reared annually and repeated breeding after loss of nest is common. Autumn migration begins in mid August. Most birds leave in mid September - early October, in mixed flocks with Pale Sand Martin, Sand Martin, Red-rumped Swallow and House Martin. At Chokpak Pass, a huge flock of 300-400000 birds was observed on 1 October 1967, counted between 1400 and 1700 hours. Last migrants recorded here mid – late October. In south-eastern Kazakhstan, mass mortality of Barn Swallows has been noted in spring and autumn, during spells of heavy rain, snow and frost.

Note - ***tytleri*** and ***gutturalis*** sightings on migration in the foothills of the Western Tien Shan (Borodikhin, 1970; Gavrilov, Gistsov, 1985) were not confirmed after subsequent analysis (Gavrilov, 1993b) of materials assembled according to Smirensky and Mischenko model (1981). *Per* S.M.Smirensky who studied our collection no authentic skins of these forms was found. However, theoretically, the occurrence of ***tytleri*** in Kazakhstan is quite probable (Gavrilov, 1993b). One Barn Swallow, ringed in spring 1983 at Chokpak Pass, found on May 7 1989 in China (Sinkiang), indicates migration route to breeding area of ***gutturalis***, and all three subspecies are known to winter in India (Ali, Ripley, 1987). It is known that specimens, not distinguished by colour from ***gutturalis***, can represent a population bridging Western and Middle Siberia, where ***rustica*** and ***tytleri*** hybridise. Race ***pseudogutturalis*** (Johansen, 1955) was described from this area.

279. **Red-rumped Swallow** *Hirundo daurica* Linnaeus, 1771

rufula *– underparts are pale ochre, marked with dark fine shaft streaks, imperceptible on some individuals.* Breeding in Tien Shan, Karatau, Dzhungarskiy Alatau and adjacent plains, during migration observed over southern Kazakhstan.

daurica *– underparts are pale ochre, the pale area more extensive than in* ***rufula*** *marked with dark shaft streaks.* Breeding in Irtysh and Bukhtarma valleys.

Common breeding migrant. Inhabits caves and cavities on cliff faces in mountains and in villages, farms and towns, both on plains and in foothills and low mountains (Karatau, Chu-Iliyskiye Mts.), up to 2000 m. Arrives early – late April singly, in pairs and small flocks. At Chokpak Pass last migrants recorded mid – late May. Pairs breed separately. Nest is built on a rock face or building (especially multi-storey ones) and fastened to horizontal surface from below. Both partners build it from mud balls and lined with thin grass and feathers for 5-15 days. Old nests are repaired if entrance tunnels exist. Clutches of 2-6, more often of 4-5 eggs, found end April – mid August. Both parents feed juveniles, which fledge after three weeks, from mid June to early October. Usually two broods are reared; repeat breeding after nest loss is common. Autumn migration occurs in mid August - September, most birds leaving mid September – early October. Last birds recorded in mid October. Occurs in mixed flocks with Sand Martin, Barn Swallow and House Martin. At Chokpak Pass hybrid with House Martin, *Hirundo daurica x Delichon urbica*, caught 23 September 1972.

280. **European House Martin** *Delichon urbica* (Linnaeus, 1758)

urbica *– upperparts are bluish-black with a dark blue sheen. The white rump is less extensive than on* ***lagopoda****. The longest upper tail coverts are wholly black or are only pale at the bases. The white rump and upper tail covert feathers sometimes have dark central shafts. The throat, breast, flanks and undertail are white, rarely showing a brownish-grey cast. The axillaries are brownish-grey. The tail fork is deeper than in* ***lagopoda****, about 15-25 mm. Wing length of males is 107-118mm (110.7), of females 104-115 mm (111.6).* Breeding from Ural'sk (Gavrilov *et al*., 1968) and Atyrau (Gubin *et al*., 1977) up to southern Altai (Markakol' lake) and Tien Shan, south to Sagiz station, Daumdzhar natural boundary by Emba river (Varshavskiy, 1965), Naurzum Reserve (Bragin, Bragina, 2002), Akmola (Andrusenko, 1984), Uch-Aral settlement (Khrokov *et al*., 1993) and Almaty. Everywhere is seen on migration.

meridionalis *- on the basis of colour, indistinguishable from* ***urbica****. This subspecies averages smaller in size: wing length of males is 98.5-111 mm (103.8), of females 100-108 mm (104.2); tail fork depth is 12-19 mm.* Breeding in western Tien Shan and Karatau. On migration recorded in southern and south-eastern Kazakhstan.

lagopoda *– upperparts are bluish-black with a dark blue sheen. The white rump is more extensive than on* ***urbica****. The upper tail coverts are wholly white, very seldom showing dark central shafts. The throat, breast, flanks and undertail are white, sometimes with a brownish-grey shade. The axillaries are brown-grey. The depth of the tail fork is much less than in* ***urbica****.* One young male caught on 30 September 1984 and other one on 19 September 1987 at Chokpak Pass in foothills of western Tien Shan (Gavrilov, 1993a).

Common breeding migrant. Inhabits caves and cavities in cliffs, rock faces, steep river banks, bridges, buildings and other constructions in towns and villages, both on the plains and in the mountains up to 1800 m in Altai and 3000 m in Tien Shan, close to water. Appears late March – early April in southern areas, and late April – mid May in northern ones and highlands in small flocks of up to dozen birds. At Chokpak Pass the last recorded mid – late May. Breeding in colonies of dozen pairs; single nests are very rare. Nest is built in cavity or under eave or cornice and from mud balls mixed with some

grass or hair and lined with thin grass and feathers. Both partners build it for two weeks. Clutches of 2-6, more often of 4-5 eggs, in early May – mid July. Both parents incubate for 12-15 day and feed juveniles, which fledge at 20-25 days, early July – mid August. Double-brooded, probably. Autumn migration begins in late July, most birds depart late August – mid September in flocks up to several hundred, with Barn Swallow, Pale Sand Martin, Sand Martin and Red-rumped Swallow often. Last recorded in early – mid October.

281. **Eastern House Martin** *Delichon dasypus* (Bonaparte, 1850)

dasypus – occurs on migration in mountains and foothills of eastern and south-eastern Kazahstan.

Rare passage migrant. Occurs together with flocks of other swallows. On Chokpak Pass repeatedly caught in early-mid September. No spring records.

Motacillidae

282. **Richard's Pipit** *Anthus richardi* Vieillot, 1818

richardi – breeding in Tekesskaya and Chulkudinskaya valleys, Usek valley in Dzharkent area, in Dzhungarskiy Alatau at Bayan-Dzhuruk, Tarbagatay ridge (near Pokrovka). In summer recorded on northern coast of Balkhash lake near Tasaral (Berezovikov, 2002b), in Alakol' and Zaysan depressions, in Bukhtarma and Ul'ba valleys, near Semipalatinsk and Semiyarskoye, but breeding not proved. On migration observed in Semirechye, in Chu valley and in foothills of Western Tien Shan (Gavrilov, Gistsov, 1985). Wandering birds noted in lower Turgay river (Burczak-Abramovicz, 1966).

Common, in places rare breeding migrant. Inhabits tussock marsh, wet sedge/herbaceous meadow, wet steppe, saline soil areas in marshy meadows, dry hummock country in foothills and mountains up to 1800-2000 m. During migration dry steppe, arable fields, hayfields and desert visited also. Appears end April or early May. Breeding in separate pairs. Ground nest made in shallow scrape from grass and lined with thinner and softer material. Nest not found in Kazakhstan jet. Clutches of 4-6 egg probably laid mid – end May. Juveniles fledge end June – late July. Most birds disappear in August, last bird recorded early September– mid November. At Chokpak pass caught and ringed 26 September 1973.

283. **Tawny Pipit** *Anthus campestris* (Linnaeus, 1758)

campestris – *upperparts are darker, browner and less grey, than in* ***griseus****. The medium-sized bill is rather thin.* Breeding in northern half of flat Kazakhstan, south to Caspian Sea, lower Irgiz river, Karaganda and Zaysan depression. On migration occurs south of this range. At once obtained at Markakol' lake (Berezovikov, 1989a).

griseus – *upperparts are paler and greyer than in* ***campestris****.* Breeding and migrating on plains of southern Kazakhstan, north up to Mangyshlak, Betpak-Dala, Balkhash lake and Tarbagatay.

Common breeding migrant. Inhabits open arid country with low thin grass in steppe, semi-desert and deserts (stony or saline soil), with some bushes or stones and rocks, both on plains and in mountains up to 1800-2000 m in Altai and 3000-3500 m in Talasskiy Alatau. During migration, river and lake shores, hayfields, stubble and other open habitats are used. Arrives mid March – early April in southern areas, and mid April – early May in northern ones, singly or in flocks of up to one-two dozen birds. Spring migration is over by end May. Breeding in separate pairs at several hundred meters each of other. Ground nest in shallow scrape under tussock, grass or bush and made from dry grass lined with thin grass and sometimes some hair and vegetation fluff. Clutches of 3-6 eggs between end April and mid July. Only female incubates for 13-15 days. Both parents feed juveniles, which fledge at 11-12 days, between mid June and mid August. Double brooded, and commonly replace nests lost to predators such as Steppe Viper, *Erix miliaris* and Common Cuckoo *Cuculus canorus*. Migration from northern areas inconspicuous, but in southern ones flocks of several dozen birds are formed. Most birds depart August – early September. Last recorded early – mid October.

284. **Olive-backed Pipit** *Anthus hodgsoni* Richmond, 1907

yunnanensis – breeding in Altai, where an adult and juvenile recorded on 22 July 2001 near Berel village (Berezovikov, Rubinich, 2001) and singing male observed 27 May 2002 on Rakhmanovskiye Springs (Ashbi, Annenkova, 2002b) . Before this, found at Seminskiy Pass only, near border with Russia. On migration occurs on plains in Volga-Ural area, near Balkhash lake 3 October 1936 and at Chokpak Pass 25 September 2002 (Gavrilov *et al*., 2002). Several birds recorded near Tengiz lake (Koshkin, 2003), but not proved documentary.

Rare breeding migrant. Inhabits forest edge and light taiga or spruce/birch forest at 900-2300 m. The patchy distribution of this species in Altai is well known (Sushkin, 1938). Appears in Siberia mid – late May. One bird collected 25 April 1965 by G.V.Lindeman near Dzhanybek village in the Volga/ Ural territory. Nest in shallow scrapes under grass or bush shelter from dry grass, sometimes lined with hair. Clutches of 4-5 eggs appears in June, juveniles fledge end July – August. Autumn migration begins in August (one obtained 10 August 1929 in Chinese Tarbagatay), but mostly in September probably.

285. **Tree Pipit** *Anthus trivialis* (Linnaeus, 1758)

trivialis *– the back is greyish olive-brown, lighter and dark underpart streaks are fainter than in* ***harringtoni****. The bill is smaller, its width at the base 4.1-4.7 (4.4) mm.* Breeding in northern half of Kazakhstan from Ural valley to Altai, south to Balkhash lake. On migration occurs everywhere.

harringtoni *– upperparts are darker and a trifle greyer, with darker and bolder shaft streaks on the breast than in* ***trivialis****. The bill is larger, its basal width 5.3-5.6 (5.5) mm.* Breeding in Tien Shan, Dzhungarskiy Alatau, Tarbagatay and Saur.

Common, in places numerous, breeding migrant. Inhabits glades, clearings, edges and burnt areas of deciduous and coniferous forest, groves, 'island' and light forest, juniper belt with single trees or rocks, fescue highland steppe near forest edge, both on plains and in mountains up to 2000-3100 m in Tien Shan and 1900-2300 m in Altai. During migration occurs in steppe and desert, on stubble fields, hayfields, forest-belts, tall weedy thickets and also at river and lake shores. Appears end March – early April in southern areas, and mid – end April further north, singly and in flocks of 10-50 birds. Last migrants recorded mid – end May. Breeding in separate pairs, 25-200 m from neighbouring pairs. Nest built on ground under grass, stone, bush or tree root shelter and is made from dry grass lined with thin grass and some hair. Only female builds it for 2-5 days. Clutches of 3-6 eggs are laid mid May – mid July. At one occasion, female gather nest material in Zailiyskiy Alatau on 25 July 1964. Only female incubates for 12-13 days. Both parents feed juveniles, which fledge at age 9-13 days, end May – late July. After a week or so, female builds new nest and lays second clutch. In highland areas (Zailiyskiy Alatau, Altai), only early breeders are double brooded. Repeated breeding after loss of first nest is common. Autumn wandering begins end July in mountains, but elsewhere in mid August – early September. Most birds depart mid – end September, last recorded end October.

286. **Pechora Pipit** *Anthus gustavi* Swinhoe, 1863

gustavi – on migration occurs on plain Kazakhstan, probably. One bird observed by German ornithologists 22 September 1999 on shore of Tengiz lake (Koshkin, 2002, 2003). This observation not proved documentary, but N.A.Zarudnyy (1912) obtained several birds near Tashkent and Chinaz.

Rare passage migrant. Occurs on wet meadows and shore of lakes singly and in small groups. In autumn records in mid September – mid October, in spring mid May.

287. **Meadow Pipit** *Anthus pratensis* (Linnaeus, 1758)

pratensis - on migration occurs everywhere in flat Kazakhstan and foothills of Western Tien Shan. Two pairs recorded in Ural valley 7 July 1957, and one obtained 2 July 1949 near Yanvarzevo village. On Mangyshlak observed near Shetpe station in May 2004 (Levin, Karyakin, 2005), single bird 24 April 2003 at Kolchengel (Kovalenko, 2005b).

Common, in places rare, passage migrant. Occurs on wet meadows, in grassy thickets along the shores of rivers and lakes; flood plains, hayfields, kitchen gardens and stubble fields, singly and in flocks of up to 20-30 birds. Spring arrival mid – end April, last birds observed mid – end May. In autumn appears early September – early October, most birds migrating in October, the last ones recorded in early – mid November.

288. **Red-throated Pipit** *Anthus cervinus* (Pallas, 1811)

cervinus - *upperpart streaking is lighter brown, the outer feather edges darker and more olive, less yellowish, than in* ***rufogularis****; the overall tone of the upperparts is less contrasting than in* ***rufogularis****.* Observed almost everywhere in flat Kazakhstan during migration – from Volga-Ural territory (Gavrilov *et al*., 1968) and lower Ural river (Gubin *et al*., 1977) to Semipalatinsk (Gavrilov, 1970). One bird collecled in lower reaches of Turgay river 10 October 1975 (Auezov *et al*., 1978), the other one recorded 17 September on Kyzylkol lake, in Karatau foothills (Gavrilov, Kolbintsev, 2004).

rufogularis - *upperpart streaking is darker and more contrasting, the outer feather edges being paler, more yellow than olive, than in* ***cervinus***. Sightings in eastern areas of Kazakhstan are possible during migration.

Common, in places rare, passage migrant. Occurs on grassy shores of rivers, lakes and flood plains (more rarely in steppe), singly or in small groups. In spring arrives end April, with most migrating in May; last observed in early June. In autumn birds appear in mid September, last recorded in early – end October.

289. **Water Pipit** *Anthus spinoletta* (Linnaeus, 1758)

blakistoni - breeding in highlands of Altai, in Saur and Tarbagatay ridges, Dzhungarskiy Alatau and Tien Shan. On migration observed on plains adjacent to mountains, west to lower Chu river.

Common, in places rare, breeding migrant. Inhabits alpine meadows from the forest belt up to the last patches of vegetation on rocky slopes with some juniper and dwarf-birch bushes at 2700-3500 m in Tien Shan and 1900-2500 m in Altai. During migration prefer for forest clearings, shores, stubble fields and hayfields in foothills and on nearby plains. Arrives mid – end March in small flocks of one-two dozen birds in Tien Shan foothills and early April in Altai foothills. After two-three weeks appear in highlands. At Chokpak pass, most birds migrate March – early April, last ones recorded mid April – early May. Breeding in separate pairs at distance of 50-200 m each of other. Nest is built on ground under tussock, root or stone shelter, from dry grass lined with soft grass and, more rarely, hair. Clutches of 3-6 eggs in mid May – early July. Only female incubates for 14-15 days; in some pairs male feeds female at nest. Both parents feed juveniles, which fledge at 12-15 days, at end June – mid August. Double brooded (proved by ringing in Talasskiy Alatau) and repeated breeding after loss of first nest is common. Autumn movement begins in early August in high areas. In foothills, at areas like Chokpak Pass, migration occurs from early September to early November, with most concentrated at end September – mid October.

290. **Buff-bellied Pipit** *Anthus rubescens* (Tunstall, 1771)

japonicus – occurs in plain Kazakhstan and in foothills of Western Tien Shan on migration. Birds obtained on Ural valley (13 October 1957 Kozhekharovo, 11 October 1973 Atyrau), 24 April 1967 in Chu valley (Baytal village), 25 October 1964 close to Taraz and 2 April 1969, 15 April 1983, 9 October 1969, 13 October 2002, 15 October 1984, 21 October 1971 and 25 October 1989 on Chokpak Pass.

Rare passage migrant and probably winter visitor. Occurs on wet meadow, shore of lakes and rivers. In spring recorded mid – end April, in autumn early – end October singly or in small groups (with Rock Pipit often).

291. **Yellow Wagtail** *Motacilla flava* Linnaeus, 1758

thunbergi - *the grey head is darker than in* ***flava****, ear coverts are usually blackish, not grey; white supercilium is faint or absent; the chin is yellow, sometimes white.* Observed throughout Kazakhstan on migration. On Chokpak Pass migrates 1 April – 25 May and 2 September – 26 September; on Sorbulak lake 31 March – 25 May and 2 September – 23 September.

flava *– crown, nape and ear coverts are paler than in* ***thunbergi****; the white supercilium is usually well-defined but occasionally absent; the chin and gular area is white, less often yellow.* Breeding in Volga-Ural region and occurs elsewhere on migration. On Chokpak Pass migrates 4 April – 18 May and 24 August – 12 September; on Sorbulak lake 6 April – 7 May and 21 August – 1 October.

beema *– crown and ear coverts are paler grey than in* ***flava*** *(sometimes even whitish) and ear coverts are often marked with white streaks; the white supercilium is well-defined; the chin is invariably white.* Breeding in northern part of Kazakhstan from Ural valley, east to Semipalatinsk. In southern areas occurs on migration. On Cokpak Pass migrates 1 April – 18 May and 28 August –1 October; on Sorbulak lake 3 April – 25 May and 17 August – 20 September.

zaissanensis *– the crown is as dark as in* ***thunbergi*** *and much darker than in* ***beema****. The upperparts are darker than in* ***flava*** *and* ***beema****. The majority of specimens have well-defined supercilium; the chin shows only a small amount of white compared to other subspecies.* Breeding in Zaysan depression, Chiliktinskaya valley (Dolgushin, 2002) and Irtysh valley, north to Semipalatinsk. On Cokpak Pass recorded 17-23 April 1983; on Sorbulak lake 11-17 April 1981.

leucocephala *– the entire head, including the ear coverts, is white.* Occurs on migration in southern and south-eastern Kazakhstan (Gavrilov, Gistsov, 1985). On Chokpak Pass migrates 15 April – 9 May and one record 24 September; on Sorbulak lake 17 April – 15 May and one record 12 September. One ringed at Alakol' lake 8 July 1981. One male recorded 10 May 2003 at Kolshengel.

Abundant breeding migrant. Inhabits wet meadows with tall grass and scattered bushes or thin reedy edges, borders of lakes and flood plains up to foothills at 400-450 m. During migration visits desert plains near water sources, reed beds (where birds concentrate in thousands), and (rarely) highlands up to 3200 m. Appears in mid March – early April in flocks of 30-150 birds in southern areas, and in mid – end April in northern ones. Most birds migrate mid April – early of May, last recorded mid – end May. Breeding in loose colonies, nests situated not far from each other. Nest is built in shallow bowl of ground under grass shelter and built from dry grass lined with hair and some feathers. Clutches of 4-6 eggs in mid May – mid June. Female incubates mostly for 12-13 days. Both parents feed juveniles, which fledge at 14-15 days, mid June – mid July. Replaced breeding after loss of first nest is common. Autumn migration begins late July – early August, most depart end August – mid September; last recorded early – end October or even early November.

292. **Yellow-headed Wagtail** *Motacilla lutea* (S.G.Gmelin, 1774)

lutea - breeding in northern Kazakhstan, south to Kamysh-Samarskiye lakes, lower Syrdarya river, Kurgaldzhino, Zaysan depression and Chiliktinskaya valley. Near Baykonur broods feeding by adults recorded in early August 2004 (Kovalenko, 2005b). Episodic breeding in Naurzum Reserve is known (Bragin, Bragina, 2002). In Western Kazakhstan (near Tel'nov settlement) it lives together with *M.flava* in loose colonies.

Rare breeding migrant. Inhabits vast meadows dotted with low shrubs, marshy meadows, and sparse reed beds on shore lakes together with Yellow Wagtail (*Motacilla flava*) often, though no hybrids is known. During migration occurs in reed beds, where it roosts with other wagtails. Arrives end March – late April in small flocks of up to 40-50 birds. At Chokpak Pass one male ringed 23 April 2000 and near Almaty one obtained 24 March 1916. Breeding separately in loose colonies, nests at 35-150 m from each other. Nest is built on ground under grass shelter, between tussocks, or in earth cracks 10-20 cm deep in meadow with low grass. Nest is constructed from dry grass and rootlets lined with hair and occasionally some feathers. Female builds only, male acting as escort. Clutches of 3-8, of 5 eggs often, in early May – mid June. Female incubates only for 11-13 days. Both parents feed juveniles, which fledge at 11-12 days, June – early July. Some pairs are probably double brooded. Autumn migration begins in August, last birds recorded in mid September. Identification of birds in non-breeding dress is impossible.

293. **Black-headed Wagtail** *Motacilla feldegg* Michahelles, 1830

melanogrisea – breeding and also migrate in southern half of Kazakhstan from Mangyshlak up to Alakol' depression, north up to lowers of Turgay and Ayaguz valleys. Recorded in summer in Volga-Ural territory in 35km north of Tel'nov settlement (Gavrilov *et al*., 1968), near Orenburg, on Batpakkol lake, between Emba river and Mugodzhary ridge, in Kurgaldzhino Reserve (Krivizkiy *et al*., 1985), along Irtysh river near Ust-Kamenogorsk (Scherbakov, 1978b) and in Zaysan depression at Kal'dzir river.

Abundant, in places common breeding migrant. Inhabits flooded meadows, shore of lakes with sparse reeds or tall grass and scattered bushes, mostly on plains but also probably in Tien Shan foothills up to 1000-1900 m. During migration it frequents pastures, areas of desert near lakes and reed beds, joining roosts of thousands with other *Motacilla* species. Appears mid March – early April, when birds arrive in flocks of several dozen individuals. Most birds migrate mid – end April, last recorded early – mid May. Breeding in loose colonies. Nest is built on ground under grass shelter or dry cowpat from dry grass lined with hair or thin grass. Clutches of 4-6 egg in late April – late June. Both parents feed juveniles, which fledge end May – mid July. Replaced nest after destroyed not rare. Autumn migration begins in August. Most birds leave end August – September, last recorded in early October.

294. **Citrine Wagtail** *Motacilla citreola* Pallas, 1776

citreola - *back is darker grey than in* ***werae***. Observed during migration in plains of Kazakhstan.

werae - *back is lighter, more ashy grey, than in* ***citreola***. *Birds average smaller than* ***quassatrix***. *Wing length of males is 74.2-83.0 (78.9) mm.* Breeding in northern part of Kazakhstan from Ilek river up to foothills of Altai, and also between Altai and Tien Shan. Passage distribution is poorly known.

quassatrix – *upperpart coloration as in* ***werae****; lighter grey than in* ***citreola***. *Larger then* ***werae***. *Wing length of males is 85.0-92.4 (89.0) mm.* Probably, this race nests an Altai in Chernaya Uba basin (Scherbakov, 1992b), on Markakol' lake (Berezovikov, 1989a) and in Dzhungarskiy Alatau and Tien Shan. During migration recorded in south and south-eastern Kazakhstan.

Common breeding migrant. Inhabits wet meadow with scattered shrubs, hummock marsh and meadows by mountain steams, as on plains and in mountains up to 1700 m in Altai and at 2300-2800 m in Tien Shan. During migration occurs on shore of lakes and in reed beds. Appears in early March – early April in southern areas, and in early April – early May in northern ones and in mountains, in flocks of 10-15 birds, often with Yellow Wagtail. Last migrants recorded in end May. Breeding by separate pairs in loose colonies. Nest is built on ground under bush or grass shelter, or in sedge tussocks up to 30 cm from surface water. It made by female mostly, from dry grass sometimes lined with hair. Clutches of 4-6 eggs found end April – early July. Both parents incubate and feed juveniles, which fledge end May – late July. Long breeding period is explained by phenological differences on the plains and in mountains. Autumn migration begins early August. Most birds leave end August – mid September, last recorded end September – mid October.

295. **Black-backed Citrine Wagtail** *Motacilla calcarata* Hodgson, 1836

Breeding in highlands of Northern and Central Tien Shan (Ketmen and Zailiyskiy Alatau ridges) where settles from Kyrgyzstan at recent years (Gavrilov *et al*., 1993; Kovshar, Gubin, 1993b) together with 'grey-backed' birds *M. citreola quassatrix* (also in Kyrgyzstan, where hybrids *M.calcarata* X *M.citreola* obtained). From Ketmen ridge it force 'grey-backed' birds, which were common there in 1953 (Korelov, 1956). It is common on breeding in Western Tien Shan (Uzbekistan) not far of Kazakhstan's boundary (Kovshar V., 2002e). In 2003 in upper Maidantal river (Talasskiy Alatau) two broods recorded in mid August on altitude 2480-3100 m (Chalikova, 2004a), and in upper reaches of Kaskasu river, 2600 m, nest was found 16 July (Ivashchenko, 2004). On migration occurs in foothills of Western Tien Shan at Chokpak Pass, on Sorbulak lake (Gavrilov, Gistsov, 1985; Gavrilov *et al*., 1993) and in Kolshengel (Kovalenko, 2005c).

Common, in places rare, breeding migrant. Inhabits wet mountain meadows on 2300-2800 m on river and stream shores usually with bushes (*Myricaria, Caragana*) and pebble. Appears end April – early May singly and in small groups with other wagtails. Last migrants recorded in foothills mid – end May. Nest is on ground under bush or grass cover or in cavity of small cliff and built by female. Birds with grass in bill were recorded mid June. Clutches of 5 eggs found mid May – early July. Both parents feed juveniles which fledge mid June –mid August. No data about wandering and autumn migration exists.

296. **Grey Wagtail** *Motacilla cinerea* Tunstall, 1771

melanope – breeding in Tien Shan and Karatau, in Dzhungarskiy Alatau, Tarbagatay, Saur, southwest Altai and Kalbinskiy Altai. Nesting is probable in Chu-Iliyskiye mountains (at Khantau), on western shore of Balkhash lake and in Kokchetav and Kazakhishe uplands, but data from these areas are absent. On migration recorded practically everywhere; on Ural river near Kulagino (Gubin *et al*., 1977), in lower reaches of Turgay river (Khrokov *et al*., 1990), in Kurgaldzhino Reserve (Krivizkiy *et al*., 1985), Naurzum Reserve (Bragin, Bragina, 2002), on Mangyshlak and in Tashkent area.

Common breeding migrant. Inhabits mountain rivers, lakes and streams up to 3000 m in Tien Shan and 1900 m in Altai, and rarely found on nearby plains at 500-700 m. During migration birds visit lake and river shores and reed beds on plains. Appears mid March – early May, singly or in small groups of 5-10 birds. Last migrants recorded end May. Breeding in separate pairs 40-100 m from each other. Nest is built on ground under stone or grass shelter, in precipice, in bridge culverts, wood piles, and rarely inside piping or in tree. It is made from dry grass stems and leaves, rootlets lined with plenty of hair, by both partners for 4-12 days. Clutches of 3-7 eggs found mid May – early July. Both parents incubate for 11-12 days, and feed juveniles, which fledge at 12-15 days, in mid June – end July. Some pairs in highland are double brooded (proved by ringing). Predated nests (Crow, Magpie, Cuckoo, Ermine) are commonly replaced. Autumn migration begins in August. Most leave in September, last recorded early – mid October.

297. **White Wagtail** *Motacilla alba* Linnaeus, 1758

alba *– back grey, throat black. Lacks a black stripe between bill and nape. White edges on greater and median coverts and tertials are narrower; the white wing patch is less extensive than in* ***dukhunensis***. Breeding at Volga-Ural region, including Ural valley.

dukhunensis *- back grey, throat black. Lacks a black cheek stripe. Shows wider white edging to wing coverts and tertials and more extensive white on the wings than* ***alba***. Breeding in northern areas from the Ural valley to Altai, south to lower Turgay river (Auezov *et al*., 1978) and Shortandy area

(Berezovikov, Kovalenko, 2001). Episodically breeds on Kalbinskiy Altai (Egorov, 2001). At Kurgaldzhino Reserve (Krivizkiy *et al*., 1985), on Markakol' lake (Berezovikov, 1989a) and further south observed on migration only. Recorded 24 December 1991 in Aksu-Dzhabagly (Kolbintsev, 1997).

ocularis *– back grey, throat black. Differs from* ***alba***, ***dukhunensis*** *and* ***baicalensis*** *in having a black eye stripe that runs from bill to nape and offsets a white supercilium. White edging of greater and median coverts and tertials is wide. Shows more white on the wings than* ***dukhunensis***. Occurs rarely on migration in southeast Kazakhstan (12 May 2003 Kolshengel, 11 April 1899 Kapchagay) at mid April – mid May.

baicalensis *– back grey, throat white. Black eye stripe absent. Wider white edging on greater and median wing coverts and tertials and shows a more extensive white panel on the wing than* ***ocularis***. Three birds obtained on migration in southeast Kazakhstan (11 April 1899 Kapchagay, 14 March 1899 Almaty, 8 April 1900 Dzharkent) at mid March – mid April (Zarudnyy, Koreev, 1906).

Common breeding migrant. Inhabits open areas near water in flooded ground, near forest `islands` and human settlements in steppe. During migration occurs in reed beds, where it roosts, and in foothills up to 1700 m. Appears early – mid March in southern areas, and end March – early April in northern ones, in flocks several dozen birds. Migrate in mid March – mid April mostly, last occurs mid – end May. Breeding in separate pairs at 35-200 m from neighbouring pairs. Nesting in shore banks, on ground under shrub or root shelter, in tree cavities 1-4 m off the ground, under bridges and in cavities of buildings. Both partners construct it from thin twigs, dry grass, moss and rootlets and line with plenty of hair for 3-25 days. Clutches of 3-8, more often of 5-6 eggs are laid early May – early July. Both parents incubate for 12-14 days and both feed juveniles, which fledge at 14-15 days, early June – mid July. Most pairs are single brooded. Repeated breeding after nest loss due to corvid or mustelid predation is very common. Autumn migration begins late August, most birds leave in September. Last recorded mid – late October. On Chardara reservoir one bird observed 18-21 December 2003 (Erokhov, Belyalov, 2004)

298. **Masked Wagtail** *Motacilla personata* Gould, 1861

personata – breeding in southern and eastern Kazakhstan, north up to Syrdarya delta, lower Chu valley, Balkhash lake, lower Shulba river and Semipalatinsk. It lives in Tien Shan up to 3300m (Kovshar *et al*., 1978), Dzhungarskiy Alatau, Tarbagatay, Saur, Altai and in Kalbinskiy Altai. Episodically breeds in Karkaralinsk. Between Semipalatinsk and Ust-Kamenogorsk a hybrid White x Masked Wagtail recorded (*per* N.N.Berezovikov). Wandering birds observed in Karaganda (V.A. Lenkhold) and Kurgaldzhino Reserve 22-27 March 1981 (Andrusenko, 1984, 1986a).

Common, in places rare, breeding migrant. Inhabits open areas near water with nearby precipice, rocks or buildings in desert and mountains up to 2500-3300 m in Tien Shan and 1700-1800 m on Altai. During migration rarely occurs up to 3800 m. Appears late February – early March in southern areas and late March – early April in northern ones and in mountains, by small flocks of 10-20 birds; last recorded late April – mid May. Breeding in separate pairs at 30-200 m from nearby pairs. Nest is built in precipices, in rocks, between stones in walls, in cavities of buildings, under bridges and in disused machinery. Tree nests are rare, on 2-3 m from ground in poplar, willow or spruce. Both partners built it from dry grass, twigs and rootlets lined with plenty of hair, some cotton and feathers, for 3-23 days. Artificial objects (cigarette ends, paper, wire) are also incorporated. Clutches of 3-7 eggs found end April – mid July. Female incubates only for 11-13 days. Both parents feed juveniles, which fledge at age 14-17 days, at end May – early August. Double brooded, repeated breeding after first nest loss is common. Autumn movement begins in mid August in higher areas that are abandoned mid September – early October. In foothills most birds migrate in September, last recorded in late October.

Bombycillidae

299. **Waxwing** *Bombycilla garrulus* (Linnaeus, 1758)

garrulus - on migration and in winter recorded in Kazakhstan everywhere, both on plains, and in mountains, for example 20 January 1980 at Big Almaty Lake in Zailiyskiy Alatau (Kovshar, Lopatin, 1983) and on Markakol' lake in the southern Altai (Berezovikov, 1989a). At once observed on Barsa-Kelmes island. (Gistsov, 1978).

Rare passage migrant or, by places, common winter visitor. Occurs in deciduous, mixed, coniferous and riparian forest, gardens and thickets, where the fruits of dog-rose, rowan-tree, elder, snowball tree, Russian olive and apple are found. In autumn appears end September or early October, in flocks of 10-100 individuals. Duration of stay depends on food source; when fruit is in short supply, birds fly to other areas. In some years Waxwing are very common in Kazakhstan. Most birds depart between February and March; last recorded in May – 1 June.

Cinclidae

300. **White-throated Dipper** *Cinclus cinclus* (Linnaeus, 1758)

leucogaster *– the underparts are white to the vent. In some specimens in fresh plumage a cream flush develops on the belly. The low back and rump are slaty with light brown tint.* Breeding in Tien Shan and Karatau, Dzhungarskiy Alatau and Tarbagatay, where intergrades with ***baicalensis***. In winter birds descend to nearby plains and lower areas like Chu river and Chu-Iliyskiye Mts.

baicalensis *– the underparts with some brown or rusty-brown tones. The degree of development of this directly correlates with an increase rusty-brown and a decrease of slaty coloration of upperparts. Some individuals have a white throat and breast, and a greyish brown forebelly, but in others the throat and breast are almost as dark brown as the rearparts.* Breeding in Saur and south-western Altai. In Tarbagatay it intergrades with ***leucogaster***. In summer recorded in Monrak ridge along Kyzyl-Gain river (Scherbakov, Mirkhashimov, 1997). In winter recorded along Irtysh river up to Semipalatinsk.

Common resident. Inhabits rapid mountain steams and rivers with rocks and stones, preferring smaller streams with bankside trees or shrubs, at 1200-2800 m in Tien Shan ridge, but at 600-1500 m in Karatau and 1000-2200 m in Altai. In winter occurs on plains in unfrozen water (including springs and ice-holes), departing from these areas in March – early April, or in late April in Altai. Breeding separately, with territories at least 100 m apart. Nest is built in rock or bank crevice, among roots, on big stones along river, under bridges, or often in rocky ledges behind waterfalls. Both partners build it from moss mixed with grass and rootlets, and lined with dry grass and leaves, for one or two weeks. Clutches of 4-7, often 5 eggs found April – early July. Female incubates for 15-17 days, male feed her sometimes. Both parents feed juveniles, which fledge at 23-25 days between late May and late July. One brooded, but in Talasskiy Alatau some pairs may be double brooded. Repeated breeding after nest loss is common (up to three attempts recorded). Autumn wandering begins September – early October.

301. **Brown Dipper** *Cinclus pallasii* Temminck, 1820

tenuirostris – breeding in Tien Shan from Talasskiy Alatau up to Kungey Alatau. Very rare it go down to Almaty where observed 28 October – 14 December 2004 (Karpov, 2005). One bird recorded on Orta-Tentek river (Dzhungarskiy Alatau) 20 July 2002 (Kovshar *et al*., 2002).

Rare resident. Inhabits rapid mountain rivers with rocks and stones, prefer larger rivers in the forest belt at 1500-3200 m. In winter occurs in the same habitat, not leaving mountains. Pairs breed more than 100 m apart. Nest is built on ledge or in crack of rock, behind waterfalls and more rarely between stones 0.3-2 m from surface. Nest consists of moss with some grass and rootlets and lined with dry leaves. Both parents build it for two weeks roughly. Some nests used over several years. Clutches of 3-5 eggs appear between late March and mid June and is probably incubated by female only. Both parents feed juveniles, which fledge mid May – July. A week after fledging, pairs build new nests and continue to feed fledglings. Double brooded and repeat breeding is common. Autumn movements begin late October – November.

Troglodytidae

302. **Wren** *Troglodytes troglodytes* (Linnaeus, 1758)

troglodytes *– brown upperparts lack any grey shade.* Wandering birds recorded along mid and lower current of Ural river, up to Atyrau (Gubin *et al*., 1977).

subpallidus *– differs from* ***tianschanicus*** *in having a less grey shade to upperparts, and warmer ochre tones to the rest of the plumage.* In autumn one specimen obtained at Mangyshlak (Mitropol'skiy, 1965).

tianschanicus *– upperparts show a more or less developed grey shade, which on the crown and nape appreciably contrasts with ochre brown mantle, rump and upper wing coverts.* Breeding in Tien Shan (Zailiyskiy, Kungey, Terskey, Ketmen' ranges; occasionally, since 1960, Talasskiy Alatau), Dzhungarskiy Alatau, Tarbagatay, and Saur, where 13-28 August 1991 was common (Scherbakov, 1999b). On wandering and in winter recorded in Zaysan depression (at Saur foothills), Ile valley up to delta, in Chu-Iliyskiye Mts., Talasskiy Alatau and its foothills, in particular at Chokpak Pass.

Common resident. Inhabits light spruce forest with plenty of wind-fallen trees and branches, boulders and fallen stones at 1500-2600 m. In Talasskiy Alatau one brood recorded at 3000 m in rocks of alpine belt. In autumn and winter on dispersal occurs in deciduous and riparian forest, gardens, in reed beds and tall weeds near streams. Spring movement occurs March – early April. Separate pairs form after

males attract females to previously built nests. As a rule, male construct several nests, which are situated under turf ledge of bank, between roots, in rock cracks, spruce trees or in human buildings. Nests are made from dry twigs and grass lined with plenty of hair and feathers. When female selects nest, she adds hair and feathers. Clutches of 4-6 eggs found between first half of May and mid July. Female incubates for 15-17 days and feeds the brood. Males deliver food to females but never enter the nest. If one of the pair disappears, the other continues to feed juveniles to fledging age (16-18 days), mid June – first half of August. Polygamy has not been proved in ***tianschanicus***. Double brooded, repeated breeding after loss of eggs or juveniles is common (up to four attempts). Autumn movement begins early September, or October, singly or in small groups.

Prunellidae

303. **Dunnock** *Prunella modularis* (Linnaeus, 1758)

modularis – recorded on migration in Ural valley south to Atyrau (Gavrilov *et al*., 1968; Gubin *et al*., 1977), in Ural-Emba and Utva-Ilek regions and at Mangyshlak (Mitropol'skiy, 1978; Berezovikov *et al*., 2000a). Vagrant birds noted in Naurzum Reserve 18 April 1972 (Smetana, 1974), Kurgaldzhino Reserve 10 April 1977 (Andrusenko, Khrokov, 1981) and near Chilik (Gubin, 2002e). In mild winters recorded on Barsa-Kelmes island (Gistsov, 1978). Several birds were ringed in the Kyzylkum desert in October 1973 (Kashkarov *et al*., 1974).

Rare passage migrant. Occurs in scrub, dense willow or poplar thickets, tall weeds, and reeds or reed-mace beds on reservoir shores. In spring occurs end March – late April. In autumn recorded singly or in small groups late September – November, mostly in October. Winter records from Mangyshlak 7 December 1966, Barsa-Kelmes island 19 January 1960 and near Chilik 10 January 1993.

304. **Siberian Accentor** *Prunella montanella* (Pallas, 1776)

montanella – single birds observed or collected in Katon-Karagay, Ust-Kamenogorsk (6 March 1968, 3 April 1968), at Kurgaldzhino Reserve (25 January 1970; Khrokov *et al*., 1977), Karaganda (5 August 1947, 8-20 October 1950, 21-28 October 1951, 19 October - 16 November 1952; Lenkhold, 1956) and in Naurzum Reserve (30 March 1993; Bragin, Bragina, 2002). One bird recorded 21 October to east of Ural delta (Karpov, 2004). It recorded in Ile valley16 December 1997 and 15 January 2000, in Almaty 2 November 1992 and 29 October 2002 (Panov, Korytko, 2002) and also in central Kyzylkum, Uzbekistan, where one bird obtained 24 October 1973 (Kashkarov *et al*., 1974; Mitropol'skiy, 1978).

Very rare passage migrant or winter visitor. Occurs in willow or Russian olive scrub along river shores, in kitchen gardens and tree plantations. Autumn singles and groups of 2-3 birds observed between early October and mid November and in winter recorded at Kurgaldzhino Reserve and in Ile valley. Spring observations range early March – early April.

305. **Black-throated Accentor** *Prunella atrogularis* (Brandt, 1844)

atrogularis *– upperparts are paler based, with less defined streaking than* ***huttoni****. The bill is also thinner. There is a whitish division between the black throat and ochre breast. The 1st primary is shorter than the greater primary coverts; the 2nd primary is longer than or equal to the 6th*. Occurs in Kazakhstan on migration and in winter. There are records from Ural valley at Orenburg and Burannaya, and probably this subspecies recorded in Kurgaldzhino Reserve (Koshkin, 2002, 2003), Karaganda, northern and central Kyzylkum (Mitropol'skiy, 1978). On Ile valley close to confluence with Charyn river one bird caught 5 December 2004, together with one ***huttoni*** (Panov, 2005). Details of distribution so far not well studied.

huttoni *– upperparts are darker, with bolder streaking than* ***atrogularis****. The bill is thicker. The 1st primary is usually equal to or longer than the greater primary coverts; the 2nd primary is shorter than the 6th*. Breeding in coniferous woods in Tien Shan, Dzhungarskiy Alatau, Saur and southwest Altai. In end June – early July 1996 observed in Aksu-Dzhabagly Reserve, on Kaskabulak (Kolbintsev, 1999). On passage and in winter recorded in Altai foothills, on Irtysh valley up to Semipalatinsk, in Kalbinskiy Altai, Zaysan depression, territory adjacent to north shores of Balkhash lake, in Ile valley to delta, lower reaches of Chu river, in Karatau and near Tashkent.

Common resident and/or passage migrant. Inhabits coniferous forest (spruce, larch, spruce/fir) with shrubby clearings; mixed forest with birch and asp, and light juniper/spruce forest at 1400-2800 m in Tien Shan, and 1400-2000 m in Altai. On passage occurs in gardens, forest-belt, riparian forest, tall weeds and rarely in reed beds. In spring, movements in southern areas observed between mid February

and mid April. In Altai appears late March – mid April, last migrants recorded mid May. Breeding in separate pairs 40-200 m each from other. Nest is built in tree (spruce, larch) or bush (juniper, honeysuckle, willow, dog-rose, cornel-bush) 0.4-15 m, often 1-2 m of ground, and is made from thin twigs, dry grass and moss lined with hair and sometimes with vegetation fluff and some feathers. Only female builds the nest over 7-18 days. Clutches of 3-6 eggs found early May – late July. Female incubates for 11-14 days, male only rarely feeding her. Both parents feed juveniles, which fledge at 11-14 days, mid June – mid August. Double, sometimes triple brooded, repeat breeding after nest loss is common. Autumn passage begins late September – early October. At Chokpak Pass singles of nominate subspecies were caught repeatedly 14-30 October in 1968, 1970, 1976, 1990, 1994-1995, 2003-2004.

306. **Brown Accentor** *Prunella fulvescens* (Severtzov, 1873)

fulvescens *– paler overall with darker grey (not black) crown than* ***dahurica****.* Breeding in Tien Shan and Dzhungarskiy Alatau, on wanders and in winter occasionally recorded lower down in Chu-Iliyskiye and Chulakskiye mountains.

dahurica *– compared to* ***fulvescens****, darker overall with a blackish crown.* Breeds in Tarbagatay, Monrak and Saur, and winters in Saur foothills (Kenderlykskoye plateau).

Common resident. Inhabits sub-alpine belt of high mountains with juniper bushes, alpine meadows with boulders and rocks at 2400-3300 m in Tien Shan. More rarely occurs in light juniper/ spruce forest. Most birds remain in breeding areas during the winter, but occasionally birds down, in scrub and gardens at 600-800 m. Breeding separately 100-300 m from each other. Males start singing mid – end March. Nest is built mostly in a bush (juniper, rowan-tree, honeysuckle), or in spruce tree, among rocks, in buildings, or on ground under bush or stone shelter, up to 5 m from ground. Female builds nest for 4-13 days, from thin twigs, dry grass (in summer fresh grass used also) and moss lined with hair, vegetation fluff and some feathers. Clutches of 3-6 eggs found in early May – late July and incubated solely by female for 10-12 days. Both parents feed juveniles, which fledge at 10-15 days, mid June – mid August. Some pairs rear three broods per year (proved by colour ringing), but most are double brooded. Repeated breeding after nest loss due to predation or nest parasitism (Stoat, Red Squirrel, Black-billed Magpie, Common Cuckoo) is very common.

307. **Alpine Accentor** *Prunella collaris* (Scopoli, 1769)

rufilata *- general colouring is lighter, dark streaking on the back is less defined, the grey on the breast and belly and the brown flanks are lighter. The brown flank feathers have little or no pale edging. The back, rump and upper tail coverts are grey.* Breeding in Tien Shan and Dzhungarskiy Alatau. In winter it descends to lower levels, and recorded in Chulak (Kzylaus gorge).

erythropygia *- general colouring is much darker, with heavier dark streaking on mantle and darker grey and brown coloration than in* ***rufilata****. The brown flank feathers show narrow pale edges. The mantle has an ochre wash and the rump and upper tail coverts are ochre-brown.* Probably, occurs in Altai.

Rare resident. Inhabits alpine belt among rocks and boulder fields near moraine and glaciers with small meadow patches down to upper shrub line, at 2800-4000 m in Tien Shan. In winter occurs in rocky areas with cliffs, and rarely in riparian forest, gardens and settlements at 1000-1500 m, singly or in small flocks of one-two dozen birds. Breeding in separate pairs fairly far from each other. Birds return to higher ground in mid March – early April. Nest is built in rocky cracks, small niches, between stones, or on ground under stone shelter from moss and dry grass lined with plenty of hair. Clutches of 4-6 eggs in mid June – early July. Both parents feed juveniles, which fledge in July. Autumn movement begins between mid November and early December.

308. **Himalayan Accentor** *Prunella himalayana* (Blyth, 1842)

Breeding in Tien Shan, Dzhungarskiy Alatau, Tarbagatay, Saur and southwest Altai. Migrates through mountains, one autumn record in Almaty Botanical garden exceptional. Records on lower Turgay river 10 October 1986 (Khrokov *et al*., 1990), on Alakol' lake 20 September 1987 (Khrokov *et al*., 1993) and on Sorbulak lake 16 September 1985 probably vagrants.

Common, in places rare, breeding migrant or resident?. Inhabits alpine meadows with rocks and some juniper bushes, boulder fields and moraine near glaciers and small meadow patches, or light juniper shrub layer with rocks and meadow patches at 2700-3500 m in Tien Shan and from 2100 m in Altai. Arrives in breeding areas in first half of April – early May in flocks of 50-100 birds. Pairs breed separately at 100 m or more from each other. Nest, well concealed, is built by female on ground under

stone or bush shelter, or in tussock and is made from dry grass, rootlets, and moss, sometimes lined with hair. Clutches of 3-7 eggs found late May – late July. Female incubates alone, for 13 days. Both parents feed juveniles, which fledge late June – early September. Long breeding cycle of this species can be explained by double brooding, though this not proved jet. Repeat breeding commonly occurs when nest loss. Autumn migration probably occurs in August and September. Last birds in highlands recorded mid – late September. There is one winter record of 4 birds at 1500 m in Talasskiy Alatau 4 February 1964.

Turdidae

309. **Rufous Bush Robin** *Cercotrichas galactotes* (Temminck, 1820)

familiaris – breeding and also migrating in deserts, north up to lower course of Emba river, northern edge of Karakum desert adjacent to Aral Sea (Chelzov-Bebutov, 1978b), Betpak-Dala (Kovshar, Levin, 1993) and area adjacent to Balkhash lake from south between Ile and Karatal deltas. On migration occasionally observed in foothills of Western Tien Shan at Chokpak Pass (Gavrilov, Gistsov, 1985), where ringed 3 May 1982 – 21 May 1995 and 16 August 2003 – 9 September 1987 and 1998. Vagrant recorded 31 May 1984 in Kurgaldzhino (Andrusenko, 1986a).

Common, in places rare breeding migrant. Inhabits desert bush thickets, coppice or old saxaul forest with dead trees and twigs, shrubby edge of riparian forest. On migration visits forest-belts and bushes in low mountains. Appears in end April – early May. Breeds in separate pairs at 150-850 m from each other. Nest is built on ground under bush, or in bush up to 1 m above ground from thin twigs, rootlets lined with hair, vegetation fluff and thin grass, by both partners or by female only. Clutches of 3-5 eggs in first decade of May – early July. Only female incubates for 10-13 days. Both parents feed juveniles, which fledge at 9-12 days old, in mid-June – early August. Probably one brood, and long time of breeding explained by repeated nesting after loss of first nest (giant lizard, corsac, fox, weasel, marbled polecat, grass-snake, Brown-necked Raven, Southern Grey Shrike). Autumn migration in August, latest recorded in early September.

310. **Robin** *Erithacus rubecula* (Linnaeus, 1758)

rubecula *– upper parts darker and less clean-grey, with more developed ochre-olive shade than* ***tataricus****; on upper tail coverts and on borders of outer webs of rectrices ochre-olive shade more developed; ochre colour on forehead, lore, throat and breast darker than* ***tataricus****.* Breeding in Western Kazakhstan on Ilek valley and in Karabutak river mouth (Zarudnyy, 1888), however last years here not recorded (*per* N.N.Berezovikov). On migration occurs in Volga-Ural area, in lower current of Ural valley, in lower current of Emba river, in Mugodzhary ridge, in lower reaches of Turgay river (9 and 26 October 1975; Auezov *et al*., 1978) and on Mangyshlak. In winter recorded on Barsa-Kelmes island (Gistsov, 1978).

tataricus *– upper parts lighter, cleaner-grey, with less developed ochre-olive shade than* ***rubecula****. On upper tail coverts and on borders of outer webs of rectrices ochre-olive shade less developed than* ***rubecula****. Ochre colour on forehead, lore, throat and breast lighter than* ***rubecula****.* Indication about nesting in Dzhungarskiy Alatau (Shnitnikov, 1949) not proved. On migration occurs in eastern Kazakhstan, west up to Naurzum Reserve 5 November 1971 (Smetana, 1974; Bragin, Bragina, 2002), lower Turgay river (Auezov *et al*., 1978) and Syrdarya valley. Recorded in highlands of Zailiyskiy Alatau (Big Almaty Lake 25 October 1975 and some lower 28 November 1977; Kovshar, Lopatin, 1983). Sometimes wintering in south-eastern Kazakhstan, from Ile valley up to foothills Western Tien Shan. Near Chilik three birds recorded 15 January 2000.

Common, in places rare passage migrant or winter visitor. Occurs in flooded plain forest, deciduous island groves, bush thickets, gardens, parks and forest-belts. Spring migration begins in end March – April, and is going up to end April. In Siberia, breeds in wet dense deciduous and mixed forest with bush thickets. Nest is built in tree hole, in stump and tree cracks low above ground, or on ground between roots from dry grass and moss lined with thin grass, rootlets and some hair. Clutches of 5-7 eggs in May – June. Only female incubates for 14 days roughly, juveniles fledge at 12-15 days old. Two broods. In Kazakhstan, autumn migration begins in mid – end September in northern areas, but in October only in southern ones. Usually occurs singly and in small groups. Latest recorded in early – mid November. In winter occurs in December – February.

311. **Thrush Nightingale** *Luscinia luscinia* (Linnaeus, 1758)

Breeding in middle and lower current of Ural river valley, in Northern Kazakhstan, Naurzum Reserve (Bragin, Bragina, 2002) and on Kokchetav upland (Zerenda, Borovoye), in Irtysh river valley between Dolon and Serebryanka (Kuzmina, 1970a), in foothills of Western Altai (Ulba, Uba), in Bukhtarma valley (Berezovikov *et al*., 1992) and on southern slope of Lineyskiy ridge (Scherbakov, 2001). Probably lives in Kurgaldzhino Reserve on Kulanutpes river, where singing birds recorded in end May – early June (Krivizkiy *et al*., 1985). In other territory occurs on migration.

Common breeding migrant. Inhabits bush thickets in flood-lands deciduous forest, groves, gardens, near of water often, on plains and in mountains up to 1000-1450 m. On migration visits forest-belts, reed-beds and thickets of tall weeds. Appears in end April – early May, latest migrants recorded in end May. Breeding in separate pairs at 70-200 m from each other. Nest is built on ground under grass or twig, between roots, very rare in blackthorn or blackberry 2-3 cm above ground, from dry tree leaves and grass lined with thin grass, bast strips and some hair for 4-5 days by female only. Clutches of 3-6, usually 4-5 eggs found in mid-May – mid-June. Only female incubates for 12-16 days. Both parents feed juveniles, which fledge at 10-11 days old, in end June – July. Repeated breeding after loss of first nest is common. Autumn migration begins in August, latest recorded in early September – early October.

312. **Common Nightingale** *Luscinia megarhynchos* C.L.Brehm, 1831

hafizi – breeding and migratibg in south-eastern Kazakhstan, west up to Syrdarya delta and Mugodzhary ridge (Tasbulak, Kunduzsu and Aulie rivers), north up to headwaters of Turgay river, Naurzum pine forest (Bragin, Bragina, 2002), upper reaches of Sarysu river, Kazakhishe upland (Tokrau, Kyzylray, Chubartau), Kalbinskiy Altai and Markakol' lake area in Altai (found in Azutau ridge and on Kal'dzir river; Berezovikov, 1989a). In summer recorded in Irtysh valley near Semipalatinsk, 6 June collected in foothills of Ul'binskiy ridge (Scherbakov, 1974). At once recorded in Kurgaldzhino Reserve 17 and 18 May 1985 (Andrusenko, 1986).

Common, in places abundant breeding migrant. Inhabits bush thickets in riparian forest, foothills and deciduous forest, groves, gardens, forest-belts, small bush patches in dry low mountains, near water often, up to 1600-2000 m. It lives in villages and towns. On migration visits thickets of tall weeds, reed-beds, kitchen gardens. Appears in mid-April – early May. Nest is built on ground or in bush up to 20 cm above ground, from dry grass, bast strips lined with thin grass and rootlets. Clutches of 3-5 eggs found in mid-May – mid-June. Only female incubates for 13-14 days. Both parents feed juveniles, which fledge in end June – mid-August. May be two broods, but this not proved. Repeated breeding after loss of first nest is common. Autumn migration begins in August, latest caught at Chokpak Pass in mid – end September.

313. **Siberian Rubythroat** *Luscinia calliope* (Pallas, 1776)

Breeding and also occurs on migration in Southwest Altai and its foothills (in Uba valley near Cheremshanka station). At once recorded nearby Semipalatinsk.

Common breeding migrant. Inhabits shrubby (blackcurrant, *Padus racemosa*) thickets of boreal coniferous forest, near river, stream or lake, on wet edge of forest at 1450-1900 m. Arrives in end May – early June. Breeding in separate pairs. Nest is built on ground under grass or twig from dry grass and shrub leaves lined with thin grass. Clutches of 4-6 eggs found in mid-June. Both parents feed juveniles, which fledge in early – end July. Latest recorded in end August – early September.

314. **Himalayan Rubythroat** *Luscinia pectoralis* (Gould, 1837)

ballioni – breeding and also occurs on migration in Tien Shan (to east from Aksu-Dzhabagly in Talasskiy Alatau) and in Dzhungarskiy Alatau (up to basin of Bolshoy Baskan river). One record in spring 10 May 1962 in foothill plain, nearby Korday settle in Dzhambul region.

Common breeding migrant. Inhabits shrub juniper belt with meadow patches and sometimes singles spruce tree at 2500-2700 m in Talasskiy Alatau, 2500-3000 m in Zailiyskiy Alatau and up to 3200-3300 m in Terskey Alatau. On migration at once it was met in bush on foothill plain. Arrives in end April – mid-May, males the first. Pairs are formed soon after appear of females. Breeding in separate pairs at 100-300, rarely of 30 m from each other. Nest is built by female only, on ground under grass, tussock, juniper or spruce twig or under stone from dry grass and moss lined with thin grass and rarely hair added, for 3-6 days. Clutches of 2-6, usually 4-5 eggs found in mid-May – mid-July. Only female incubates for 13-15 days. Both parents feed juveniles, which fledge at 16 days old, in end June – early

August. Two broods per season; repeated breeding after loss of first nest (Cuckoo, Ermine, Magpie) is often. In autumn disappears very early, soon after juveniles fledge. Latest in Big Almaty Lake area recorded in mid – end of August.

315. **Bluethroat** *Luscinia svecica* (Linnaeus, 1758)

svecica *– upper parts and light-blue breast colour darker than* ***pallidogularis****. Spot on light-blue breast ochre-rusty.* Breeding in northern Kazakhstan (Petropavlovsk, Selety lake), in Pavlodarskoye Trans-Irtysh'e (Kovshar, Khrokov, 1993) and in Kalbinskiy and Southwest Altai. Distribution on migration is not investigated.

pallidogularis *– upper parts and light-blue breast colour lighter than* ***svecica****. Spot on light-blue breast ochre-rusty.* Breeding widely, and also occurs on migration in plain Kazakhstan from Ural valley to east up to western foothills of Altai, Alakol' depression and middle current of Ile river valley, and to south up to lower of Syrdarya and Chu valleys. On migration occurs in Volga-Ural area, on Mangyshlak and in southern Kazakhstan also.

tianschanica *– upper parts as* ***svecica*** *and darker than* ***pallidogularis****, but more greyish, less brownish. Light-blue breast colour similar with* ***pallidogularis*** *intensity and lighter than* ***svecica****. Spot on light-blue breast white or ochre-rusty. Relative number of birds with white spot increase from north to south and prevail in Western Pamir. Ochre colour on under breast developed much less, than at other races.* Breeding in Tien Shan, north up to Kirgizskiy and Zailiyskiy Alatau (Kovshar *et al*., 1978), in places in Dzhungarskiy Alatau and may be in Saur. Distribution on migration not found out.

Common or in places abundant breeding migrant. Inhabits wet meadows and reed-beds with shrubs, shrubby river and lake shore, riparian forest and alpine belt with stones and pygmy birch thickets, up to 2500 m. On migration visits thickets of tall weeds, groves, forest-belts, gardens and kitchen-gardens. Appears in mid – end March or early April in southern areas and migration continues up to end May. In northern areas first birds recorded in April, and in Altai in end April – early May only. Breeds in separate pairs, at 30-200 m from each other. Nest is built on ground under grass or bush canopy from dry leaves, twigs, grass and moss lined with thin grass, rootlets and hair by female only for 3-7 days. Clutches of 3-6 eggs in mid-April – early July. Only female incubates for 11-15 days. Both parents feed juveniles, which fledge at 11-14 days old, in late May – end July. Two broods, repeated breeding after loss of first nest is common. Autumn migration begins in August, from most territory they leave in mid-September – end October. At once observed in Dzhabagly village 2 February 1948.

316. **Siberian Blue Robin** *Luscinia cyane* (Pallas, 1776)

cyane – breeding probably in Western Altai on Lineyskiy and Ivanovskiy ridges, where in upper reaches of Belaya Uba river young birds observed in mid-August (Scherbakov, 1986).

Accident breeding migrant. Inhabits light cedar forest and cedar-willow low forest at 1800-1900 m. Singles juveniles recorded mid-August 1975. In Siberia, nest is built on ground, under roots, twigs heap or dead tree from dry leaves and moss lined with hair. Clutch of 4-6 eggs in June, juveniles fledge in mid – end July. No nest in Kazakhstan was found.

317. **Red-flanked Bluetail** *Tarsiger cyanurus* (Pallas, 1773)

cyanurus – breeding in Western Altai on Lineyskiy and Ivanovskiy ridges (Scherbakov, 1974, 1978a). In Southern Altai in summer recorded in Altaiskiy Tarbagatay ridge (Scherbakov, 1995b) and on Markakol' lake (Berezovikov, 1989a). On migration occurs accidentally autumn 1920 near Kustanay, 29 September 1960 in Kurgaldzhino Reserve on Kulanutpes river and 9 October 1936 about Semipalatinsk (Kuzmina, 1970b). Two males collected near Orenburg.

Rare, in places common breeding migrant or an accident passage migrant. Inhabits height dense boreal coniferous or spruce-birch forest with wet soil and a lot of wind-fallen branches at 1200-2000 m, on migration visits bush thickets on steppe river. In Siberia, nest is built in precipices cavity, between roots, in tree holes or between moss stones at 0.2-1.0 m above ground from moss, dry grass and needles. Clutches of 5-7 eggs. No nest in Kazakhstan was found. In spring appears in early June. In some places singing males registered every one hundred meters, but in other ones after some kilometres only. A brood of well flying juveniles with adults recorded 2 July 1972. On plains singles observed in late September – end October.

318. **White-throated Robin** *Irania gutturalis* (Guerin, 1843)

Breeds and occurs on migration in Western Tien Shan: at Chimgan, on Ugam and Pskem rivers, in Talasskiy Alatau to east up to Kirgizskiy Alatau and in Karatau to the north up to Mynzhilke. In early May 1984 three males observed in Malaysary Mts., Dzhungarskiy Alatau (Lapshin, 2002). At 7 June 2003 two pairs recorded in Syugaty ridge, Zailiyskiy Alatau (Dzhanyspaev *et al*., 2004). On migration rarely occurs at Chokpak Pass (Gavrilov, Gistsov, 1985), where ringed 17 May 1987. At once (end May 1882) collected near Orenburg.

Common breeding migrant. Inhabits dry mountain slopes with rocks and bushes (dogrose, argan tree, buckthorn, barberry, hawthorn, rowan-tree, juniper) at 800-2200 m. On migration occurs in forest belt too. In spring arrives in end April. Breeds in separate pairs, quite far from each other. Nest is built in bush at 0.3-0.5 m above the ground, from grass stems and bast lined with dry grass and bast strips by female only. Clutch of 4-5 eggs in early May – beginning of June. Both parents feed juveniles, which fledge in mid-June. Independent juveniles observed in mid-July. In Talasskiy Alatau latest birds recorded in end August – mid-September.

319. **Blue-headed Redstart** *Phoenicurus caeruleocephalus* Vigors, 1831

Breeding in Tien Shan (west up to Aksu-Dzhabagly, where became common breeder in Kshi-Kaindy from 1970-th; Gubin, 1989b) and in Dzhungarskiy Alatau. In foothills rarely occurs on migration.

Common, in places rare breeding migrant. Inhabits old spruce forest with wind fallen branches and small rocks or big stones at 1400-2700 m in Zailiyskiy Alatau, and height juniper forest with some rocks at 1700-2000 m in Talasskiy Alatau. On migration visits deciduous and riparian forest, gardens, groves, forest-belts and bush thickets. Appears at low altitude in March – early April, at Chokpak Pass singles ringed 1-8 April, in breeding places in mid-April. Breeds in separate pairs at 100-250 m from each other. Nest is built by female (male escort her) on ground under spruce roots, stone or tussock, in precipices cavity, in cliff cracks or between stones from moss, thin twigs and dry grass lined with hair and feathers for 5-12 days. Clutches of 3-5 eggs in end April – late July. Only female incubates for 13-15 days. Both parents feed juveniles, which fledge at 15-17 days old, in early June – mid-August, as exception in early September. As a rule, two broods reared per year; repeated breeding after loss of first nest is common. Autumn dispersal begins in end August, many birds migrate in end September. On Chokpak Pass singles ringed 17-25 October in 2000-2001. Latest recorded in end October – late November.

320. **Eversmann's Redstart** *Phoenicurus erythronotus* (Eversmann, 1841)

Breeding in Zailiyskiy Alatau and Kungey Alatau, in ridges near Khan-Tengri, in Dzhungarskiy Alatau, Saur and in Southwest Altai. In end June – early July 1998 recorded in Aksu-Dzhabagly Reserve in gorge Koksay (Kolbintsev, 1999). On migration occurs in foothills and on nearby plains, west up to lowers of Ile, Chu and Syrdarya valleys at Dzhulek. Wintering in Dzharkent area, in Ile valley, in Chu-Iliyskiye Mts. and in Western Tien Shan. Vagrant bird recorded in Kazalinsk area and 23 October 1881 near Orenburg. Wintering in foothills, near Chilik 12 birds recorded 15 January 2000.

Common resident or short distant migrant. Inhabits upper part of forest belt and sub-alpine belt, from spruce trees up to last juniper bushes on alpine meadow, at 2300-3500 m in Tien Shan, and 1400-2000 m in Altai. In breeding area appears in early March – early April singly or in small groups, pair formation finishes up to mid-April. Breeding in separate pairs at 70-200 m from each other. Nest built by female only on ground under stone, bush or grass, rarely between stones, in cavities of road precipices or in human construction. It is constructed from moss, thin twigs, bast strips, dry grass and rootlets lined usually with moss with admixture of hair and feathers, for 5-12 (first clutch) or 3-5 days (second one). Clutches of 3-6, usually 4-5 eggs in end April – mid-July. Only female incubates for 14-16 days, male not feed her. Both parents feed juveniles, which fledge at 16-18 days old, in mid-June – early August. After this, juveniles fed by both parents during two weeks roughly, but female after some days begin to build the new nest at 6-250 m from first one and incubate. Two broods, as a rule, some pairs raise three broods, what established by colour ringing (Kovshar, 1979). Repeated breeding after loss of nest is common too. Autumn dispersal for lower altitude in end September – October, latest birds in Big Almaty Lake area recorded in end October. At Chokpak Pass singles ringed 4 April 1987 and 12 October (2004) – 26 October (2002).

321. **Black Redstart** *Phoenicurus ochruros* (S.G.Gmelin, 1774)

phoenicuroides *- male forehead black, frequently bordered behind by white or whitish strip; crown grey, sometimes with black shade; back varies from black (seldom) up to black-grey (usually); upper rump greyish, under rump brownish-ochre; outer webs of secondaries without whitish borders; axillaries brownish-ochre; throat and breast black; body sides and belly brownish-ochre.* Breeding in highlands of Tien Shan (possibly also in Karatau and Chu-Iliyskiye mountains), in Dzhungarskiy Alatau, Monrak and Saur, in Southwest Altai, Kalbinskiy Altai, in Kokon' Mts., Chingiztau, Kyzylray and Byurtas, and also in mountains Ulytau. Probably lives in area adjacent to Balkhash lake from north (Bektauata, rocks on Balkhash coast). On migration occurs usually in eastern Kazakhstan, to the west occasionally up to Kurgaldzhino Reserve (Andrusenko, 1984, 1986a), Syrdarya valley at Dzhulek and on Ustyurt (Kovshar, 1995). Regulary migrates in highlands of Zailiyskiy Alatau ridge, Big Almaty Lake, where observed 26 March – 30 April and 14 August – 22 September (Kovshar, Lopatin, 1983).

gibraltariensis *– male upper forehead as with narrow black strip; crown grey, upper back and rump grey; outer webs of secondaries with wide white or whitish borders (in wear plumage can disappear); axillaries grey, body sides and belly grey; throat and breast black with grey feather borders; central belly whitish frequently.* One male observed at border of Western Kazakhstan and Orenburg regions on bore-hole 21 April 1990 (Berezovikov, 2001). Since the bird not obtained, the author propose, that it may be ***gibraltariensis,*** which at last decades settles in European Russia to the east, or ***phoenicuroides,*** single of which recorded in cliff as far to the north, as Yamal peninsula 9 July 1998.

Common, in places rare breeding migrant. Inhabits dry rocky slopes with patches of meadow or bushes at 2700-2800 m in Western Tien Shan, and 1400-2100 m in Altai. On migration visits low mountains, riparian and saxaul forest, reed-beds, forest-belts, groves and gardens. Appears in mid – end March, and in highlands in mid-April – early May. Breeding in separate pairs. Nest is built on ground under stone, in cliff cracks, or in human buildings from dry grass lined with feathers. Clutches of 4-5 eggs in mid-May – early July. Both parents feed juveniles, which fledge in mid-June – end July. Some pairs rear two broods per year. Autumn dispersal begin in August, many birds migrate in September – early October, latest recorded in end October – early November.

322. **Common Redstart** *Phoenicurus phoenicurus* (Linnaeus, 1758)

phoenicurus *– general male colour less bright, white colour on forehead occupies greater space; grey back lighter than* ***samamisicus****. White wing "mirror" absent.* Breeding in middle and lower current of Ural valley and in lower Uil river, in Aman-Karagay and Naurzum pine forests (Bragin, Bragina, 2002), in Kokchetav upland and at northern border of Northern Kazakhstan, on Irtysh valley at Semipalatinsk, Semeytau, in Kalbinskiy Altai, in Southwest Altai and Saur. One worry pair observed at Rachmanovsky Springs 22 July 2004 (Starikov, 2005b). Occupies artificial nest-boxes in Dzhungarskiy Alatau at Topolevka settle (Sklyarenko, 1989, 1992). Isolated breeding in 1965 (three pairs) is known on Big Almaty Lake in Zailiyskiy Alatau (Gavrilov, Rodionov, 1968; Kovshar *et al*., 1978) and probably in eastern part of Dzhungarskiy Alatau (Berezovikov, Levin, 2002b). In summer recorded in Pavlodarskoye Trans-Irtysh'e (Kovshar, Khrokov, 1993) and about Kapal. On other territory occurs on migration.

samamisicus *– general male colour brighter, white colour on forehead occupies smaller space; grey back darker than* ***phoenicurus****. Wing frequently with developed white "mirror", formed by edges of secondary outer webs (sometimes absent).* Vagrant collected on Mangyshlak (Mitropol'skiy, 1965).

Common, in places rare breeding migrant. Inhabits deciduous, mixed and coniferous forest, "island" forest and groves on plains and in mountings up to 1800 m in Altai and 1900-2700 m in Zailiyskiy Alatau. On migration visits saxaul forest, reed-beds, forest-belts, bush thickets and gardens. In southern areas appears rarely in March, mainly in early April, migration finishes in end May or early June. In highlands first birds recorded in early – mid-May only. Breeding in separate pairs at 30-50, or 100-300 m from each other. Nest is built by female (male escort her sometimes) in tree hole, in stamp, under bark become detached from trunk, under house roof, in nest boxes at 0.5-6 m above ground, rarely on ground under stone or in cavity between stones. It is constructed from dry grass, bast and moss lined with hair and feather for 3-9 days. Clutches of 4-8 eggs found in early May – early July. Only female incubates for 11-14 days. Both parents feed juveniles, which fledge at 13-15 days old, in mid-June – end July. On plains, in Markakol' lake and in Zailiyskiy Alatau two broods reared per year. Autumn migration begins from second half of August, many birds leave in end September, latest recorded in mid – end November.

323. **Guldenstadt's Redstart** *Phoenicurus erythrogaster* (Guldenstadt, 1775)

grandis – breeding in highlands of Tien Shan (Kirgizskiy Alatau, Zailiyskiy Alatau, Terskey Alatau, Ketmen' ridges), probably also in Talasskiy Alatau (Aksu-Dzhabagly) and Dzhungarskiy Alatau (at Dzharkent), where recorded in summer. It nests in Saur highlands and in Southern Altai (Berezovikov, 1989a; Dolgushin, 2002). On dispersal and in winter it comes down in foothills and on adjacent plains, reaching up to lower of Ile river, Chu-Iliyskiye mountains and Karatau (Borolday). At Toraygyr ridge a male recorded 20 April 2003 (Kovalenko, 2005b).

Rare, in places common resident. Inhabits alpine belt with rocks and small patches of meadow or human constructions at 3000-4200 m in Tien Shan and 2200-2700 m in Altai. On dispersal and in winter visits riparian forest (600-800 m) and foothills, especially with rich berry crop of piperidge (*Berberis sp*.) and *Hippophae rhamnoides*. On breeding place appears in mid – end April. Breeding in separate pairs, quite far from each other. Nest is built by female (male escort her) in rock cracks, between stones or in human buildings from moss, dry grass and rootlets lined with plenty of feathers and some hair. Clutches of 3-4 eggs in May – early July. Only female incubates. Both parents feed juveniles, which fledge in early – end June. After this, male continues to feed them for two or three weeks, while female builds new nest and incubates second clutch. In Altai brood of two full grown juveniles with male recorded 29 August 1984. Dates of autumn dispersal are not well known. At low altitude and in foothills appears after strong snowfall in mountains, may be in end September - October. Near Chilik several birds recorded 15 January 2000.

324. **Whinchat** *Saxicola rubetra* (Linnaeus, 1758)

Breeding in middle and lower current of Ural valley, south up to Budarino, to the north of Aktobe, on Kokchetav upland (Kokchetav, Borovoye, Troitskoye), and also in Naurzum Reserve (Gordienko *et al*., 1980; Bragin, Bragina, 2002). A brood recorded 3 July 1998 at Belaya Uba valley (Scherbakov, 2001). In 10-12 June 1956 a pair observed in Karaganda area on inflow of Nura river. Occurs on migration to south, from Volga-Ural area up to lower of Sarysu river 1 and 6 September 1986 (Khrokov *et al*., 1991), Irtysh valley at Semipalatinsk and Ust-Kamenogorsk, in Alakol' depression, Almaty and Karatau (Kolbintsev, Chalikova, 2002a).

Common breeding migrant, in places rare passage migrant. Inhabits wet meadows with bushes and height grass, edges of deciduous forest and clearings with verdure. On migration visits open habitat only. Appears in mid – end April in loose flocks up to 30 birds, migration finishes in mid – end May. Breeding in separate pairs. Nest is built on ground under grass from dry grass lined with thin grass and some hair. Clutches of 4-7 eggs in mid-May. Juveniles fledge in end June – early July. Autumn migration begins in late July, many birds leave in August – early September. Latest records in mid – end September.

325. **Common Stonechat** *Saxicola torquata* (Linnaeus, 1766)

variegata *– at males white colour on rectrices widely distributed. At western population rectrices white from basis approximately up to half or a little less. At east population black colour on distal half of middle pair only and on final parts of other rectrices. Upper tail coverts white. Belly lighter, than at other races. Maximal development of white on rectrices is peculiar to population of northern coast of Caspian sea and Volga and Ural deltas.* Breeding and also occurs on migration on northern coast of Caspian Sea.

maura *– at males rectrices black with small development of white on bases (sometimes white almost absent and in such cases rectrices wholly black, only with weak lightening on bases). Upper tail coverts white (in fresh plumage with ochre ends). The least development of white on rectrices, sometimes up to complete disappearance, is peculiar to birds of Central Asia.* Breeding at northern and eastern Kazakhstan, from middle current of Ural valley up to Altai. To the south lives up to Ayryuk Mt. in Mugodzhary ridge, Irgiz valley (Varshavskiy, 1965), lower current of Turgay and Chu valleys (however recently here not found; Kovshar, Levin, 1993), Dzhungarskiy Alatau, Talasskiy Alatau and Ugamskiy ridge. On Altai a brood with 5 juveniles recorded 3 July 1998 at upper reach of Belaya Uba river (Scherbakov, 2001), on Rakhmanovskiye springs, in Saur and Chiliktinskaya valley (Dolgushin, 2002). On migration occurs everywhere, excluding Volga-Ural area (Gavrilov *et al*., 1968), Mangyshlak and Ustyurt.

Abundant, in places common breeding migrant. Inhabits open meadow and steppe places with bushes and height grass, edges of riparian and deciduous forest, kitchen-gardens on plains, and gently slopes with some bushes and height grass in mountains up to 2300 m in Altai and 3000-3200 m in Tien Shan. In southern areas appears in March – early April in loose flocks of 15-25 birds. Many birds migrate

in April, latest recorded in early May. In northern areas and in mountains arrives in April – mid-May. Breeding in separate pairs, not far from each other. Nest is built on ground under bush, grass or stone from dry grass lined with hair and feathers. Only female builds nest, male escorts her. Clutches of 3-6 eggs found in end April – late June. Female incubates for 11-14 days. Both parents feed juveniles, which fledge at 12 days old, in early June – end July. Long breeding is explained by wide latitude distribution, late phenology in highland, repeated breeding after loss of first nest, and two breeding cycles on plain probably. Autumn migration in highlands early, in late July – August, latest birds recorded here in end August. On plains main migration is going in late August – first half of September, latest birds observed in mid-October.

326. **Pied Stonechat** *Saxicola caprata* (Linnaeus, 1766)

rossorum – breeding and also occurs on migration in Kyzylkum oasis and Syrdarya valley from Kzyl-Orda up to Chinaz. In summer of 1984 observed in Biylikol lake area (*per* B.M.Gubin). In 18 June 1998 a pair recorded in Aksu-Dzhabagly Reserve in area of Aynakol lake, at 2360 m, where male with two juveniles observed 13 September 1996 and a pair birds 14 September 1997 (Kolbintsev, 1999). A second year male was ringed at Chokpak Pass 18 May 2004. Occurrence of vagrant bird near Orenburg 14 May 1882 is known too.

Rare breeding migrant. Inhabits wet meadow, river shore and irrigation channel with tall grass and some bushes, near villages often. Its biology in Kazakhstan don't known. Near Tashkent appears in end April. Nest is built on ground under bush or grass tussock, in stone building from dry grass lined with hair. Clutches of 5-6 eggs in early – mid-May. Both parents feed juveniles, which fledge at 10-12 days old. One brood. In autumn leave in August – early September, latest recorded in end September.

327. **Hodgson's Stonechat** *Saxicola insignis* Gray, 1846

At once a vagrant collected in Zaysan depression (Pleske, 1889), but date is unknown. Later, V.A.Khakhlov (1928) consider this bird as rare breeding in ridges nearby to Zaysan lake and autumn migrant. No new data was added up to present.

328. **Isabelline Wheatear** *Oenanthe isabellina* (Temminck, 1829)

Breeding and also occurs on migration mainly in southern half of plain Kazakhstan, north up to Chelkar lake, upper course of Chingirlau river, Naurzum, Kurgaldzhino Reserves (Krivizkiy *et al*., 1985), Shortandy area (Berezovikov, Kovalenko, 2001), southern coast of Selety-Teniz lake and Semipalatinsk area. Breeding also in Southern Altai in middle current of Bukhtarma valley (Berezovikov *et al*., 1992), in Zaysan depression and Chiliktinskaya valley (Dolgushin, 2002). In 18 June1989 one bird observed in Pavlodarskoye Trans-Irtysh'e (Kovshar, Khrokov, 1993). Occupies also mountain areas of Tien Shan (up to Ugamskiy ridge), Dzhungarskiy Alatau. In Tarbagatay breeding not proved, but near Makanchi a brood recorded 13 July 1982 (Starikov, 2002). On migration occurs on Markakol' lake (Berezovikov, 1989a). Information about breeding in Aktobe steppe and in Kazakhishe upland absent.

Common, in places abundant or rare breeding migrant. Inhabits open desert and steppe, where live Gerbilles and Ground Squirrels, and highland in mountains 1450-3200 m, where Marmot is common. On migration visits open habitats only. In spring arrives in early March singly or in loose groups of 10-15 birds, many birds migrate in April, when they appear in highlands. Breeding in separate pairs, not close each to other. Nest is built in uninhabited ground hole of rodent at 95-310 cm from entrance, rare in cavities of clay precipices or in clay made buildings. Only female builds it from dry grass lined with plenty of hair, sometimes vegetation fluff and cotton included. Clutches of 4-7, usually 5 eggs in mid-April – early July. Only female incubates for 12-15 days. Both parents feed juveniles, which fledge in mid-May – end July. On plains two broods per season, but in highlands only one. Autumn migration begins early, in end July. Many birds leave in August, latest observed in early – mid-October (once recorded 3 November 1965 at lower Ural river).

329. **Northern Wheatear** *Oenanthe oenanthe* (Linnaeus, 1758)

oenanthe – breeding in Kazakhstan practically everywhere, both on plains, and in highland, from Volga-Ural area up to Altai (Katon-Karagay), Dzhungarskiy Alatau and Tien Shan (Talasskiy, Kirgizskiy and Zailiyskiy Alatau, and also in Karatau). Does not live on Mangyshlak, in Kyzylkum, Betpak-Dala, Muyunkum desert, Chu-Iliyskiye Mts. and area adjacent to Balkhash lake. On migration occurs everywhere.

Common breeding migrant. Inhabits steppe, half-desert and clay desert with short grass and height numbers of Ground Squirrel and Marmot, overgrazing places near villages, alpine belt in mountains up to 3000-3300 m in Tien Shan. Open habitat used on migration. Arrives in end March – early April in southern areas, and in mid-April – early May in northern ones and in highlands. Breeding in separate pairs, not close each to other. Nest is built in uninhabited holes of rodent or Sand Martin, under stones or bridge, in stone piles, building ruins and other places. Only female builds it from dry grass lined with plenty of hair and feathers. Clutches of 4-7, usually 5-6 eggs in end April – late June. Both parents feed juveniles, which fledge in end May – mid-August. On plains probably two broods reared per year, bun in mountains only one. Autumn migration begins in August, many birds leave in September, latest recorded in mid – end October.

330. **Pied Wheatear** *Oenanthe pleschanka* (Lepechin, 1770)

pleschanka – breeding practically everywhere from lover current of Ural valley and Mangyshlak up to Pavlodarskoye Trans-Irtysh'e (Kovshar, Khrokov, 1993), foothills of Southwest Altai, Kalbinskiy Altai, Zaysan depression, Saur, Monrak, Tarbagatay, Dzhungarskiy Alatau and Tien Shan. Migratory status in Volga-Ural area is not clear (Gavrilov *et al*., 1968). In summer observed on Markakol' lake (Berezovikov, 1989a) and in early May on shore of Malyy Aksuat lake (Bragin, Bragina, 2002). Widespread during migration in Kazakhstan.

Common, in places abundant breeding migrant. Inhabits stony foothills and dry low mountains with rocks and scarce vegetation, human buildings and clay soil precipices up to 1900-2000 m in Altai and 2800-3000 m in Tien Shan. These habitats are used on migration too. Appears mid – end March in southern areas, and in April – early May in northern ones and in highlands (***vittata*** end March – early May). Intense migration recorded in April, when loose groups of 10-15 birds are common. Breeding in separate pairs, not far from each other. Nest is built under stone, in rock crack, precipice hole, under roof and in wall crack of buildings, rarely in rodent hole, from dry grass lined with thin grass and shrub bast. Only female builds it, male escorts her. Clutches of 4-6 eggs in second half of April – mid-June. Only female incubates for 13 days. Both parents feed juveniles, which fledge in mid-May – early August. Probably, two broods per season; repeated breeding after loss of first nest is common. Autumn migration begins in August, when birds leave highland, on plains many birds migrate in September, at Chokpak Pass latest recorded in end October.

Note. Position with "vittata" is completely not clear. Since E.Hartert (1910), it considered as colour morph of Pied Wheatear (*Oenanthe pleschanka*) from which males and females differ by white throat. Breeding from Trans-caucasia (Baku area) up to lower current of Ile river, south up to eastern Iran (Khashtadan hollow) and northern India, Gilgit (Zarudnyy, 1911; Gavrilov, 1970). Hardly possible to explain its origin by hybridisation of *O. pleschanka* with *O. hispanica* (Panov, Ivanitski, 1975) as in this case attracting by males of White-throated females (such pairs observed N.A. Zarudnyy) in areas where does not live *O. pleschanka* or *O. hispanica*, is really fantastic.

In Kazakhstan, ***vittata*** occurs mainly on Mangyshlak. Observed also near Aksu-Dzhabagly, in Karatau, at Chokpak Pass, near Karaoy, in vicinity of Kapchagay, at Sorbulak sewage water reservoir, about Iliysk settle, in Syugaty valley of Zailiyskiy Alatau (Annenkova, 2002b; Karpov, Belyalov, 2002c; Dzhanyspaev, 2004a).

331. **Black-eared Wheatear** *Oenanthe hispanica* (Linnaeus, 1758)

melanoleuca – breeding and also occurs on migration only on Mangyshlak from Taushik up to western chink of Ustyurt. Vagrant bird registered 7 May 1894 on Emba river near Temir river mouth (Sushkin, 1908).

Common breeding migrant. Inhabits stony places with rocks and clayey soil precipices. Date of arrival is unknown. Nest is built in rock, pile of stones or in precipice hole. Clutches of 4-6 eggs in end April – late May. Juveniles fledge in mid-June. Probably two broods. Date of departure is unknown.

332. **Eastern Pied Wheatear** *Oenanthe picata* (Blyth, 1847)

Interspecies systematic is not clear. Distinguish three colour morphs - ***picata***, ***opistholeuca*** *and* ***capistrata****, which some authors consider as subspecies, others give to them species status. Morph "****opistholeuca****": adult male black; rump, upper and under tail coverts white; in adult female upper parts from brownish-black up to dark-grey, throat and breast black or dark-brown, belly dark-brown with whitish streaks, sometimes under belly white.* Breeds in Kazakhstan only on extreme south, in Pistelitau

and at Darbaza station near Tashkent. Vagrants recorded 10 August 1892 on Mangyshlak at Aktau (Zarudnyy, 1896), 11 July 1881 in upper course of Chingirlau river (Zarudnyy, 1888) and 5 July 1888 in Grebenskiye Mts. (Zarudnyy, 1897). A pair recorded on Ustyurd at end April 2003 (Karyakin *et al*., 2004). *Morph "**picata**": adult male with black upper parts; rump and upper tail coverts white, throat black, all other under parts white; in adult female upper parts from brownish-black up to dark-grey, throat black or dark-brown, breast from light-brownish up to dirty-white, belly white.* In Kazakhstan is not met. *Morph "**capistrata**": in adult male crown, rump and upper tail coverts white, other upper parts black; throat black, all other under parts white; in adult female upper parts light, brownish-grey; throat and breast one-coloured, greyish-brown with light ochre shade.* Breeds in Kazakhstan only in extreme south, at Darbaza station, where on number ***opistholeuca*** dominates. Here in May 1985 on 2 km^2 mapped 15 pairs with *capistrata* males, 14 with *opistoleuca* and one pair with intermediate male between *capistrata* and *picata* (Lyubushchenko *et al*., 1986).

Common breeding migrant. Inhabits dry desert mountains, and clayey soil and conglomerate precipices near rivers, clay house ruins. In spring arrives in March probably. Nest is built in rock cracks, precipice cavities, in old Rock Nuthatch nest from dry grass lined with shrub or grass bast and sometimes with hair and feathers. When in rock, small stones are placed under front of nest (its weight 193 g in one case). Probably only female builds it. Clutches of 4-8 eggs found in April – mid-June. Female incubates for 12 days. Both parents feed juveniles, which fledge at 13-14 days old. Probably two broods. Autumn migration begins early, latest birds recorded in early September.

333. **Finsch's Wheatear** *Oenanthe finschii* (Heuglin, 1869)

Breeding and also occurs on migration on Mangyshlak (Karatau, Aktau) and Southern Ustyurt (Varshavskiy, 1965), and also in Kyzylkum desert adjacent to Syrdarya valley (Zarudnyy, 1915; Stepanyan, 1964). Breeding pair recorded 26 May 2004 in Kishikol ruins an Chelkar-Nura plateau (Bragin, 2005). In winter single observed on Mangyshlak 14 February 1963 (Mitropol'skiy, 1968).

Common breeding migrant. Inhabits hilly sands fasten by bushes, or stony places with rocks, chalky and clayey soil precipices. Appears in early – mid-March. Nest is built between stones, in rock cavities, in ground holes of Gerbilles and Ground Squirrels, in cracks and cavities of precipices from dry grass lined with plenty of hair and feathers. Between nest and entrance many small flat stones, sometimes glass, brick, faience splinters and flat bones, are placed (up to 720 g in weight). Clutches of 4-6 eggs found in late March – end May. Only female incubates for 12 days. Both parents feed juveniles, which fledge in early May – early July. Two broods. Autumn migration late, many birds leave in first half of November.

334. **Desert Wheatear** *Oenanthe deserti* (Temminck, 1825)

***salina** – white colour on primaries inner webs poorly developed, forms white edge and not touched to shaft. Male wing length 86.0-94.6 (92.4) mm.* Breeding and also occurs on migration in southern half of Kazakhstan, north up to Ural-Emba area (Zhamansor), area adjacent to Aral Sea from north, Dzhezkazgan area, Betpak-Dala (Kovshar, Levin, 1993), upper course of Sarysu river, area adjacent to Balkhash lake from north and Zaysan depression. A young bird caught in end July in lower Turgay river (Khrokov *et al*., 1990), in summer and in autumn repeatedly occurs in Tengiz lake area, where probably breeds (Khrokov *et al*., 1977; Andrusenko, 1984), in spring near Ust'-Kamenogorsk and in Belaya Uba river valley (Scherbakov, 1978b).

***atrogularis** – white colour on primaries inner webs poorly developed, forms white edges and not touched to shaft. Sizes more than **salina**. Male wing length 90.0-100.2 (94.6) mm.* Breeding in Southeast Altai in Chuyskaya steppe, in Kazakhstan can be found on migration.

Common, in places rare breeding migrant Inhabits sand desert with scarce vegetation, rare saline soil parts and clay-crushed stone deserts up to 400-1000 m. On migration occurs in the same habitat. Appears in March – early April. Breeding in separate pairs, not close each to other. Nest is built in uninhabited ground hole of rodents, among roots, under wind fallen saxaul tree, between stones or in clay precipices at 0.9-2.8 m above bottom. It is constructed from dry grass lined with hair and feathers, or thin grass and bast, or with both. Clutches of 3-6 eggs in end April – end May. Only female probably incubates for 14-16 days. Both parents feed juveniles, which fledge at 13-14 days old, in end May – late July. May be two broods reared per year, but this not proved jet. Autumn migration mainly in September, latest birds recorded in mid – end October, and in early November.

335. **Rock Thrush** *Monticola saxatilis* (Linnaeus, 1766)

saxatilis – *rusty breast, belly and under tail coverts darker than* ***turkestanicus***. Breeding locally in Mugodzhary ridge (Varshavskiy *et al*., 1977), on migration occurs in Volga-Ural sands, and also on Mangyshlak (Mitropol'skiy, 1965). Recorded in summer in Grebenskiye Mts. to south of Orenburg.

tukestanicus – *rusty breast, belly and under tail coverts lighter than* ***saxatilis***. Breeding and also occurs on migration in eastern half of Kazakhstan, north up to Saur ridge, Southwest Altai (Markakol' lake), Kalbinskiy Altai, Semipalatinsk area (Semeytau, Kokon), sources of Ishim river and in Ulytau. Breeding in mountains and foothills of Saur, Monrak, Tarbagatay, Dzhungarskiy Alatau, Tien Shan, and also Karatau ridge, west up to Mynzhilke. Probably nests in Betpak-Dala on Dzhambulgora (Kovshar, Levin, 1993). In summer recorded in Kyzylkum (near Timur station), in Syrdarya valley at Dzhulek and in Zerenda vicinities. Vagrant bird observed 11 May 1980 in Kurgaldzhino Reserve (Andrusenko, 1984).

Common, in places rare breeding migrant. Inhabits mountains with rocks, clay precipices and open places with some bushes and tree groups at 500-600 up to 2500-3500 m, but in sub-alpine and alpine belts its numbers very low. On migration visits steppe and desert plains with broken terrain. Appears in early – mid-April singly or in small groups, in highlands in early – mid-May only. Last migrants recorded in Kolshengel mid-May. Breeding in separate pairs not close each to other. Nest is built by female in cavity or in rock crack, between stones, in precipice cavity, grave monument, or on ground under stone, from moss, course grass stems, dry grass and rootlets lined the same more thin material. Clutches of 4-6, usually 5 eggs found in mid-May – mid-June. Both parents feed juveniles, which fledge in mid-June – late July. Autumn migration in August, latest birds recorded in early – mid-September.

336. **Blue Rock Thrush** *Monticola solitarius* (Linnaeus, 1758)

pandoo – breeding in Tien Shan, Karatau and Chu-Iliyskiye Mts. (possibly up to Dzhambulgora), in Dzhungarskiy Alatau and its foothills (at Abakumovka, Andreyevka *etc*.), in Arkarly mounts (Berezoviov, Levin, 2004), Tarbagatay and probably Monrak (Levin, Berezovikov, 2002). Vagrant birds recorded in Grebenskiye Mts. near Orenburg (12 September and 21 May 1890), in north-western spurs of Mugodzhary ridge (Dzharyktau; 25 June 1883) and 29 April 1985 in Kurgaldzhino Reserve (Andrusenko, 2002).

Rare breeding migrant. Inhabits rocky gorges with cliffs and rare vegetation in low mountains and foothills, sometimes without water, and clay precipices rarely from 500-600 up to 1600-2300 m. On migration visits groves, open meadows, stony shore of rivers or steams and forest-belts. Appears in end April – early May. Breeding in separate pairs fairly far from each other. Nest is built in rock cavity or in crack, from dry grass stems and thin grass lined with rootlets and bush bast by female only. Clutches of 3-7, usually 5 eggs found in mid-May – end June. Both parents feed juveniles, which fledge in end June – early August. Autumn migration begins in second half of August, latest birds recorded in early – mid-September.

337. **White's Thrush** *Zoothera dauma* (Latham, 1790)

varia – breeding in Zailiyskiy Alatau (Gavrilov, 1974c; Kovshar *et al*., 1978), in Kungey Alatau (Zhuyko, 1980) and probably in Dzhungarskiy Alatau (Shnitnikov, 1949; Kovshar, Berezovikov, 2001; Zhdanko, 2002). Singing male heard in mid June 2003 at Ivanovkiy ridge, Altai (Karpov, Panov, 2004). On migration occurs 3 September 1938 in Naurzum Reserve (Bragin, Bragina, 2002), 22 September 1957 about Karaganda, 29-31 May 1960 in northern Kyzylkum desert (Mortuk, 90 km south-west of Kzyl-Orda) and 23 September 1949 in Kerven gorge of Dzhungarskiy Alatau. In Ucharal village dead young bird found 7 October 2003 (Berezovikov, 2004b).

Very rare breeding migrant, or in places passage migrant. Inhabits spruce old forest with wind-fallen trees and brunches not far of river or stream at 1500-2680 m, on migration visits deciduous forest, grove, bush thickets. Appears in April – end May. Breeds in separate pairs, fairly far from each other. Singing was heard up to mid-June. Nest is built in tree at 2-4 m above ground roughly, from moss, twigs, dry leaves and fern lined with rootlets and dry grass, or rarely on ground. Clutches of 4-5 eggs in mid-May – early June probably, as brood of four fledglings discovered 7 July 1971 in Big Almaty Lake area, no adults were seen nearby. Two independent juveniles observed 13 July 1978 in Kungey Alatau, upper reach of Chilik river. In autumn singles are recorded in end August – early October.

338. **Blue Whistling Thrush** *Myophonus caeruleus* (Scopoli, 1786)

turcestanicus – breeding only in Tien Shan (Pskemskiy, Ugamskiy, Talasskiy, Kirgizskiy and Zailiyskiy ridges), and also in Kungey Alatau on Kul'say (Kovshar, 1972). Probably breeds in Malyy Karatau where 6 birds observed end August 2002 (Kolbintsev, Chalikova, 2002b). On migration occurs at Chokpak Pass (recorded 5 May 1969, 13 September 1973, 20 October 1971 and one ringed 20 April 2004) and in Chu-Iliyskiye Mts. On dispersal recorded 25 May 1987 at eastern Kyzylkum desert (Gubin, Sklyarenko, 1991), in mid-April – early May 1986 in Malyy Karatau (Kolbintsev, 1991), 27-29 April 1996 in Taukum desert (Berezovikov, Erokhov, 1996), 14 April 1973 in Chulak Mts. (Kovshar, Berezovikov, 2001) and 14 June 1980 in upper current of Charyn river (Kubykin, 1991). Occasionally winters in Zailiyskiy and Talasskiy Alatau, including Aksu-Djabagly (Chalikova, 2004) and Almaty (Kovalenko, 1991).

Rare, in places fairly common breeding migrant. Inhabits water streams with rocks and small waterfall in forest belt at 1100-2700 m. Appears in March – April. No visible migration observed. Nest is built for 6-10 days on cavity or ledge of cliff, on floodgate and under bridges, at 0.1-10 m above water (rarely aside of water stream) from moss, dry grass and rootlets lined with rootlets and leaves or birch bark. Cliff is used for breeding several years, as a rule new nest is built on old one, or in other place nearby. Clutches of 4-6 eggs in early May – end June. Female incubates for 17-18 days. Both parents feed juveniles, which fledge in mid-June – end July. One brood usually, but some pairs reared two broods per season. Repeated breeding after loss of first nest (wash away after strong rain) recorded too. Brood broke up after a week after fledge, and rest time birds live singly. Autumn migration, as spring one, is not clear. Latest birds recorded in mid-October – end November.

339. **Little Forktail** *Enicurus scouleri* Vigors, 1832

scouleri – in summer recorded in Ugam and Pskem valleys, and also 22 July 1960 in Talasskiy Alatau (Korelov, 1964), though after this it here did not find (Kovshar, 1966). However in 1973 in Aksu-Dzhabagly Reserve single bird observed, and in 1980 the nest with juveniles at 1800 m (Gubin, 1989b) found.

Very rare breeding migrant. Inhabits mountain streams with big stones and waterfalls in forest and sub-alpine belts at 1300-2900 m. Breeding in separate pairs at 2-4 km from each other. Nest is built by both partners in rock excavation behind waterfall usually, from moss and dry grass. Clutches of 3-4 eggs in June probably. Only female incubates. Independent juvenile observed in mid-August. In winter it lowers up to 900 m in steppe belt, but no winter records in Kazakhstan existed.

340. **Ring Ouzel** *Turdus torquatus* Linnaeus, 1758

amicorum – vagrant birds recorded 24 March 1962 on Mangyshlak (Sakakuduk, in 40 km from Aktau), in Ural'sk and 31 October and 7 November 1881, 16 April and 10 October 1883 in Orenburg vicinities.

Accident vagrant. Occurs in deciduous forest and among group of tree in desert on Caspian Sea shore in spring (end March – mid-April) and autumn (mid-September – early November).

341. **Blackbird** *Turdus merula* Linnaeus, 1758

merula *– general female colour lighter, rusty colour on breast more developed than* ***intermedius****. Bill thinner.* Breeding near Orenburg (Zarudnyy, 1897) is not supported with an actual material, last decades it not found on middle current of Ural river (Levin, Gubin, 1982) and in Utva-Ilek area (Berezovikov *et al*., 1997). Occurs on migration in Volga-Ural area, in lower current of Ural valley (last record at Chapaevo 10 November 1958), in Naurzum Reserve (Bragin, Bragina, 2002), on Emba and Syrdarya valleys, where as well as on Barsa-Kelmes island (Gistsov, 1978) occurs also in winter. Vagrant birds observed at Chelkar station 3 November 1963 (Garbuzov, 2005), in Ladyzhenka settle and Kurgaldzhino area in April-May and October (Andrusenko, 1986; Koshkin, 2002).

intermedius *– general female colour darker, more blackish, less greyish; rusty colour on breast less developed than* ***merula****. Bill thicker and more massive, general sizes more. Male wing length 132-145 (138.5) mm.* Breeding in Dzhungarskiy Alatau, Tien Shan and Karatau (Malaya Sunga, Kashkarata valleys); in foothills of Tien Shan it breeds in villages (*per* A.F.Kovshar), and its numbers increased here for last years by autumn observations at Chokpak Pass. One male observed at 14 May 2003 in Sarychagan. Recently it settled in north-eastern Kazakhstan. Since 1982 breeds in Western Altai in basin of Uba river (Mischenko, Baydavletov, 1987). On Southern Altai in headwaters of Bukhtarma river found in 1977 (Starikov, Zikh, 1990), and in 1992-1993 on Markakol' lake (Scherbakov, 1995b), where before vagrant birds observed only (Selevin, 1929; Berezovikov, 1989a). In winter it partially

comes down on adjacent plains (between Ust'-Kamenogorsk and Ridder, Makanchi, Alakol' lake, Ile valley near Iliysk, Chu-Iliyskiye Mts.), reaching up to Syrdarya valley.

Common resident, in places a common or rare passage migrant. Inhabits deciduous, mixed and coniferous forest, groves, gardens and forest-belts at 600-2600 m, not far of water often. Lives also in villages and big towns (Almaty). On migration visits riparian forest and reed-beds on lakes. In spring recorded in March and April rare. Breeding in separate pairs not less then 100 m from each other. Nest is built in deciduous or coniferous tree, on stump, in bush or human construction rarely, from twigs and dry grass mixed with wet soil and clay, and lined with dry grass, not height above ground often. Both parents, but mostly female, build it for 4-7 days. Clutches of 3-7, usually 4 eggs found in early April – mid-June. Mainly female incubates with some male help for 12-15 days. Both parents feed juveniles, which fledge in mid-May – early August. Two broods per season; repeated breeding after loss of first nest is common. In autumn rare migrants recorded from late August – early September up to end October – mid-November. At Chokpak Pass loose flocks up to 10-15 birds are moving in early morning at October.

342. **Naumman's Thrush** *Turdus naumanni* Temminck, 1820

Hybrid of Naumman's Thrush with Dusky (*Turdus eunomus*) or Black-throated Thrush (*Turdus atrogularis*) caught at Chokpak Pass 4 April 2002. One bird shot in Kyzylkum desert 18 October 1973 (Kashkarov *et al*., 1974)

343. **Dusky Thrush** *Turdus eunomus* Temminck, 1831

Vagrant Dusky Thrush registered 16 October 1927 in Syrdarya valley at Dzhulek settle (Spangenberg, 1941) and near Tashkent (Zarudnyy, 1910). In field it very resemble Black-throated Thrush, therefore collection skins are necessary.

344. **Red-throated Thrush** *Turdus ruficollis* Pallas, 1776

Occurs occasionally in Kazakhstan on migration and in winter, in Kurgaldzhino Reserve (Andrusenko, 2002), about Semipalatinsk 21 October 1922, on Sasykkol lake, close to Dzharkent, near Almaty 26 February 1936, at Chokpak Pass and on Syrdarya valley close Dzhulek 23 October and 8 November 1927. Hybrids with Black-throated Thrush repeatedly caught at Chokpak Pass (Gavrilov *et al*., 2002) and close to Dzharkent 13 January 1899. At spring obtained 9 May on Sasykkol lake and 24 March 1957 near Semipalatinsk.

Accident passage migrant, in places accident winter visitor. Occurs in riparian forest and forest-belts singly or in small groups in flocks with Black-throated Thrush in end October – early November, end February and in end March – early May.

345. **Black-throated Thrush** *Turdus atrogularis* Jarocki, 1819

Breeding in Southwest Altai, at Semipalatinsk, in Saur and Tarbagatay (upper reaches of Karabuga river). Nesting in Dzhungarskiy Alatau and Zailiyskiy Alatau (Koreev, Zarudnyy, 1906; Shnitnikov, 1949) are not supported with the fact data. In other territory of Kazakhstan, west up to Ural valley (Gavrilov *et al*., 1968) and Mangyshlak, occurs only on migration. Wintering in south of Republic, north up to Syrdarya valley and Semirechye, sometimes in highlands of Zailiyskiy Alatau (Big Almaty Lake; Kovshar, Lopatin, 1983).

Common breeding migrant, in places numerous passage migrant or rare winter visitor. Inhabits coniferous and mixed forest, where coniferous trees prevail, on its edges near streams, up to 2000-2200 m. On migration visits deciduous and riparian forest, groves, gardens, bush thickets, forest-belts and reed-beds. In spring migration begins in end February – early March and continues in April, in small groups or flocks up to several dozen birds. Latest birds recorded in end May. Breeding in separate pairs. Nest is built in tree (spruce, fir) at 1.5-2 m above ground, on stump, in bush or rare on ground from thin twigs and dry grass mixed with soil and lined with thin grass. Clutches of 4-7 eggs found in early May – early June. Both parents feed juveniles, which fledge in mid-June – mid-July. Autumn migration begins in August, on plains and in foothills they appear in September. Many birds fly in end September – first half of October, latest recorded in end October – mid-November. In south-eastern Kazakhstan they migrate in autumn through mountains mostly, as in spring by foothills and nearby plains. At Chokpak Pass several hybrids with Red-throated Thrush caught in spring and autumn.

346. **Fieldfare** *Turdus pilaris* Linnaeus, 1758

Breeding in middle current of Ural valley (Levin, Gubin, 1985), not far from Kherson settle (100 km north-east of Aktobe), in Zerenda (Gavrilov, 1970) and Borovoye (Karpov *et al*, 2002a), in Kazakhishe upland close to Zharma village (Berezovikov, Rubinich, 2001), near Karaganda (Stepanov, 1988), in Irtysh valley from Pavlodar up to Ust-Kamenogorsk, in Kalbinskiy Altai, in foothills of Western and Southern Altai, including Bukhtarma valley and Markakol' lake (Berezovikov, 1989a; Berezovikov *et al*., 1992). From 1993 it nests in Akmola vicinities (*per* A.F. Kovshar). On migration and in winter occurs in Kazakhstan everywhere. At 20 January 1980 observed in highlands of Zailiyskiy Alatau ridge, Big Almaty Lake (Kovshar, Lopatin, 1983).

Common breeding migrant, in places rare resident or winter visitor. Inhabits edges of deciduous and mixed forest on river and stream valleys, groves on plains and in mountains up to 1750 m. On migration visits riparian forest, bush thickets, groves, forest-belts and dry mountains. Spring migration begins in March and continues up to end April – early May singly or in small groups and flocks of 30-40 birds. On breeding grounds appears in end March (Ural River) or in mid – end April (Altai). Breeding in loose colonies of 10-50 pairs usually, at 10-100 m from each other, and in separate pairs. Nest is built by both partners in tree (willow, poplar, elm, birch, asp, larch, fir, spruce) mainly, but on stump, in cliff and under farm roof too, at 0.5-15, usually 2-4 m above ground. It is constructed from thin twigs and dry grass mixed with wet soil and lined with dry grass and bast strips for 3-5 days. Clutches of 3-10, usually 4-6 eggs in end April – late June. Mostly female incubates for 10-12 days, male helps rare. Both parents feed juveniles, which fledge at 10-13 days old, in end May – end July. Some pairs rear two broods; repeated breeding after loss of first clutch (Magpie, Hooded Crow, Pine Marten) is common. Autumn migration in flocks up to 100-200 birds begins in end August, but mainly in second half of September. Latest migrants recorded in end October – November.

347. **Song Thrush** *Turdus philomelos* C.L.Brehm, 1831

philomelos – breeding in Western and Southern Altai (in Zyryanovsk area, Malaya Ul'ba valley, to north of Ridder; and also in Bukhtarma valley, Ivanovskiy ridge and on Markakol' lake; Berezovikov, 1981, 1989a). Near Borovoye a brood of well flying young observed (Kovshar, 1996a). The indication on breeding in middle current of Ural valley "between Orenburg and Ural'sk" (Zarudnyy, 1897) is not confirmed by subsequent researches (Levin, Gubin, 1985). On migration occurs everywhere, from Volga-Ural area and Mangyshlak east up to Zaysan and Alakol' (Khrokov *et al*., 1993) depressions and Chokpak Pass in foothills of Western Tien Shan (Gavrilov, Gistsov, 1985). One bird shot in Kyzylkum desert 9 October 1973 (Kashkarov *et al*., 1974)

Rare breeding migrant, in places common passage migrant. Inhabits mixed and light forest from foothills up to 1200 m, on migration visits deciduous and riparian forest, groves, gardens, forest-belts, shrub thickets. Appears in April singly or in small flocks, migration finishes in early May. Breeding in separate pairs. Nest is built by female mostly (with some help of male) in tree at 1-8 m (usually 2-3 m) above ground, from thin twigs, lichen, moss, dry grass, it inside part well plastered by clay and soil, for 5-7 days. Clutches of 5-7 eggs in end April – early June. Only female incubates for 11-12 days. Both parents feed juveniles, which fledge at 14-16 days old, in early June – July. Very few data on breeding biology made impossible to conclude one or two broods are reared per year. Autumn migration in small groups and flocks of 2-3 dozen birds begins in mid – end September and continues up to end October – mid November. Many birds migrate through Ural River valley, but only two singles were ringed at Chokpak Pass 19 April 1987 and 24 October 2004.

348. **Redwing** *Turdus iliacus* Linnaeus, 1766

iliacus – breeding in middle current of Ural valley (Gubin, Levin, 1982; Levin, Gubin, 1985). In last decades appears in headwaters of Bukhtarma river on Southern Altai (Berezovikov, 1981) and in basin of Uba river on Western Altai (Mischenko, Baydavletov, 1987). There are indications about its accident breeding in 1985 in Naurzum pine forest (Bragin, Bragina, 1999, 2002) and in Borovoye (Kovshar, 1996). On migration occurs from Volga-Ural area and Mangyshlak to east up to Semipalatinsk and Ayaguz delta. At once observed on Markakol' lake at 16 October 1983 (Berezovikov, 1989a). In Kurgaldzhin Reserve singles recorded 25 April and 3 May 1969, 19 October and 3 November 1959. One bird observed at end November 2003 in Karkaralinsk (Khrokov *et al*., 2004). In mild winters singles recorded on Mangyshlak, near Chimkent and Tashkent.

Rare breeding migrant. Inhabits poplar forest with under growth, dead trees and twigs, or old willow forest with thick grass; on migration visits groves, gardens and riparian forest. Appears in April, on southern areas migration finishes in early May. Pairs are formed on breeding ground. Breeding in

separate pairs at 70-500 m from each other. Nest is built on ground under grass or dry twig, or in tree (poplar, willow or elm), in rose bush and stump up to 4 (usually below 2) m above ground. Only female builds it from dry grass mixed with soil, clay and lined with dry grass with admixture of dry leaves, bast and hair for 3-7 days. Clutches of 4-7, usually 5-6 eggs in end April – early July. Only female incubates for 9-12 days. Both parents feed juveniles, which fledge at 12 days old, in end May – end July. Some pairs rear two broods, when flooding is early and low. Repeated breeding after loss of first nest (out of Hooded Crow and Magpie) is common. In autumn migrates in small groups or flocks of several dozen birds in September – October, latest recorded in end November.

349. **Mistle Thrush** *Turdus viscivorus* Linnaeus, 1758

viscivorus *– upper parts darker, more brown, less greyish, spots on under parts somewhat larger and more numerous than* ***bonapartei****.* The indication about its breeding in middle current of Ural valley "between Orenburg and Ural'sk" (Zarudnyy, 1897) is not confirmed by researches in last years (Levin, Gubin, 1985). Occurs in Kazakhstan on migration, apparently from Volga-Ural area and Mangyshlak up to Mugodzhary ridge and area adjacent to Aral Sea from north.

bonapartei *– upper parts lighter, more greyish, less brownish, spots on under parts somewhat smaller and less numerous than* ***viscivorus****.* Breeding in Kokchetav and Kazakhishe upland areas, in Southwest Altai, in Kalbinskiy Altai, Saur, Tarbagatay, Dzhungarskiy Alatau and Tien Shan, west up to Pskemskiy and Ugamskiy ridges. On migration occurs mostly in east half of Republic, to west apparently up to Naurzum Reserve (Bragin, Bragina, 2002), Mugodzhary ridge and Syrdarya delta. In small numbers wintering on the south of Republic, from Syrdarya valley up to northern spurs of Dzhungarskiy Alatau.

Common breeding migrant, in places common resident or rare passage migrant. Inhabits mainly coniferous (pine, spruce, fir, larch, juniper), mixed or rarely deciduous forest and alpine meadow with rocks in mountains at 1000-3300 m, on migration visits groves, gardens, riparian forest, bush thickets, kitchen-gardens and reed-beds on lakes. Appears in March – April. Breeding in separate pairs at 15-80 m, but often not less then 100 m apart. Mainly female builds nest, male escorts her, or brings dry grass very rare. It is placed in tree (pine, spruce, juniper, birch, asp, willow, apple, rowan-tree) at 1-20 m above ground, or on rock in treeless highland from thin twigs, lichen and dry grass mixed with wet soil and lined with dry grass for 3-8 days. Clutches of 2-5, usually 4 eggs found in early April – end June. Mainly female incubates for 12-14 days, male helps her rare. Both parents feed juveniles, which fledge at 12-15 days old, in second half of May – mid-August. Two broods are reared in Talasskiy and Zailiyskiy Alatau, repeated breeding after loss of first nest is very common. Autumn migration in September – October in small groups, latest recorded in November – early December.

Sylviidae

350. **Cetti's Warbler** *Cettia cetti* (Temminck, 1820)

orientalis *– upper parts and grey sides darker than* ***albiventris****. Crown rusty-brown, more dark, on neck sides less advances grey shade, than at* ***albiventris****.* Breeding from middle current of Ural valley to east up to Naurzum Reserve (Bragin, Bragina, 2002), Akmola and Nura river valley at Rozhdestvenka settle. To north it penetrates up to Malyy Aksuat lake, to south - up to lower of Irgiz river and Taldy-Manak river, which inflow in Sarysu. On migration occurs to south.

albiventris *– upper parts and grey sides lighter, crown greyish-brown, more light, on neck sides more advances grey shade than* ***orientalis****.* Breeding and occurs on migration in southern half of Kazakhstan from mouth of Syrdarya river up to Zaysan depression, north up to Telekol lakes, Chu valley, Ust-Kamenogorsk area (Scherbakov, 1989a) and foothills of Southern Altai (Berezovikov, Starikov, 1991). In 2001 recorded by male songs in eastern part of Kazakhishe upland, near Zharma village, on western part of Kalbinskiy Altai and in upper course of Bukhtarma river (Berezovikov, Rubinich, 2001). Quiet song hear 3 February 2004 on Chushkakol lake (Erokhov *et al*., 2005) and 10 February 2004 at Karachengel (Bevza, 2005).

Common, in places rare breeding migrant. Inhabits bush thickets on river, lake and pond, riparian forest, reed beds with shrubs on plains and in foothills up to 750 m. On migration occurs in bushes and reed beds on river, lake and pound shores, and very rare in forest-belts. Arrives early, in March – early April. Breeding in separate pairs. Nest is built in bush from grass, leaves, rootlets lined with thin grass and rare some hair and feathers. Clutches of 4-5 eggs in May – early June. A brood of fledgling observed in mid-June. Male ceases to sing in end July – mid-August. Autumn migration late, latest birds recorded in end September – late November.

351. **Streaked Scrub Warbler** *Scotocerca inquieta* (Cretzschmar, 1826)

platyura – breeding and occurs on migration in Kyzylkum sands adjacent to Syrdarya river and in south of Mangyshlak in Karynzharyk sands (Kovshar, Korelov, 1972), broods recorded in 1998 in Ustyurtskiy Reserve area (*per* A.F. Kovshar). Two pairs recorded near Beyney village (Karyakin *et al*., 2004). One bird observed 16 September 2003 near Kyzylkol lake, in foothills of Karatau ridge (Gavrilov, Kolbintsev, 2004).

Rare, in places fairly common breeding migrant. Inhabits patchy desert scrubs, clay desert with *Salsola sp*., wormwood, tamarisk scrubs, and stony slopes with dog-rose bushes and single apple trees. Breeding in separate pairs, which form in end February – early March, up to 1-1.5 km apart. Spherical nest is built in bush (in Kyzylkum prefers *Salsola richteri*) from dry grass, bast and hair lined with feathers, at 0.2-1 m above ground. Both partners build it for one – two weeks. Clutches of 4-6 eggs in mid-March – early June. Both parents incubate for 15-16 days, and feed juveniles, which fledge at 16-18 days old, in mid-April – July. Two or rare three broods reared per year, repeated breeding after loss of a nest is common. The second or third breeding attempt coincides with feeding juveniles of previous brood, which situated nearby. Latest records end September.

352. **Pallas' Grasshopper Warbler** *Locustella certhiola* (Pallas, 1811)

centralasiae – breeding on Altai in woody parts of Ubinskiy, Ul'binskiy, Ivanovskiy, Lineyskiy and Kholzunskiy ridges (Scherbakov, 1978), in August 1987 a pair observed at foothills of Altaiskiy Tarbagatay (Scherbakov, 1989a). In 18 May – 12 July 1993 singing regularly heard 10 km north-east of Ust-Kamenogorsk (Scherbakov, 1999b) and two birds observed 30 August 2002 in upper current of Bukhtarma river (Belyalov, 2002b). Lives in Kondysu valley in foothills of Monrak ridge (Scherbakov, Mirkhashimov, 1997), in lower of Chernyy Irtysh river and in foothills of Dzhungarskiy Alatau near Dzharkent. In summer and on migration occurs in Alakol' depression (Khrokov *et al*., 1993).

Rare breeding migrant. Inhabits wet meadows and marshes with tall grass and scattered bushes and trees at 800-2100 m. On migration occurs in reed beds. Appears in mid-June. Breeding in separate pairs. Nest is built in dwarf birch bushes at 5-20 cm above ground, or in sedge tussock from dry grass. Clutches of 4-6 eggs in end June – late July. Both parents feed juveniles, which fledge in July – August. In autumn leave breeding places in late August – early September. On Alakol' lake recorded in end July – late August, near Dzharkent in end August – early September.

353. **Lanceolated Warbler** *Locustella lanceolata* (Temminck, 1840)

Single birds recorded at Dzharkent, on western coast of Balkhash lake (Kashkanteniz gulf) and near of Tashkent. One bird caught at Chokpak Pass 7 September 2002 (Gavrilov *et al*., 2002).

Very rare passage migrant. Occurs in meadows with tall grass and bushes, tussock sedge marshes, reed beds and forest-belts. Spring records 22 April 1900; autumn – 7 August 1952, 7 September 2002 and 19 September 1892. Near Tashkent two birds collected 28 September 1909.

354. **Grasshopper Warbler** *Locustella naevia* (Boddaert, 1783)

straminea – breeding in middle current of Ural valley, in Chagan river, in lower current of Utva river, in Ilek river upwards to Bish-Tamak. On Ural river lives down to Serebryakovo. Occupies also upper current of Irgiz and Turgay rivers, Aksuat lake (Gordienko, Moiseev, Smetana, 1980), Tobol valley (Blinova, Blinov, 1997), Nura and Kulanutpes rivers and Kokchetav upland lakes. Nests on Irtysh and Bukhtarma valleys (Berezovikov *et al*., 1992), in upper stream of Bystrukha river close to Ridder, in sources of Belaya and Chernaya Uba rivers, 80 km west of Ust-Kamenogorsk (Scherbakov, 2001), in Zaysan and Balkhash-Alakol' depressions, in foothills of Dzhungarskiy Alatau (from Dzerzhinskoye to Dzharkent), in Ile and Bayankol valleys, in Chulkudinskaya valley and in Zailiyskiy Alatau, Kurmekty, Kul'say, Tauchilik and Talgar valleys (Dzhanyspaev, 2002b). Probably nests on Markakol' lake (Berezovikov, 1989a). In other territory occurs on migration. Rare migrates in highlands of Zailiyskiy Alatau ridge, Big Almaty Lake, where observed 23 May 1974, 13 August 1972 and 7 August 1976 (Kovshar, Lopatin, 1983).

Common breeding migrant Inhabits meadows and marshes with tall grass, bushes and reeds, both on plains and in mountains up to 1700-2700 m. On migration occurs in grass and bushes near rivers, lakes and ponds, in tall weed thickets and forest-belts. Arrives mid-April – early May in southern areas, where latest migrants recorded in end May – mid-June, and in mid – end May in northern ones. Breeding in separate pairs, not close each to other. Nest built on ground under grass, dry reed heap or bush from dry grass lined with thin grass and hair. Clutches of 4-7, usually 5-6 eggs end May – late June. Both parents feed juveniles, which fledge at 10-11 days old, in end June – late July. Singing head up to

mid-July. Autumn migration begins from mid-July, most leave in August, latest recorded end September – early October.

355. **River Warbler** *Locustella fluviatilis* (Wolf, 1810)

Breeding in middle and lower current of Ural valley, south up to Chapaevo settle, and also in lower of Ilek river. On migration occurs in Ural valley down to Atyrau (Dubinin, Toropanova, 1956; Gubin *et al*., 1977), in Utva-Ilek area (Berezovikov *et al*., 2000b), in lower of Sarysu river (17 August 1986; Khrokov *et al*., 1991).

Rare, in places accident breeding migrant. Inhabits wet meadows, shore of rivers and lakes with tall grass and bushes, forest shoots (birch, alder), where occurs on migration too. Appears in early April – end May. Breeding in separate pairs. Nest is built on ground under bush or grass, sometimes on tussock with thick grass, from dry leaves and grass lined rarely with hair. Clutches of 5-6, rarely of 7 eggs in June, juveniles fledge in July. Autumn migration begins in end of July, most birds leave in August, latest recorded 26 September 1961.

356. **Savi's Warbler** *Locustella luscinioides* (Savi, 1824)

sarmatica *– upper parts more olive-brown. Under parts darker.* Probably, this race breeds in Western Kazakhstan and northern Caspian Sea (Berezovikov, Gistsov, 2001), to what race meetings on Mangyshlak concern is not known.

fusca *– upper parts more olive-grey, less olive-brown than* ***sarmatica****. Under part lighter.* Breeding in significant part of Kazakhstan, south from upper current of Irgiz and Emba rivers, Naurzum lakes (Gordienko, Moiseev, Smetana, 1980; Bragin, Bragina, 2002), Kurgaldzhino Reserve and Zaysan depression. Here occurs on migration. On Chokpak Pass recorded 26 April 1972, 30 April 1970, 6 September 1969 and 9 October 1973. Four birds recorded in Aksu-Dzhabagly Reserve on Aynakol lake, at 2360 m in mid-June – early July 1998 (Kolbintsev, 1999).

Common, in places rare breeding migrant. Inhabits boggy places in willow bush thickets, sedge marsh, wet meadows with tall grass and bushes, reed beds. On migration occurs in bushes, reed and reed mace beds on shore of rivers and lakes and very rare in forest-belts. Arrives in April – early May, last migrants recorded end May. Breeding in separate pairs. Nest is built in reed piles at 2-30 cm above water from dry reed leaves. Clutches of 4-5 eggs in end May – early June. Only female incubates for 12 days, male feeds her. Both parents feed juveniles, which fledge at 12-14 days old, in July. Autumn migration in August, latest birds recorded in mid-September – early October.

357. **Moustached Warbler** *Acrocephalus melanopogon* (Temminck, 1823)

mimica – breeding in northern coast of Caspian Sea near Ganyushkino and in Ural delta, in Syrdarya valley from delta to Chinaz, in Balkhash-Alakol' depression and on Alakol' lake (Khrokov *et al*., 1993). At 30 June 2003 a juvenile bird caught in Kurgaldzhin Reserve (Koshkin, 2004). In summer obtained 2 August 1951 in lower current of Chilik river and displaying male observed in Tekes reservoir 14 July 2002 (Berezovikov, 2002g). On migration occurs at Taraz, on Biylikol lake, on Chokpak Pass 17 April 2002, 17 September 1967, 29 September 1969, in lower of Chu river and about Tashkent.

Common breeding migrant. Inhabits shore of rivers and lakes with reed, rush, reed mace beds and some bushes on plains and in mountains up to 1800 m. On migration occurs in forest-belt and tall weed thickets too. Arrives early – mid-March, or early – mid-April. Migration finishes mid – end May. Breeding in separate pairs. Nest is built in old reed heaps, rush and reed mace beds and in bush, not height above water, from dry grass mixed with vegetation fluff. Clutches of 3-6 eggs in end April – mid-May. Juveniles fledge in July. Autumn migration mostly in September, latest birds recorded early – mid October.

358. **Sedge Warbler** *Acrocephalus schoenobaenus* (Linnaeus, 1758)

Breeding in northern half of Kazakhstan from Volga-Ural area up to Zaysan depression, south up to northern coast of Caspian Sea, mouth of Temir river, lowers of Irgiz and Turgay rivers, upper course of Sarysu and Nura rivers, Zaysan lake, and also in lower of Syrdarya from mouth up to Baygakum station. Nests also in Altai on Markakol' lake (Berezovikov, 1989a) and on Irtysh river. In summer and on migration repeatedly occurs on Mangyshlak, in Syrdarya valley (Solotyube and Karauzyak stations, Baubenaral lake) and on Alakol' lake (Khrokov *et al*., 1993).

Common breeding migrant. Inhabits rush (*Scirpus sp.*) and reed (*Phragmites communis*) thickets with bushes. On migration occurs in bushes, reed beds, and rarely in wormwood steppe. Arrives in end

April – early May, migration finishes in end May – early June. Breeding in separate pairs, not far from each other. Nest is built in thick grass, reed mace, rush, low reed, willow or on ground, and rarely on shallow water in low height, from dry grass and moss mixed with cobweb lined with thin grass and sometimes hair. Clutches of 4-6 eggs in end May – end June. Only female incubates for 13 days. Both parents feed juveniles, which fledge at 13-15 days old, in mid-June – early August. One brood reared per year. Autumn migration begins in August, most birds leave in September, latest records in early – end October.

359. **Paddyfield Warbler** *Acrocephalus agricola* (Jerdon, 1845)

septima *– upper parts brownish-grey, less brownish, than at other races.* Probably breeding in Volga-Ural area on northern coast of Caspian Sea, in lowers of Ural and Uil rivers, and also on Kamysh-Samarskiye lakes and on Kushum river at Dongulyukskoye reservoir (Matyukhin *et al*., 1991).

brevipennis *– upper parts lighter, less brown, more brown-olive.* Breeding on lakes east of Ural valley. On migration occurs everywhere on plains and in foothills.

Common, in places numerous breeding migrant. Inhabits tall and low reed beds on fresh and salty lakes and rivers on plains. On migration occurs in bush thickets, tall weeds and rare forest-belts. Appears in mid-April – early May. Breeding in separate pairs, not far apart. Nest is built in reed, or rarely in reed mace at 5-100 cm above water from reed panicles mixed with vegetation fluff and some dry grass lined with thin and soft parts of panicle. Clutches of 4-5 eggs found in end May – mid-June. Both parents feed juveniles, which fledge in end June – late July. Autumn migration begins in August, most birds leave up to mid-September. Latest recorded in early – mid-October. On Chokpak Pass ringed 19 May 1983, 30 April-3 May 2001, 17 April 2002, 4 May 2004, 21 May 2005 and 9 September 1969, 22 September 1986, 24 September 1987, 3 October 1993, 25 August 1995, 25 August – 11 October 2002, 27 August – 18 September 2004.

360. **Blyth's Reed Warbler** *Acrocephalus dumetorum* Blyth, 1849

Breeding in Southwest Altai and Kalbinskiy Altai, in Irtysh valley between Semipalatinsk and Ust-Kamenogorsk probably, by places in Kazakhishe upland, on Kurgaldzhino lakes, Kokchetav upland, on Chagly lake and Ishim valley at Mar'yevka, appointed as breeding for Naurzum Reserve (Bragin, Bragina, 1999, 2002). It lives in island coniferous forests of steppe zone, in Tobol valley (Blinova, Blinov, 1997) and in middle current of Ural valley also, though documentary data from last points absent. Nesting in Dzhungarskiy Alatau at Topolevka settle probably, where singing males recorded in beginning of July (*per* S.L.Sklyarenko). As an exception, breeds in foothills of Zailiyskiy Alatau, where in Almaty area 13 July 1935 non-flying nestling obtained. In other territory occurs on migration. Rare migrates in highlands of Zailiyskiy Alatau ridge, Big Almaty Lake, where observed 23 May 1974 and 28 May 1977 (Kovshar, Lopatin, 1983).

Abundant breeding migrant, in places passage migrant only. Inhabits bush thickets on wet place near rivers, lakes and marshes, on meadow and rarely in tall grass with some bushes, both on plain and in mountains up to 2000 m. On migration visits various forests, bushes, gardens, groves, forest-belts, reed beds, lucerne fields and tall weeds thickets. In southern areas appears in end April – early May, and in early – mid-May in northern ones and in mountains. Latest migrants recorded in end May – early June. Breeding in separate pairs, at 25-100 m apart. Nest is built in bush (willow, currant, meadow-sweet, raspberry, honeysuckle, birch, dog-rose, bird cherry, *Hedysarum sp*.) or in tall grass (nettle, willow-herb, blackberry, *Aconitum altaicum*, reed) from dry grass mixed with cobweb and vegetation fluff lined sometimes with hair. Clutches of 3-6, usually 5 eggs in late May – mid-July. Both parents feed juveniles, which fledge at 11-12 days old, in end June – mid-August. Autumn migration begins in late July, many birds leave in August, latest recorded in mid-September – mid-October.

361. **Marsh Warbler** *Acrocephalus palustris* (Bechstein, 1798)

Breeding in northern part of Volga-Ural area, in middle and lower current of Ural valley south to Chapaevo (Gavrilov *et al*., 1968; Levin, Gubin, 1985), on Ilek valley at Karabutak, on Chagan and Utva rivers, also in Kokchetav upland (Borovoye, Kokchetav area) and in Shortandy area (Berezovikov, Kovalenko, 2001). On migration occurs to the south, east up to Tentek delta (Khrokov *et al*., 1993).

Rare or, in places common breeding migrant. Inhabits bush thickets (mostly of willow) on shore of rivers and lakes, marshy shores with bushes, reed and sedge, and light forest wish bushes and clearings at 500-800 m off water. On migration occurs in reed beds and tall weeds too. Appears in May, many birds migrate in mid-May. Breeding in separate pairs at 50-200 m apart. Nest is built in bush (dog-rose,

blackberry, elm, poplar, blackthorn, buck thorn) or in tall grass (nettle, wormwood, *Aristolochia clematitis*) at 0.1-1.2 m, usually 30-40 cm above ground, from dry grass and honeysuckle bast lined with thin grass and hair. Female builds it mostly, with some help of male, for 3-7 days. Clutches of 3-5 eggs in end May – early July. Both parents incubate for 11-14 days, and feed juveniles, which fledge at 10-12 days old, in July, and next 19 days more they fed by parents. One brood, repeated breeding after loss of first nest is common. Autumn migration begins in end July, many birds leave in August, latest recorded in end September.

362. **Reed Warbler** *Acrocephalus scirpaceus* (Hermann, 1804)

fuscus – breeding and occurs on migration in southern half of Kazakhstan, north up to middle current of Ural valley, Naurzum Reserve (Bragin, Bragina, 2002), Kurgaldzhino lakes and Zaysan depression. In July 2001 recorded at southern spurs of Azutau ridge (Berezovikov, Rubinich, 2001).

Common breeding migrant. Inhabits reed beds on lakes, plain rivers and pounds, and willow thickets on shore of reservoirs. On migration occurs also in bush thickets, forest-belts and tall weeds. Arrives in April – early May singly or in small groups. Breeding in separate pairs at 15-50 m apart. Nest is built in reed on shallow water at 50-80 cm above water from dry grass mixed with vegetation fluff and cobweb lined with thin grass and some hair, by both partners. Clutches of 3-6 eggs in June. Mostly female incubates for 12-13 days. Both parents feed juveniles, which fledge at 11-13 days old, in July. Autumn migration begins in end July – August. On Chokpak Pass recorded 3 September 1997 and 1 October 2000. Latest birds registered in end September – mid-October.

363. **Clamorous Reed Warbler** *Acrocephalus stentoreus* (Hemprich et Ehrenberg, 1833)

brunnescens – breeding and occurs on migration in southern Kazakhstan, north up to lower of Sarysu river (in 1986; Khrokov *et al*., 1991) and Betpak-Dala at Chulak-Espe (Levin, Belyalov, 1988), to east up to sewage water reservoir Sorbulak close to Almaty (since 1978; Lopatin *et al*., 1993). Young male caught in August at lower of Turgay river (Khrokov *et al*., 1990). At last decades begins to spread in north and east, overlapping with Great Reed Warbler, with which it hybridise (Hansson *et al*., 2003). Two records on Issyk-Kul 26 September 1907 and near Bishkek 10 September 1925 can point on more wide distribution in beginning of XX century probably.

Common, in places abundant breeding migrant. Inhabits tall and medium sized reed beds on river, lake, pound and irrigation channels, both small and vast on plains and in foothills up to 1200 m. On migration rarely occurs in forest-belts. Appears in mid-April – early May. Breeding in separate pairs at 10-30 m apart. Nest is built on several reed stems from dry reed leaves, mixed sometimes with green alga and reed strips of leaves, sheep hair, cotton wool, and lined with reed strips and hair for a week or so. Clutches of 3-5 eggs found in end May – mid-June. No other data existed. Near Tashkent latest birds recorded in end September, and even 21 October 1908.

364. **Great Reed Warbler** *Acrocephalus arundinaceus* (Linnaeus, 1758)

arundinaceus *– general colour darker; upper parts more reddish-brown, less olive; ochre shade on sides and upper tail coverts well expressed.* Occurrence in Western Kazakhstan on migration is possible.

zarudnyi *– general colour lighter; upper parts more olive, less reddish-brown; ochre shade on sides and upper tail coverts less expressed.* Breeding in most part of plain Kazakhstan, south up to northern coast of Caspian Sea, lower of Syrdarya (from delta up to Chiili), Chushkakol lake (120 km west of Chimkent), Stone lake (50 km south of Biylikol lake) and on sewage water reservoir Sorbulak near Almaty. Occurs on migration practically everywhere.

Common, in places abundant breeding migrant. Inhabits tall reed-beds on fresh and salty lakes, rivers, pounds and along shore of sea. On migration prefers reed beds too, but visits also shrub-thickets, gardens and single trees in open country rare. Appears in mid-April – early May. Breeding in separate pairs at 15-50 m from each other. Nest is built among reed stems at 15-50 cm above water from dry reed leaves mixed with grass lined with vegetation fluff and reed panicles. Clutches of 3-6, usually 5 eggs in second half of May – early July. Both parents feed juveniles, which fledge at 12-14 days old, in end June – late August. Some authors explain very long nesting by two broods, but this not proved jet. Repeated breeding after loss of first nest (mostly out of Cuckoo) is common. Autumn migration begins in end July, many birds leave in August, latest recorded in early – end September.

Note. Four hybrids with Clamorous Reed Warbler (*Acrocephalus stentoreus*) caught 14-19 May 2001 at Stone lake and one May 1989 at Chushkakol lake (Hansson, Gavrilov, Gavrilov, 2003).

365. **Eastern Olivaceous Warbler** *Hippolais pallida* (Hemprich et Ehrenberg, 1833)

elaeica – breeding in southern Kazakhstan from area adjacent to Caspian Sea from north and Mangyshlak east to Borolday ridge and spurs of Talasskiy Alatau. From early 90th years begin to spread on north and east. In May 1998 males observed in Ile valley and in Astana (*per* L.Svensson). One singing male heard in Zhelturanga 29 May 2003 (Kovalenko, Kovshar, 2004). One bird observed 18 May 2002 near Chilik village (Annenkova, 2002a). Occurs on migration here and at Chokpak Pass (one ringed 8 May 2002; Gavrilov *et al*, 2003).

Rare breeding migrant. Inhabits bushes in desert and low mountains up to 1500-1700 m, gardens and tree-bush vegetation in villages. On migration occurs in forest-belts. Appears end April – early May. Breeding in separate pairs. Nest is built in bush or in tree from dry grass lined with soft bast and vegetation fluff. Clutches of 3-5 eggs in June, fledglings recorded in early July. Autumn migration in August probably, as in September not occurs in breeding grounds.

366. **Booted Warbler** *Hippolais caligata* (Lichtenstein, 1823)

Breeding in northern half of Kazakhstan, in Volga-Ural area to south up to Kamysh-Samarskiye lakes, on Ural valley up to Karmanovo. To south it spreads up to area adjacent to Aral Sea from north and Syrdarya delta, lower of Sarysu river. It lives in foothills of Southwest Altai, in southern spurs of Chingiztau, at Semipalatinsk vicinities, in Zaysan depression, foothills of Monrak (Dolgushin, 2002), at Tarbagatay, in northern part of Alakol' depression and middle current of Ile river, in area adjacent to Balkhash lake from north. On migration occurs to the south.

Common breeding migrant. Inhabits bushes in river valleys, forest edges, tall weed thickets. On migration occurs in tree-shrub vegetation, forest-belts, gardens, groves and reed beds. Arrives in early – mid-May. Breeding in separate pairs fairly close apart. Nest is built on ground under bush or bunch of grass, or in bush up to 1 m above ground from dry grass lined with feathers and some hair. Clutches of 3-6 eggs in end May – late June. Both parents feed juveniles, which fledge in end June – late July. One brood per season; repeated breeding after loss of first nest is common. Autumn migration begins in end July, latest birds recorded in end August.

Note. Recent investigation shows, that described as '*annectens*' birds falls well within normal colour variation of '*caligata*' and should not be upheld as a separate taxon. Limited hybridisation with Sykes' Warbler (*Hippolais rama*) in overlap areas could well occur (Svensson, 2002).

367. **Sykes' Warbler** *Hippolais rama* (Sykes, 1832)

Breeding and occurs on migration in southern Kazakhstan, north up to lower of Ural river, Karatau foothills, Betpak-Dala (Chulak-Espe, Katynkum, Dzhambulgora, Barsa-Kelmes natural boundary; Kovshar, Levin, 1993), Taukum sands, Ile valley near Burandysu and in Alakol' hollow.

Common breeding migrant. Inhabits bushes in desert, at edge of riparian forest, in forest-belts and reed patches, both on plains and in foothills. Appears in end April – early May. Breeding in separate pairs. Nest is built in bush (tamarisk, *Eurotia sp*., *Calligonum sp*., saxaul, willow) up to 1.5 m above ground from dry grass lined with vegetation fluff, feather and some hair. Clutches of 3-5 eggs in mid May – early June. Both parents feed juveniles, which fledge in end June – mid July. One brood per season, repeated breeding after loss of first nest is common. Autumn migration in late July, latest birds recorded in early September.

368. **Upcher's Warbler** *Hippolais languida* (Hemprich et Ehrenberg, 1833)

Breeding on southern Mangyshlak, in Kyzylkum (up to east edge; Gubin, Sklyarenko, 1990), and probably in Muyunkum desert. Common on breeding in Malyy Karatau (Gubin, Karpov, 1994). On migration occurs in foothills of Talasskiy Alatau, in Dzhabagly settle 1 and 2 August 1998 (Kolbintsev, 1999) and at Chokpak Pass.

Common breeding migrant. Inhabits sandy hill and clay desert with shrub patches, mountain slopes with scattered shrubs up to 1500-1800 m. On migration occurs rare in forest-belts. Appears in end April – mid-May. At Chokpak Pass one bird ringed 11 May 2000. Breeding in separate pairs up to several hundred meters apart. Nest is built in bush or in small tree at 0.5-2 m above ground from thin dry grass and bast, fastened by cobweb, and lined with soft vegetation and fluff, for a week. Only female builds it, male escorts her. Clutches of 3-5 eggs found in mid-May – early June. Female incubates for 12 days, sometimes male protects the eggs from overheating in midday. Both parents feed juveniles, which

fledge at 11-12 days old, in mid-June – early July. One brood per season, repeated breeding after loss of first nest is common. Autumn migration in August probably, as in early – mid-September no birds observed on breeding grounds.

369. **Icterine Warbler** *Hippolais icterina* (Vieillot, 1817)

Breeding occasionally in middle current of Ural valley (Gubin, Levin, 1982) and on the Kokchetav upland. Recorded also 20 June in middle part of Mugodjary ridge (Kovshar, Davygora, 2004). On migration occurs in Volga-Ural area (Gavrilov *et al*., 1968), on Mangyshlak (Kovshar, 1995) and at Kipshak and Tengiz lakes in Central Kazakhstan (Khrokov *et al*., 1977; Andrusenko, 2002).

Very rare breeding migrant. Inhabits old willow-poplar or mixed forest with undergrowth. On migration occurs in bush thickets, groves and single trees in steppe. Arrives in early – mid-May, on Mangyshlak and at Tengiz lake observed in end May. Nest is built in bush (willow, snowball-tree, elder, lilac) or in tree (poplar, oak, birch, aspen, maple, willow, pine) at 1-15 m above ground from bast and dry grass, fastened by cobweb, lined with vegetation fluff and meadow grass panicles. Clutches of 4-6 eggs in June. Both parents incubate for 13-14 days and feed juveniles, which fledge in early July. Autumn migration mostly in August, last birds recorded in early September.

370. **Blackcap** *Sylvia atricapilla* (Linnaeus, 1758)

atricapilla – occasionally breeds in middle current of Ural valley (Gubin, Levin, 1982). Displaying male observed in summer up to 10 July 1932 at Borovoye (Stegman, 1934). Common on migration in lower current of Ural valley (Gavrilov *et al*., 1968; Gubin *et al*., 1977), rarely in Utva-Ilek area near Uspenovka village 4-8 September 1990 and near Aksay town 20 August 1990 (Berezovikov *et al*., 2000b), on Mangyshlak 10 May 1947 and 8-16 September 1964, and 19 May 1986 at lower current of Turgay river (Khrokov *et al*., 1990). A male was caught in Kurgaldzhino Reserve 25 May 2000 and 2 October 2002 (Koshkin, 2003). One bird shot in Kyzylkum desert 4 May 1973 (Kashkarov *et al*., 1974).

Accidental breeding migrant. Inhabits deciduous and mixed forest with dense under growth. Appears in second half of April – early May. Nest is built in bush or in tree from dry grass lined with rootlets and some hair by both partners. Clutches of 4-6 eggs. Unsuccessful nest building observed 29 May 1979 near Krasnoarmeyskoe village. Both parents incubate and feed juveniles, which fledge at 11 days old. On autumn migration recorded from mid-September up to early October.

371. **Garden Warbler** *Sylvia borin* (Boddaert, 1783)

pallida – *upper parts more clean-grey, less brownish-grey than* ***borin***. Breeding in Northern Kazakhstan, close to Kokchetav and probably between Tobol and Ishim to north from Semiozernoye. One bird observed 6 August 2000 at Shortandy area (Berezovikov, Kovalenko, 2001) and in Mugodjary ridge (Urkach forest) mid June (Kovshar, Davygora, 2004). On migration in spring recorded in lower current of Turgay river (Khrokov *et al*., 1990); in autumn in lower current of Sarysu rover (10 September 1986; Khrokov *et al*., 1991), in Kurgaldzhino on Nura river (Khrokov *et al*., 1977), near Almaty and at Chokpak Pass in Western Tien Shan.

borin – *upper parts more brownish-grey, less clean-grey than* ***pallida***. Probably breeds in middle current of Ural valley (Dubinin, Toropanova, 1956; Levin, Gubin, 1985), episodically in Uzen rivers valleys and probably in Urda. On migration in Western Kazakhstan is very common, especially in lower current of Ural valley. Recorded in lower current of Emba river and on Mangyshlak.

Common, in places rare breeding migrant, but in lower reaches of Ural River abundant passage migrant. Inhabits bush thickets and coppice forest on edges and inside forest, prefer wet, but not marshy places. On migration occurs in tree-bush vegetation, forest-belts and in reed beds rarely. Appears in end April – early May, most birds migrate in first half of May, latest records in end May – mid-June. Breeding in separate pairs 100-150 m apart from each other. Nest is built in bush (raspberry, elder, bird cherry, buck thorn, black thorn, juniper, blackberry) or in tree (birch, oak, elm, lime, poplar, willow), not higher than 3 m, from dry grass stems lined with thin grass, rootlets and hair. A male begins to build it and constructs platform, to which it attracts female, after this both partners continue and finish nest for 3-6 days. Each male constructs several platforms in common. Clutches of 3-6 eggs in end May – early July. Both parents incubate for 10-13 days, and feed juveniles, which fledge at 8-13 days old, in end June - early July. One brood per season, repeated breeding after loss of first nest is common. Autumn migration begins in end July, most leave in end August – first half of September, latest recorded early October. At Chokpak Pass singles ringed 5-23 September 1967 and 1989, 6 September 2002, 23 September 2003.

372. **Barred Warbler** *Sylvia nisoria* (Bechstein, 1795)

nisoria – *upper parts darker than* ***merzbacheri****.* Breeding in northern half of Kazakhstan, in middle and lower current of Ural valley, south up to Mergenevo, on Ilek river, in upper Emba valley and its inflows to south up to Kokdzhida. Lives also in Mugodzhary ridge up to Aulie river, and to the south up to lower of Irgiz river, in upper current of Turgay river from merge Kara- and Sary-Turgay, on Ishim and Nura (from Rozhdestvenka) valleys, in upper course of Sarysu river, at Karaganda and on Koksengir. Episodically breeds in Bektauata, at Kargaly and in Kyzylray. Observed in summer near Ayaguz. Common in Del'begerey, Semeytau and Kokon' Mts., on Irtysh valley between Pavlodar and Ust'-Kamenogorsk, in foothills of Western Altai, in Kalbinskiy Altai, in Bukhtarma valley; nests on Markakol' lake and in Zaysan depression rarely. A brood observed 25 July 1982 near Naualy village (Starikov, 2002). On migration occurs to south (in Betpak-Dala recorded at Baygora and in Shukuroy natural boundary; Kovshar, Levin, 1993).

merzbacheri – *upper parts lighter than* ***nisoria****.* Breeding in foothills and at low altitude in Tien Shan, Dzhungarskiy Alatau, on Ile, Charyn and Karatal valleys, and in Alakol' depression. Details of distribution on migration are not found out.

Rare, in places common breeding migrant. Inhabits bush thickets on edges of deciduous, mixed or coniferous forest, forest-belts, river valleys with patchy shrubs and single trees both on plains and in mountains up to 2500-2600 m. On migration prefers tree-shrub vegetation. In southern areas arrives late, in end April – early May, and in early – mid-May in northern ones, singly as a rule. Latest migrants recorded end May. Breeding in separate pairs not less then 50-100 m apart. Nest is built in bush (meadow-sweet, honeysuckle, hawthorn, dog-rose, gooseberry, raspberry, willow) at 0.2-2.5 m above ground, from thin twigs, dry grass stems and bast lined with thin grass, rootlets and hair, usually by female with some help of male, for 4-6 days. Clutches of 3-7, usually 5 eggs found in mid-May – end June. Only female incubates for 12-14 days. Both parents feed juveniles, which fledge at 10-11days old, in end June – mid-July. One brood per season, repeated breeding after loss of first nest is common. Autumn migration begins in late July, many birds leave in August, latest recorded in mid – end September.

373. **Lesser Whitethroat** *Sylvia curruca* (Linnaeus, 1758)

curruca – *upper parts brownish-grey, darker, than at all other races. Crown bluish-grey, ear coverts brownish-rusty-brown, not sharply marked out. Wing length 60.0-72.0 (65.8) mm. Wing sharp, its top forms by P3, P6 < P3 on 4-5 mm; P2 = P6, rarely 6>2>7 or 5>2>6. White area on R6 moderately developed.* Breeding in forest-steppe and steppe of Kazakhstan from Volga-Ural steppe up to Altai, south probably up to Novaya Kazanka and lower valley of Ural river, upper current of Emba river, Kurgaldzhino, Karaganda and Kazakhishe upland. On migration occurs to the south.

halimodendri – *upper parts brownish-grey with sandy shade, lighter than* ***curruca****, but darker than* ***minula****. Crown greyish, less brownish, appreciably contrasting with other upper parts. Remiges and rectrices pale-brownish with light edges on outer webs, secondaries with light tops. Wing length 60.0-70.0 (64.4) mm. Wing blunt, its top forms by equal on length P3-P5; usually P2 < P7. In young birds whitish field on R6 occupies somewhat more than 1/3 of inner vane, narrowing along shaft to feather base; small whitish spot present on the tip of R5.* Breeding and also occurs on migration in Kazakhstan deserts from area adjacent to Caspian Sea from north and Mangyshlak up to Zaysan depression and Muyunkum desert, north up to lowers of Irgiz and Turgay rivers, Kurgaldzhino Reserve, Tusum sands and Betpak-Dala.

margelanica – *much larger than* ***minula****, and in spring and summer have darker upper parts without typical for* ***minula*** *yellowish tint. Wing length 64.0-74.0 (68.2) mm. Wing formula 6>2>7 predominates, but rare P2 = P6 or P2 = P7; in many birds outer vane on top of P6 with distinct notch. White area on R6 well developed and occupies more than half of inner vane; large wedge-shaped whitish spot presents on apical parts of R5; on tip of R4 only whitish stripe.* Occurs rarely on migration in mountain, foothill areas and deserts of Southeast Kazakhstan in April – May (at 23 May 2003 in Kumbar sands) and October (at 22 October 1938 near Chimkent; *per* L.Svensson). On Sorbulak lake one bird ringed 2 May 2004 (Belyalov, Karpov, 2004).

minula – *upper parts sandy with intensive yellowish tint. General size lesser than other races. Wing length 58.0-66.5 (62.0) mm. Wing more rounded (often P2 = P7 or even 7>2>8). White area on R6 well developed.* Breeding in southern Kazakhstan, north to southern border of Mangyshlak, lower and middle current of Syrdarya valley, and in spurs of Zailiyskiy Alatau and Kungey Alatau (Sklyarenko, 2002a). On migration recorded here and in foothills of Tien Shan.

Common breeding migrant, and abundant passage migrant. Inhabits bush thickets in desert, half-desert and steppe, in river valleys, edges of deciduous, mixed and coniferous forest on plain and in mountings up to 1500 m. On migration occurs in forest-belts, reed beds, tall weeds thicket. Arrives in early – end April, but in northern areas in early – mid-May only, singly or in small groups. Migration finishes in end May. Breeding in separate pairs at 30-100 m from each other. Nest is built in bush or in small tree at 0.3-1.5 m above ground from thin twigs, grass stems and leaves lined with thin rootlets, bast strips, and some hair and vegetation fluff sometimes, for 5-11 days. Male begins to build it, when female appears, she lined nest, but sometimes male finishes the building alone. Clutches of 3-6, usually 5 eggs in first decade of May – early July. Both parents incubate for 11-12 days and feed juveniles, which fledge at 10-11 days old, in early June – first decade of July. Many think, that two broods reared per year, but this not proved jet. Autumn migration begins from early – mid-August. Many birds leave in September, latest recorded in early – mid-October (some linger up to early November).

374. **Orphean Warbler** *Sylvia hortensis* (Gmelin, 1789)

crassirostris – breed in Western Tien Shan (Karzhantau, Ugamskiy and Pskemskiy ridges, Talasskiy Alatau) and in Karatau (*per* B.M.Gubin). At recent time settles to east, broods recorded near Akterek and in Boguty Mts. in July 2002, where observed in 1998 and 2000 (Kovalenko, Sklyarenko, 2002b; *per* S. Schmygalev), in Chulak Mts., in spurs of Dzhungarskiy Alatau and northern foothills of Tarbagatay (Kovshar, Berezovikov, 2001; Berezovikov, Levin, 2002a). On migration rarely occurs near Kolshengel 12 May 2002 (Sklyarenko, 2002a) and at Chokpak Pass 12 May 1972 and 14-16 May 1968 (Gavrilov, Gistsov, 1985).

Common breeding migrant. Inhabits bushes on gently slopes, in deciduous and juniper light forest with bushes and in hedges of mountain villages, at 1000-2200 m. On migration occurs in foothills very rare. Appears end April – early May; latest migrants observed mid-May. Breeding in separate pairs 50-70 m apart. Nest is built in bush (juniper, honeysuckle, meadow-sweet, almond-tree, dog-rose) 0.3-3.5 m above ground from bast strips, grass stems lined with thin bast strips of honeysuckle, by both partners for 4-5 days. Clutches of 3-5 eggs in mid-May – early July. Both parents incubate for 11-12 days, and feed juveniles, which fledge at 11 days old, in end June – July. Autumn migration begins in early August, latest birds recorded in early – mid-September.

375. **Hume's Lesser Whitethroat** *Sylvia althaea* Hume, 1878

monticola – breeding in Pskemskiy and Ugamskiy ridges, in Karzhantau, Talasskiy Alatau and Karatau to north-west up to basin of Dzhalganaty river and top of Mynzhilke, and also on northern slopes of Kirgizskiy Alatau. Last decades begins to settle in east. Broods recorded in 2002 near Akterek, Zailiyskiy Alatau (Kovalenko, Sklyarenko, 2002c). In summer observed in Chu-Iliyskiye Mts. (Dzhanyspaev, 2004a), in east spurs of Zailiyskiy Alatau in Chilik valley and in Kokpek gorge (Kovshar, 2002), though no nest found jet. In mid June 2003 nest with juveniles found in Turaygyr ridge (*per* O.Belyalov). One bird ringed in Kurgaldzin Reserve 10 October 2002 (Koshkin, 2002), what is very doubtful. On migration occurs in foothills, one caught 21 May 1981 on sewage water reservoir Sorbulak close to Almaty and one on Chokpak Pass 19 May 2001.

Common breeding migrant. Inhabits bush thickets of meadow-sweet, honeysuckle, almond-tree, dog-rose, sometimes with singles trees, rocks and juniper, at 800-2300 m. On migration occurs in thickets of high weed, forest-belts and gardens. Appears in end April – early May. Nest is built in bush at 0.3-5 m above ground from grass stems, leaves and bast lined with thin grass and sometimes with some hair, by both parents for a week or so. Clutches of 4-5 eggs found in mid-May – early July. Both parents feed juveniles, which fledge in end June – early August. It is uncertain, two broods are reared per year, or late nests are a result of repeated breeding. Autumn migration passed in August, probably. Latest birds recorded 15 August 1963 in Talasskiy Alatau, and mid-September in Tadjikistan.

376. **Asian Desert Warbler** *Sylvia nana* (Hemprich et Ehrenberg, 1833)

nana – breeding and occurs on migration in southern half of Kazakhstan, north up to Volzhsko-Ural'skiye sands (Gavrilov *et al*., 1968), Dossor station, Karakum sands adjacent to Aral Sea and Chelkar-Teniz lake depression (Chelzov-Bebutov, 19786), northern Betpak-Dala (Kovshar, Levin, 1993), Taukum sands, lower current of Ile river, Ayaguz and Dzhungarskiy "gate". Probably breeds in Alakol' depression (Berezovikov, Erokhov, 2004). In spring one bird observed in Zailiyskiy Alatau in Shubararcha (Dzhanyspaev, Belyalov, 1997). One bird recorded in Kurgaldjin Reserve 9 October 2002 (Koshkin, 2002), what is very doubtful

Abundant, in places common breeding migrant. Inhabits hilly sand with rare shrubs (saxaul, tamarisk), clay desert with *Salsola laricifolia*, *Calligonum sp*., tamarisk and wormwood places with desert bushes up to 500-700 m. On migration occurs in edge of riparian forest, in bush thickets, forest-belts on plains and in foothills. Appears in early – end March, or in early April. Breeding in separate pairs. Nest is built in bush from thin twigs, grass stems, leaves and bast lined with vegetation fluff and some hair, by both partners. Clutches of 4-6 eggs in April – early June. Both parents incubate and feed juveniles, which fledge in mid-May – June. Probably two broods reared per year, but it is not proved. Autumn migration begins early, in late July. Many birds leave in August – September, latest recorded in mid – end October (at once obtained even 13 December 1939).

377. **Common Whitethroat** *Sylvia communis* Latham, 1787

communis *– upper parts more rusty-brownish than* ***rubicola****. Crown colour varies from rusty-brownish-grey to grey, birds with first crown prevailed.* Breeding in northern half of Kazakhstan, south up to delta of Ural, lower current of Turgay river, Chu valley and lower current of Ile river, to east up to western foothills of Altai. On migration occurs to the south.

rubicola *– upper parts more clean-grey (sometimes with brownish shade) than* ***communis****. Crown colour usually grey, rarely with brownish shade.* Breeding in Tien Shan, Dzhungarskiy Alatau, Tarbagatay, Saur, Southwest Altai and Kalbinskiy Altai. On migration occurs in its foothills and in southern Kazakhstan.

Common breeding migrant. Inhabits bush or tall weeds thickets in forest (riparian, deciduous, mixed and coniferous) edge, meadow valleys, forest-belts and gardens, sub-alpine meadow and tundra, both on plains and in mountains up to 2100-2300 m in Altai and 2600-2700 m in Tien Shan. Arrives in end April – early May, singly, in pairs or small groups. At mountings appears in early – mid-May only. Many birds migrate in May, latest recorded in early June. Breeding in separate pairs at near 50 m from each other. Nest is built in bush (honeysuckle, meadow-sweet, dog-rose, juniper) or in tall grass (stinging-nettle, for example), at 5-40 cm above ground, or on ground under grass from dry grass stems lined with thin grass, rootlets and hair. Male begins to build it, but when female arrived, she continues and finishes building. Clutches of 4-6 eggs in end May – early July. Only female incubates for 11-12 days. Both parents feed juveniles, which fledge at 10-12 days old, in end June – late July. Autumn migration begins in end July, many birds leave in August – early September. Latest recorded in end September – early October.

378. **Menetries's Warbler** *Sylvia mystacea* Menetries, 1832

turcmenica – breeding on islands and east coast of Aral Sea, in Syrdarya valley and in adjacent Kyzylkum desert. At once shot in August 1927 in Talasskiy Alatau at Ur-Maral (Meklenburzev, 1995). On migration occurs repeatedly in autumn in foothills of Western Tien Shan at Chokpak Pass, that can point out to its wider distribution in Kazakhstan (Gavrilov, Gistsov, 1985), than is known now. J.D.Summers-Smith 26 May 1992 saw this warbler in lower Ile river, but O.Belyalov answered that it is impossible (Belyalov, 2004c).

Common breeding migrant. Inhabits bush thickets on edge of riparian forest, along irrigation channels, near oasis and gardens, on clay patches among hilly sands. On migration occurs in forest-belts. Appears in end March – early April. Nest is built in *Halimodendron sp*., *Calligonum sp*., tamarisk and other bushes up to 20-50 cm above ground from thin twigs and dry grass lined with thin grass and some hair often. Clutches of 3-5 eggs found in early May – early June. Both parents incubate and feed juveniles, which fledge in June. Autumn migration is not known. At Chokpak Pass singles caught 13 September 1972 and 22 September 1986. Latest bird on Syrdarya valley recorded 25 October 1927.

379. **Greenish Warbler** *Phylloscopus trochiloides* (Sundevall, 1837)

viridanus *– upper parts lighter, less clean-green, more brownish-green than* ***plumbeitarsus****. Light tops of upper wing median coverts form one cross strip, less sharp than* ***plumbeitarsus****.* Breeding in Tien Shan, Dzhungarskiy Alatau, Saur, in Southwest Altai, Kalbinskiy Altai, near Karkaralinsk and in Pavlodarskoye Trans-Irtysh'e; at once recorded as breeding in Talasskiy Alatau (Kovshar, Korelov, 1972; Kovshar, Khrokov, 1993). In June – August 1996-1998 recorded as common in Aksu-Dzhabagly Reserve (Kolbintsev, 1999). On migration occurs everywhere.

plumbeitarsus *– upper parts darker and more clean green, less brownish-green than* ***viridanus****. Light tops of upper wing median and lesser coverts form two cross strips, first of them sharper than* ***viridanus****.* At once obtained 16 May 1947 on Mangyshlak at Aktau (Dolgushin, 1948a, b). Singles repeatedly recorded in south-eastern Kazakhstan (Almaty, Iliysk and in Usek river valley).

Common, in places abundant breeding migrant. Inhabits spruce, spruce-fir, larch and pine forest, mixed forest and sometimes birch groves up to 1900 m in Altai and 2700-2800 m in Tien Shan. On migration visits deciduous forest, reed-beds, bush thickets, forest-belts and tall weed thickets. Arrives singly or in small groups up to two-three dozen birds, with other Leaf Warblers often, in mid-April – early May; many migrate in May; latest recorded in early June. Breeding in separate pairs at 35-100 m from each other. Nest is built on ground under stone, between stones, in moss tussock, dead need, bark or dry twigs pile, and well concealed. Only female builds it from moss and dry grass lined with hair, feathers, and very rare only with grass bast. Clutches of 3-7 eggs in end May – early July. Only female incubates for 12-13 days. Both parents feed juveniles, which fledge at 12-14 days old, in mid-July – early August. One brood per season, repeated breeding after loss of nest not excluded. Autumn migration begins in end July - early August, many birds leave in September, latest recorded in early October, and even in early November (at once 4 December 1959).

Note. In collection there are two skins resemble Greenish. One shot in Markakol' lake, other close to Almaty. They considerably differ from known races: upper parts pale-grey, almost without greenish shade, with one wing cross strip; emargination on outer web of P6 more distinct than ***plumbeitarsus***. Bill narrow in the base, thin and slender to top, resembling bill of Hume's Warbler *(Ph. inornatus*); lower mandible dark, not light, as at all known races of *Ph. trochiloides*. Almost not differ from them four males (Zoological institute, St.-Petersburg), obtained in July – August in Northwest Mongolia. It is offered to name this race ***tenuirostris*** (Kovshar, Korelov, 1972). Similar bird was caught and ringed on Sorbulak lake in spring.

380. **Arctic Warbler** *Phylloscopus borealis* (Blasius, 1858)

borealis – on migratuon observed in Semipalatinsk area, about Zaysan (Kovshar, Korelov, 1972), in Kurgaldzhino Reserve (Koshkin, 2002), in Kolshengel (Kovalenko, Kovshar, 2004) and 15 September 1969 in foothills of Western Tien Shan at Chokpak Pass (Gavrilov, Gistsov, 1985).

Very rare passage migrant. Occurs in forest-belts, riparian forest and in bush thickets. In spring observed 7 May 2000 at Burundysay and in Ile valley, last seen 30 May. In autumn recorded early – mid-September.

381. **Pallas's Leaf Warbler** *Phylloscopus proregulus* (Pallas, 1811)

proregulus – high numbers observed in autumn 1960-1961 on northern slopes of Talasskiy Alatau and in upper course of Arys river 6-23 October 1960, 3-17 October 1961 and in early November 1970 and 1971 (Kovshar, 1966), where recorded in 1970 and 1971 (Gubin, 1989a) and 13 April 2004 (Chalikova, 2004). At Chokpak Pass singles ringed 21 October 2001 and 24 October 2002. Rarely observed in lower current of Sarysu river 27 September 1986 (Khrokov *et al*., 1991), in Irtysh valley about Ust'-Kamenogorsk 31 October 1981 (Starikov, Zikh, 1990), in Kurgaldzhino Reserve 18 September 1999 (Koshkin, 2002, 2003) and in Ile valley near Kapchagay 22 May 1990 (Kovalenko, 2002c).

Rare passage migrant. Occurs in juniper forest, deciduous mountain and flood plain forests, tamarisk bushes and in forest-belts. In spring recorded in mid April - end May; in autumn singly and in small groups of 3-5 birds in mid-September – early November.

382. **Yellow-browed Warbler** *Phylloscopus inornatus* (Blyth, 1842)

Recorded in lower current of Ural river near Atyrau (7 and 25 October 1973) and on Ustyurt 17-18 October 2002 (Gubin *et al*., 1977; Gubin 2002a), in lower current of Sarysu river (15 and 17 September 1986; Khrokov *et al*., 1991), in Kurgaldzhino Reserve (19 May 1984 and 14 September 1990), in Kolshengel (19-20 May 2002; Kovshar V., 2002d), and in foothills of Western Tien Shan at Chokpak Pass (13 October 1969, 13 September 2001, 27 September 2002; Gavrilov, Gistsov, 1985).

Rare passage migrant. Occurs in decidius forests, forest-belts, gardens, groves and in bush thickets. At spring recorded mid-end May and in autumn from mid September up to early-end October by singles and in small groups mostly.

383. **Hume's Warbler** *Phylloscopus humei* Brooks, 1878

Breeding in Tien Shan, Dzhungarskiy Alatau, in Saur, Southwest Altai and also on Monrak ridge and in Kalbinskiy Altai (Scherbakov, 1999). On migration occurs in foothill plains, west up to Kurgaldzhino Reserve (Andrusenko, 2002), lower of Sarysu river 15 and 17 September 1986 (Khrokov *et al*., 1991), Ile delta and Chimkent. At once 24 February obtained close to Almaty.

Common, in places abundant breeding migrant. Inhabits mountain spruce and coniferous boreal forest with clearings, larch light forest, bushy tundra, juniper bush thickets on alpine meadow, deciduous (birch, willow) forest at 1450-2300 m in Altai, 1500-3200 m in Tien Shan and 2000-2500 m in Talasskiy Alatau. On migration visits forests, groves, gardens, forest-belts, bush thickets, reed-beds and tall weed thickets. Appears in mid-April – early May, many migrate in May; latest birds recorded in end May – early June. Breeding in separate pairs at 15-50 m apart. Nest is built usually on ground under grass, bush, stump or stone, among moss, tree roots, on tussock in 20-25 cm above ground or even in half-hole of birch stump at 1 m above ground. Only female builds it from dry grass and shrub bast with moss admixture, and lined with thin grass and some hair, for 4-8 days. Clutches of 4-7 eggs end May – mid-July. Only female incubates for 11-14 days. Both parents feed juveniles, which fledge at 11-15 days old, in end June – late July. One brood reared per year, but in years with early sprig two ones. Repeated breeding after loss of nest is common. Autumn migration begins in August, many birds leave in September, latest recorded in mid – end October, sometimes singles linger up to mid-November (or ever 10 December 1986 in Almaty!).

384. **Radde's Warbler** *Phylloscopus schwarzi* (Radde, 1863)

Vagrants recorded in Betpak-Dala at Chulak-Espe 24 September 1974 (Gavrilov *et al*., 1976), in Almaty 27 May 1986 (Rodionov, Gavrilov, 1993) and 6 May 2003 (*per* L.Svensson and P.Alstrom).

Rare vagrant. Occurs in reed-beds and in oak tree of Botanical garden.

385. **Dusky Warbler** *Phylloscopus fuscatus* (Blyth, 1842)

fuscatus – breeding in Southwest Altai in upper current of Bukhtarma river, on a joint of Ivanovskiy, Lineyskiy and Kholzunskiy ridges, close to Ridder (Scherbakov, 1974, 2001) and in Altaiskiy Tarbagatay ridge, but on Markakol' lake occurs only on migration (Berezovikov, 1989a). On migration recorded also near Aidarly (16 April 1999) and in Turaygyr ridge (25 April 2002; Belyalov, 2002e), at Chokpak Pass 29 September, 6-7 October 2000, on Sorbulak lake (23 September 1984; Kovalenko *et al*, 2001), near Semipalatinsk (5 October 1922) and Tashkent.

Rare breeding migrant. Inhabits highland with pygmy birch thickets at 1100-2000 m. On migration visits reed-beds and forest-belts. Appears in mid-April – early May, on Big Almaty Lake singing male recorded 27 April 2000 (*per* A.Kovalenko), near Tashkent one bird shot 12 May. Breeding in separate pairs. Nest is built in bush (birch, willow) near the ground from dry grass lined with feathers. Clutches of 4-6 eggs in end June, juveniles fledge in end July. In autumn in Bukhtarma valley recorded in mid-September, near Semipalatinsk 5 October 1922, two birds caught on Sorbulak lake 23 September 1984, and three singles at Chokpak Pass 29 September, 6 and 7 October 2000. Nearby of Tashkent one bird shot 10 October.

386. **Olivaceous Leaf Warbler** *Phylloscopus griseolus* Blyth, 1847

Breeding in Tien Shan, Dzhungarskiy Alatau, in Tarbagatay, on Southwest Altai, in Kalbinskiy Altai, in mountains to south of Semipalatinsk (Kandygatay) and in places in Kazakhishe upland (Karkaralinsk, Kyzylray). On migration occurs in foothills, in Nura valley 9 August 1994 (Andrusenko, 2002), in Betpak-Dala on Kurmanchite Mts. (Kovshar, Levin, 1993), in Kolshengel (Sklyarenko, 2003a), vagrant recorded 20 August in Aral'sk. On Chokpak pass recorded 9 and 11 May 1968, 10 May 1969, two birds ringed at 19-20 April 2004 (Gavrilov, 2005), one 29 August 2005 and obtained 29 September 1973.

Common, in places rare breeding migrant. Inhabits dry stony slopes with rocks, bushes, scanty grass and single trees at 1900-3600 m in Tien Shan and 500-2000 m on Altai. On migration visits deciduous forest, groves, gardens and forest-belts. Arrives in late April – early May, last migrants recorded mid-May. Breeding in separate pairs at 100-150 m from each other. Nest is built in bush (juniper, honeysuckle, dog-rose, rowan-tree), in grass, at once on low spruce twig, from dry grass and bush bast strips lined with hair and feathers. Only female builds it for 5-16 days, male helps her very rare. Clutches of 4-6 eggs found in mid-May – end June. Only female incubates for 14-17 days. Both parents feed juveniles, which fledge at 15-18 days old, in end June – early August. One brood per season, repeated breeding after loss of a nest is common. Autumn migration is early, many leave in August - early September, latest birds recorded in mid-September (near Sairam village at once 6 October).

387. **Wood Warbler** *Phylloscopus sibilatrix* (Bechstein, 1793)

Breeding in Southern Altai on Markakol' lake (Berezovikov, 1989a). Singing male observed in middle of June at Akmola (Stegman, 1934), 26 June 1977 in upper reach of Bukhtarma river near Archaty village (Kovshar, Berezovikov, 2001) and 2 June 1993 in Ural delta (Berezovikov, 2002c). On migration occurs in Ustyurt (Kovshar, 1995). Single birds recorded near Dzhanybek settle in Western Kazakhstan, at Aral'sk, in lower of Turgay river (Khrokov *et al*., 1990), in Kurgaldzhino Reserve (Andrusenko, 2002), in Karaganda, Ust-Kamenogorsk (Scherbakov, 1978), on Sasykkol lake (Khrokov *et al*., 1993), in Almaty, and in Western Tien Shan, in Aksu-Dzhabagly (Kovshar, 1966) and at Chokpak Pass 10 and 15 September 1975, 30 October 1976 (Gavrilov, Gistsov, 1985) and 17 September 2002.

Very rare breeding migrant, in places rare passage migrant. Inhabits deciduous and pine forest, and light birch forest with clearings on Altai. On migration occurs in foothills, in forest-belts, gardens and groves. Appears in end April – late May, in Talasskiy Alatau male shot 21 May 1962. Latest migrants recorded early June. Nest is built on ground from dry mare's tail and sedge lined with thin sedge. Clutch of 4-7 eggs in mid-June probably, as hatched juveniles recorded in early July. One brood with four fledglings observed 12 July 1982. Autumn migration passes in end July – August. Latest birds recorded mid-October.

388. **Common Chiffchaff** *Phylloscopus collybitus* (Vieillot, 1817)

abietinus *– upper parts brownish-greenish, more greenish and less brownish than* ***fulvescens****. Greenish colour more intensive on rump. Under parts with poorly expressed yellow spots.* Breeding in middle current Ural and Ilek valleys (Zarudnyy, 1888) subsequently not confirmed (Levin, Gubin, 1985). On migration occurs in Western Kazakhstan.

fulvescens *– upper parts brown with weak greenish-olive shade, under parts without yellow or occasionally with poorly expressed yellow spots. Greenish shade on rump less intensive than* ***abietinus****.* Breeding in Kokchetav upland, Shortandy area (Berezovikov, Kovalenko, 2001) and in Pavlodarskoye Trans-Irtysh'e (Kovshar, 1996a; Kovshar, Khrokov, 1993), south probably up to Karkaralinsk. On migration occurs everywhere.

tristis *– upper parts dark-brown, on under parts yellow colour absent. Rump sometimes with a weak greenish-olive shade.* Breeding in taiga of Southwest Altai, in pine woods of Kalbinskiy Altai and probably in Irtysh valley. On migration common in foothills of Northern Tien Shan, west up to lowers of Syrdarya and Turgay rivers, and also to upper current of Emba river.

sindianus *– upper parts greyish-brown, lighter than* ***tristis****, under parts without yellow. On rump sometimes olive shade.* Vagrants obtained in middle current of Emba river 22 September 1857, in Chu valley, September 1925, and in Kapal, at foothills of Dzhungarskiy Alatau 19 November 1848. One bird ringed 10 May 2005 in Syrdarya valley (*per* A.V.Kovalenko) and juvenile bird collected 3 October 2005 at Chokpak Pass.

Common breeding migrant, in places abundant passage migrant only. Inhabits deciduous and coniferous mountain forest from foothills up to 2000 m. On migration visits various forests, forest-belts, bush thickets (in mountains up to 2500-2700 m), reed-beds and tall weed thickets. Arrives in small groups early, in first half of March in southern areas, and in early – mid-April in northern and in mountains. Many birds migrate in April, latest recorded in end May – early June (as an exception in mid-June or even July). Breeding in separate pairs, not far apart. Spherical nest is built in bush (willow, currant, raspberry) and in tree (spruce, birch) at 0.4-10 m above ground. Only female builds it from dry grass and bush bast lined with plenty of feathers (vegetation fluff and hair used rare) for one-two weeks. Clutches of 4-7 eggs found in early June – mid-July. Only female incubates for 14 days. Both parents feed juveniles, which fledge at 15 days old, in early – end July. Regulary migrates in highlands of Zailiyskiy Alatau ridge, Big Almaty Lake, where observed 29 March – 14 May and 21 September – 25 October (Kovshar, Lopatin, 1983). Autumn migration begins in early August. Many birds leave in September – first half of October, at this time at Chokpak Pass in morning loose flocks of 40-50 birds not rare. Latest recorded in end October, lingered birds observed in early – end November.

Note. Recently Mountain Chiffchaff *Phylloscopus sindianus* (Lorenz, 1887) consider as a full species (Cramp, 1992).

389. **Willow Warbler** *Phylloscopus trochilus* (Linnaeus, 1758)

yakutensis *– upper parts darker, more brownish-olive, less greenish than* ***acredula****.* Breeding in Northern Kazakhstan (at Alekseyevka, north of Akmola) and in Ara-Karagay pine forest near Kustanay, on Southern Altai at Markakol' lake (Berezovikov, 1989a), and probably in Belaya Uba valley (Berezovikov, Rubinich, 2001), on Saur (Dolgushin, 2002). On migration observed in central and

eastern Kazakhstan. Recorded in lower of Sarysu river 28 August 1986 (Khrokov *et al*., 1991), on Sasykkol lake (Khrokov *et al*., 1993) and at Chokpak Pass, where singles ringed 3 May 1980 – 24 May 2003 and 29 August 1974 – 15 October 2003.

acredula – *upper parts greenish-brownish-olive, more greenish than* ***yakutensis***. Breeding in lowers of Ilek and Khobda rivers (Zarudnyy, 1888, 1897). On migration occurs mostly in western Kazakhstan where quite common in Ural valley and in Volga – Ural steppe.

Rare breeding migrant, but at most territory rare or common passage migrant. Inhabits deciduous, mixed and pine forest up to 1500 m. On migration occurs in forest, groves, gardens, forest-belts, reed beds, bush thickets and tall weed thickets with other Leaf Warblers often. Appears very rare in end March, usually in April, or even early May. Many birds migrate in first half of May. Latest recorded in end May – mid-June. Breeding in separate pairs. Spherical nest is built on ground among undergrowth from dry grass and thin rootless lined with thin grass and feathers, or dry larch needles, for near a week. Clutches of 4-8 eggs in June, which incubated for 13-15 days. Juveniles fledge at 18-19 days old, in mid – end July. Autumn migration begins early, from late July probably. Many birds leave in August and September. Latest recorded in end October – early November.

Regulidae

390. **Goldcrest** *Regulus regulus* (Linnaeus, 1758)

regulus – *back olive-green, more dark green; grey colour on back party of neck less developed than* ***coatsi***. Occurs on dispersal and in winter on Ural valley, in Northern and occasionally in Central Kazakhstan (in particular in Kurgaldzhino Reserve 19 October 1984; Andrusenko, 2002). At once 2 November 1927 obtained on Syrdarya near Dzhulek.

coatsi – *back lighter, grey colour on hind neck more developed than* ***regulus***. Probably this race breeds in Western and Southern Altai (Scherbakov, 1974; Berezovikov, 1989a) and also occurs on dispersal and in winter.

tristis – *sharply differentiate race. From others subspecies differs by smaller development and more light tone of yellow spot on crown. At males orange shade on crown absent or poorly developed, at females yellow spot strongly reduced and has pale-yellow colour. Black strips on each side of yellow spot developed much more poorly, than at other races, at females they very poorly marked or absent. General colour lighter, dull greyish-green.* Breeding in Tien Shan (Zailiyskiy Alatau, Kungey Alatau, Ketmen' ridge) and Dzhungarskiy Alatau. On dispersal and in winter occurs in foothills, and by mountains it reaches Western Tien Shan (on Chokpak Pass recorded 23-30 October 1968, 22 October 1971, 13 October 1972, 28 September – 25 October 1973, 6-24 October 2000, 23 October 2002, 20-25 October 2003, 4-22 October 2004) and Tashkent.

Common resident. Inhabits spruce and fir forest at 1700-2600 m in Zailiyskiy Alatau and 1450-1600 m in Altai. On dispersal and in winter visits flood plain deciduous forest, mixed and riparian forest, groves, forest-belts, bush and tall weeds thickets. Breeding in separate pairs, fairly far from each other. Nest is built in spruce twig at 2.5-15 m above ground from moss, lichen, cobweb, hair, vegetation fluff and grass bast lined with plenty of feathers. Both partners build it for 17-20 days. Clutches of 7-9 eggs in mid-May – early July. Only female incubates for 16-18 days, male feeds her. Both parents feed juveniles, which fledge at 18-20 days old, in end June – mid-July. One brood per season, repeated breeding after loss of first nest is common. Autumn-winter dispersal begins singly or in loose flocks up to one-two dozen birds mainly in September – October. Return spring movements not so clear, latest recorded in February, March or April and even in early May.

391. **Severtzov's Tit-warbler** *Leptopoecile sophiae* Severtzov, 1873

sophiae – breeding in Kirgizskiy Alatau (Kurtybay, Chungursay, vicinity of Merke settle), in Zailiyskiy Alatau (Aksay, Bolshaya and Malaya Almatinka, Talgar, Issyk, Turgen), in Kungey Alatau (Tauchilik), and also in places in Dzhungarskiy Alatau (near Dzharkent and in upper current of Aksu river). On dispersal and in winter down to foothills, sometimes reaching Ile valley (near Iliysk) and Sorbulak lake where one bird recorded in forest belt 20 November 2004 (Belyalov, Karpov, 2005).

Rare resident. Inhabits juniper thickets and upper spruce belt with juniper and honeysuckle bushes at 2150-3000m, on dispersal visits riparian forest and bush thickets on plains and in foothills. Breeding in separate pairs at 150-600 m from each other. Spherical nest is built in juniper or in spruce, at 0.3-15, usually 1-4 m above ground from moss, vegetation fluff, hair, dry grass and bush bast lined with plenty of feathers. Both parents build it for one-two weeks. Clutches of 5-8 eggs in early May – late June,

usually end May. Both parents incubate for 14-17 days, and feed juveniles, which fledge at 18-23 days old, in early June – beginning of August. Repeated breeding after loss of first nest (Magpie, Carrion Crow, Cuckoo) is common. Autumn-winter dispersal begins in October, in pairs or in small group of a dozen birds. In Ile valley recorded in December and January, but most birds winter in breeding area.

Muscicapidae

392. **Paradise Flycatcher** *Terpsiphone paradisi* (Linnaeus, 1758)

leucogaster – breeding in Pskem and Ugam valleys (Sayramsu gorge; Sklyarenko, 1991), in Talasskiy Alatau ridge, where common only in Aksu canyon (Kovshar, 1970); wide nests in Malyy Karatau and Borolday Mts. up to Koktal gorge. In 1980 found as breeding in Merke gorge, Kirgizskiy Alatau (Kolbintsev, 1984, 1991a) and in 2001 on Aspara river near Granitogorsk (Karpov, Belyalov, 2002a). A brood observed 5 July 2003 close to Akterek village, 110 km west of Almaty (Karpov *et al*., 2004). On migration occurs at Chokpak Pass (Gavrilov, Gistsov, 1985), where singles ringed and observed 28 April (2004) – 20 May (2001) and 22 August (2003) – 8 September (2005). Vagrant young male shot in Betpak-Dala at Chulak-Espe 19 June 1983 (Kovshar, 1988b). At neighbourhood of Almaty bright male observed some hours at 7 June 1998 (Levin, 1999). But A.V.Panov informs me, that this bird caught at Borolday Mts. and brought to Almaty for cage, but escaped in morning of 7 June 1998.

Common breeding migrant. Inhabits deciduous forest, groves and gardens without undergrowth near stream, on migration visits forest-belts and bush thickets. Arrives singly or in pairs in end April – early May, last migrants recorded in mid-May. Nest is built in tree (walnut, poplar, birch, apple, hawthorn) at 0.5-10 m above ground from bast strips and cobweb lined with thin bast strips. Both parents build it for 6-11 days. Clutches of 3-5 eggs in end May – end June. Only female incubates for 12-13 days. Both parents feed juveniles, which fledge at 13 days old, in early – end July. Repeated breeding after loss of first nest is possible. Autumn migration in August – early September, latest birds recorded in end September.

393. **Spotted Flycatcher** *Muscicapa striata* (Pallas, 1764)

striata – *upper parts darker with brownish shade; dark streaks on under parts more developed than* ***neumanni***. Breeding in middle current of Ural valley (Levin, Gubin, 1985), probably nests and to south of Uralsk, where between Kolovertnoe and Budarino occurs in summer (Dubinin, Toropanova, 1956). One nest with 4 eggs found 18 May 2004 in 50 km north of Beyneu (Levin, Karyakin, 2005). Breeding also in Kokchetav upland and Irtysh valley up to Semipalatinsk, in Semeytau Mts. and in Kalbinskiy Altai. In summer 1972 a restless pair recorded 11 June 1972 in Naurzum pinewood (Smetana, 1974). On migration occurs to the south.

neumanni – *upper parts lighter pure grey; dark streaks on under parts less developed than* ***striata***. Breeding on Southwest Altai and in Tarbagatay. In 24 July 2002 recorded as common in Kulyasu gorge, north-east Dzhungarskiy Alatau (Ashbi, Annenkova, 2002a). On migration occurs in Kurgaldzhino Reserve (Krivizkiy *et al*., 1985), Semirechye and in Tien Shan foothills. In highland of Zailiyskiy Alatau in spring not observed, but in August – early September is common (Big Almaty Lake; Kovshar, Lopatin, 1983).

sarudnyi – *upper parts with light-ochre shade, whitish on forehead developed more strongly. Wing blunter, usually P 2 < or = P 5, first primary longer of upper wing great coverts in many birds.* Breeding and also occurs on migration in Western Tien Shan, in southern half of Karatau ridge, on northern slopes of Talasskiy Alatau (Aksu-Dzhabagly Reserve), in Karzhantau, Pskemskiy and Ugamskiy ridges.

Common breeding migrant. Inhabits light deciduous forest, birch-pine groves, edges of pine and boreal coniferous forest, deciduous mountain and juniperus forest and groves up to 1450-1900 m in Altai, and 2000 m in Western Tien Shan. On migration visits riparian deciduous forest, gardens, reed-beds, bush thickets and forest-belts. Arrives in mid – end April or early May, migration finishes in end May – early June. Breeding in separate pairs at 25-100 m from each other. Nest is built in tree (elm, willow, poplar, birch, pine, juniper tree), in stump, in tree or building cavity at 1-14, usually 1-5 m above ground. Only female constructs it from cobweb, dry grass, tree and bush bast lined with thin grass and sometimes hair, feathers and vegetation fluff are added, for 4-7 days. Clutches of 3-6 eggs in mid-May – early July. Only female incubates for 11-14 days, male feeds her. Both parents feed juveniles, which fledge at 13-14 days old, in late June – mid-August. Repeated breeding after loss of first nest is common. Autumn migration begins early August, many birds leave in second half of August – first decade of September. Latest recorded in end September – mid-October.

394. **Sooty Flycatcher** *Muscicapa sibirica* Gmelin, 1789

sibirica – breeding in Western Altai in upper current of Belaya Uba river (Scherbakov, 1974), on Ivanovskiy and Lineyskiy ridges close to Ridder (Scherbakov, 2001) and in Southern Altai in upper reach of Bukhtarma river between Uryl and Berel villages (Berezovikov, Rubinich, 2001; Belyalov, 2002b).

Very rare breeding migrant. Inhabits light larch, birch-larch and spruce-larch-birch forest at 900-1800 m. Arrives in end May – mid-June. Breeding in separate pairs. Nest is built in tree (birch, willow, larch) at 1-8 m above ground from thin twigs, grass and lichen lined with larch needles and other soft material. Both partners gather materials, but mostly female builds it. Clutches of 4-5 eggs in mid – end June probably. Both parents feed juveniles, which fledge in mid-July – early August. Broods with two-five juveniles recorded 16 July 2001 - 9 August 1972. Autumn migration begins in late August and finishes in end September – early October.

395. **Red-breasted Flycatcher** *Ficedula parva* (Bechstein, 1794)

parva *– crown more greyish, less brownish; orange-ochre spot on throat and breast are more than* ***albicilla****. Breast (excepting orange-ochre spot) usually white, sometimes with greyish shade.* Breeding in middle current of Ural valley (Gubin, Levin, 1982). In Volga-Ural area and in lower current of Ural valley occurs on migration (Gavrilov *et al*., 1968). One female 9 May 1990 observed on western chink of Ustyurt (*per* A.F.Kovshar).

albicilla *– crown more brownish, less greyish; orange-ochre spot on throat and breast are less than* ***parva****. Breast (excepting orange-ochre spot) usually ash-grey.* Breeding on Western Altai in upper course of Belaya Uba river (Scherbakov, 2001) and in upper reach of Bukhtarma river near Uryl village, where juvenile with adult recorded 21 July 2001 (Berezovikov, Rubinich, 2001). Probably this race occurs on migration in other territory of Kazakhstan, from Naurzum Reserve (Gordienko, Moiseev, Smetana, 1980; Bragin, Bragina, 2002), Mugodzhary ridge and area adjacent to Aral Sea from north up to Ust-Kamenogorsk (Scherbakov, 1978), area adjacent to Balkhash lake from south and Almaty. In 25-27 October 1998 one bird observed in Aksu-Dzhabagly Reserve, in Dzhabagly settle (Kolbintsev, 1999). On Chokpak Station two juveniles ringed 16 September and 1 October 2005.

Rare breeding migrant. Inhabits flood-lands deciduous and mixed forest on plains and in mountains up to 1300 m in Altai. On migration visits bush thickets, forest-belts and groves. Arrives in end April – early May, poor flight finishes in end May. Nest is built in tree (in Siberia in tree holes mostly) at 0.1-1.1 m above ground, from moss, dry grass, bast, thin rootlets lined with poplar fluff, hair and feathers. Only female builds it. Clutches of 4-7 eggs found in end May – mid-June. Broods recorded in end June – late July. Repeated breeding after loss of first nest is common. Only one nest is known for Kazakhstan. Autumn migration from end August, many birds leave in September, latest recorded in mid – end October.

396. **Semi-collared Flycatcher** *Ficedula semitorquata* (Homeyer, 1885)

Vagrants repeatedly obtained in May 1962-1963 on Mangyshlak (Mitropol'skiy, 1965).

397. **Collared Flycatcher** *Ficedula albicollis* (Temminck, 1815)

albicollis – vagrants obtained in Volga-Ural area, in garden of Aleksandrov Gay 25 April 1958 and in small grove on farm Danilka in Chapaevo district 12 May 1958 (Gavrilov *et al*., 1968).

398. **Pied Flycatcher** *Ficedula hypoleuca* (Pallas, 1764)

hypoleuca *– black morph submitted considerably by large number of specimens than* ***sibirica****. At other morphs upper parts darker, with less developed greyish shade than* ***sibirica****.* Occurs on migration in Volga-Ural area, in Ural valley and on Mangyshlak.

sibirica *– black morph submitted considerably by smaller number of specimens than* ***hypoleuca****. At other morphs upper parts lighter, with more developed greyish shade than* ***hypoleuca****.* Probably breeding in Northern Kazakhstan (at Suvorovka settle and north of Ryazanka settle). Occurs singly on spring migration 26-29 April 1972 in Naurzum Reserve (Smetana, 1974; Bragin, Bragina, 2002), on Arys station 21 May, in Akmola and in Kurgaldzhino Reserve 26 May 2000, 19 May 2001 and 18 May 2002 (Koshkin, 2003).

Accidental breeding migrant, in places common passage migrant. Inhabits pine, mixed and deciduous forest, on migration visits groves, forest-belts and shrub thickets. Arrives in early April, latest

migrants recorded in end May. No data about breeding biology in Kazakhstan existed. Breeding in separate pairs. Nest is built in tree holes, building cavities and nest boxes from dry grass lined with thin grass and hair. Clutches of 5-7 eggs early May – June. Only female incubates, male feed her. Both parents feed juveniles, which fledge in June – July. Autumn migration in August – early September, latest birds recorded mid-September.

Timaliidae

399. **Bearded Tit** *Panurus biarmicus* (Linnaeus, 1758)

russicus *– male head grey; back, rump, rectrices and borders of secondary outer webs ochre; wine colour on upper tail coverts lighter; at female upper parts also lighter than nominate race. Local variability in various parts of area poorly differing by intensity of colouring (Northern Caucasus - dull colour, Ural river basin - dark colour, Syrdarya - light colour, Ile river - dark colour, Transbaykalye - light colour). These distinctions usually widely covered by individual variability.* Breeding practically everywhere in Kazakhstan, from Volga-Ural area and coastal islands at Mangyshlak up to Zaysan and Alakol' depressions, middle current of Ile river and Biylikol lake. In steppe zone distributes episodically, to northern Kazakhstan - Chany lake. Northern border is defined in Rybnyy Sokryl and Chelkar lakes, upper course of Irgiz river, Naurzum, at Borovoye and near Selety-Teniz lake. From steppe zone for winter it moves in desert zone. Occasionally migrating flocks observed at Chokpak Pass in foothills of Western Tien Shan.

Abundant resident, in places common or rare breeding migrant. Inhabits reed-beds with scattered willow bushes often on lakes with fresh or salty water. On dispersal and in winter visits bush thickets, riparian forest and grass thickets. In northern areas appears in March – April. Breeding in separate pairs. Nest is built in reed or mace beds among dead stem heaps, in dense dry stems, in emptiness of floating reed stems islands, in Cormorant nest or reed fence of house at 5-20 cm above water. It is built by both partners from dry reed leaves and grass lined with plenty of reed panicles and fluff, with some feathers sometimes. Clutches of 4-8, usually 5-6 eggs in end April – end June. Both parents incubate and feed juveniles, which fledge in last decade of May – early July. At northern areas one brood is reared per year, in southern ones two or three probably. Repeated breeding after loss of fist nest (out of flooding when strong wind, or of raptor – Water Vole) is often. Autumn migration begins in September – October in flocks of 30-80 birds, which can fly very height. At Chokpak Pass registered in October – mid-November.

Aegithalidae

400. **Long-tailed Tit** *Aegithalos caudatus* (Linnaeus, 1758)

caudatus – episodically breeds in middle (Levin, Gubin, 1985) and lower current of Ural valley between Kolovertnoe and Budarino (Dubinin, Toropanova, 1956), on Kokchetav raising (Zerenda, Dubrava, Beloye lake), near Borovoye, in Kazakhishe upland (Bayanaul, Karkaralinsk, Kaynar, Kyzylray), in pine forest on Irtysh river in Semipalatinsk area, in Kalbinskiy Altai, in Southwest Altai (Ridder, Bukhtarma valley, Markakol' lake) and in Saur. Small flock (brood?) recorded in Kurgaldzhino Reserve on Nura valley 10 October 2004 (Kovshar, 2005). Found on breeding in eastern part of Dzhungarskiy Alatau and near Topolevka village, where in summer 1982 brood recorded (Berezovikov, Levin, 2002b; *per* S.L.Sklyarenko), and in Charyn Grove and Ile valley (down up to Malay Sary Mts.) were appeared in 2000 (Sklyarenko, 2003a). On dispersal and in winter occurs south up to northern shore of Caspian Sea, Karaganda and northern foothills of Tien Shan (Almaty area).

Common, in places rare breeding migrant or resident. Inhabits deciduous and mixed forest with shrub undergrowth, in river or stream valleys often, on plains and in mountains up to 1500 m. On autumn – winter dispersing visits pine forest, groves and garden in towns. In breeding areas appears in March – April. Breeding in separate pairs, at 0.5-1 km from each other. Massive nest is built by both partners in tree or in bush at 0.5-17 m above ground from moss, lichen and grass strips lined with plenty of feathers. Clutches of 10-14 eggs in mid-April – May. Female incubates for 11-15 days. Both parents feed juveniles, which fledge at 15-16 days old, in end May – early August. Autumn dispersal begins in late July, in flocks of 20-100 birds, out of breeding area appears mainly in September - October.

Paridae

401. **Marsh Tit** *Parus palustris* Linnaeus, 1758

brevirostris – breeding in Southern Altai, in Bukhtarma valley only.

Rare resident. Inhabits deciduous groves, poplar-birch or poplar-willow forest with bush thickets near water streams, edges of taiga forest. Breeding in separate pairs. Nest is built in tree hole, not height of ground. No specific data on biology in Kazakhstan existed.

402. **Willow Tit** *Parus montanus* Baldenstein, 1827

borealis – breeding in Northern Kazakhstan (Naurzum, Kokchetav upland, at Alekseyevka), in Shortandy area (Berezovikov, Kovalenko, 2001), in Pavlodarskoye Trans-Irtysh'e (Kovshar, Khrokov, 1993), Semipalatinsk area, Kazakhishe upland (Bayanaul, Karkaralinsk), Kalbinskiy Altai, on Southwest Altai and Saur. But in last years in Naurzum Reserve found in spring only (Bragin, Bragina, 2002). On dispersal occurs in valleys of Irtysh, Ishim and Tobol rivers, in Utva-Ilek area (Berezovikov *et al*., 2002a), in lower Ural valley and about Karaganda.

Common, in places rare resident. Inhabits coniferous (pine, larch, fir) or mixed (with birch, poplar and willow) forest and deciduous flood-land forest up to 2000 m, where lives all the year. Breeding in separate pairs, which are formed in late winter – early spring. Nest is built by female (male escort her only) in dead tree or stub hole (birch, poplar, larch, fir) at 0.4-6 m above ground from bast lined with plenty of hair and feathers. Clutches of 4-8 eggs found in mid-May – mid-June. Only female incubates for 13-15 days, male feed her. Both parents feed juveniles which fledge in mid-June – mid-July. In August – September dispersal begins in small groups.

403. **Tien-Shan Willow Tit** *Parus songarus* Severtzov, 1873

songarus – breeding in coniferous forest of Northern Tien Shan, to east from Zailiyskiy Alatau, and in Dzhungarskiy Alatau. On autumn-winter dispersal sometimes occurs in deciduous belt, reaching Almaty (in winter 1971/1972 observed in Botanical garden).

Common resident. Inhabits spruce forest above 1500 m, on autumn-winter dispersal visits foothills very rare. Breeding in separate pairs, which stable for several years, at 150-200 m from each other. Pairs are formed in winter. Nest is built in tree or stub hole made by both birds for at least three weeks at 0.6-10 m above ground, rarely in woodpecker, natural hole or nest box, from moss, bast and dry grass lined with plenty of hair and feathers, for one-two weeks. Clutch of 4-6 eggs in mid-May – mid-June. Only female incubates for 13-15 days, male feeds her. Both parents feed juveniles, which fledge at 20-22 days old, in end June – mid-July. Broods observed up to early August. In autumn – winter they observed in small groups or in pairs.

404. **Siberian Tit** *Parus cinctus* Boddaert, 1783

sayanus – breeding in Western Altai in headwaters of Belaya Uba river and on adjacent slopes of Ivanovskiy and Lineyskiy ridges, also on western slope of Kholzunskiy ridge (Scherbakov, 1974, 1978a), and in Rakhmanovskiye springs area (Starikov, Prokopov, 2002). In autumn occurs in upper reaches of Kara-Kaba river in Southern Altai (Berezovikov, 1989a), where breeds probably.

Rare resident. Inhabits mountain old cedar-larch light forest with dead wood, wind-fallen trees and big boulders at 1700-1900 m. The only known nest found in tree hole of dead larch with 7 juveniles, which fledge 10 July 1974, and other brood observed 6 August 1972.

405. **Coal Tit** *Parus ater* Linnaeus, 1758

ater – *back and rump bluish-grey without brownish-olive shade. Under parts dirty white with very weak ochre shade on sides. Male wing length 58.0-64.0 (61.0) mm.* Breeding and occurs in winter in taiga forest of Southwest Altai. In Kalbinskiy Altai found in relict fir-tree forest at Koktau mountains (Scherbakov, 1989a). Probably breeds in north-eastern part of Dzhungarskiy Alatau, where was common in end July 2002 (Ashbi, Annenkova, 2002a). Breeding of two subspecies (see later) on one ridge very unusual! On dispersal and in winter occurs in Irtysh and Ural valleys, up to Caspian Sea, in Naurzum pine forest (at 13 May 2000; Bragin, Bragina, 2002), several times observed near Chelkar station in autumn (Garbuzov, 2005), in Kurgaldzhino Reserve (Andrusenko, 2002), Karaganda, Karkaralinsk, near Bektau-Ata, in Tentek valley (Alakol' depression) and on Ile valley (Belyalov, 2002a; Gubin, 2002b; Panov, 2002a).

rufipectus *– back and rump bluish-grey, darker than* ***ater****. On rump weak olive shade developed. Under parts dirty ochre, sides ochre-olive. Male wing length 58.0-63.0 (60.0) mm.* Breeding in Tien Shan (except for western part) and Dzhungarskiy Alatau (up to Central part; Sklyarenko, 2002c). On dispersal occasionally come down in foothills (up to Almaty). Single bird obtained 15 December 1996 in Dzhabagly village in Talasskiy Alatau (Kolbintsev, 1999); probably it was ***rufipectus***, which breeds in Chatkal ridge (Belyalov, 2002a).

Common resident, in places rare winter visitor. Inhabits mountain coniferous (spruce, fir, larch, pine), mixed or birch-willow forest up to 1500-1800 m (Altai), or 2500-2700 m (Tien Shan). On dispersal and in winter visits deciduous forest on plains and in foothills very rare. Pairs are formed in autumn – winter. Breeding in separate pairs at 70-80 m from each other. Nest is built by female in tree hole (up to 20 m above ground), in ground hole between stones, tree roots or in human building from moss lined with plenty of hair for one-two weeks. Nest boxes are used willingly. Clutches of 6-9 eggs in early May – end June. Mainly female incubates, male sometimes helps her, for 13-15 days. Both parents feed juveniles, which fledge at 19-20 days old, in early June – end August. Repeated breeding after loss of first nest is common. On autumn – winter dispersal occurs singly, in pairs or in small groups from end September until mid March.

406. **Black Crested Tit** *Parus rufonuchalis* Blyth, 1849

Breeding in Western Tien Shan, in Ugamskiy, Pskemskiy, Chatkal'skiy ridges, in Talasskiy Alatau (basins of Baldabrek and Bala-Baldabrek, Kysylkurt ridge; Chalikova, 2004a) and in Kirgizskiy Alatau (between Taraz and Merke, from 2550 m.). In foothills appears very rare, only 7 October 1975 one recorded at Chokpak Pass (Gavrilov, Gistsov, 1985).

Rare resident. Inhabits juniper forest at 1800-2600 m, but in Kysylkurt ridge singing male recorded in honeysuckle thicket with crags 13 May, 25 km from nearest juniper forest. On autumn dispersal visits deciduous forest and forest-belts in foothills sometimes. Nest is built in hole under tree roots, stones or in rock cracks, very rare nest boxes are used too, from moss and hair. Clutches of 4-6 eggs in end April – early May. Only female incubates, male sometimes feed her. Both parents feed juveniles, which fledge in end May – end July. May be two broods are reared per year. In foothills it observed in October – February singly and in pairs.

407. **Blue Tit** *Parus caeruleus* Linnaeus, 1758

caeruleus – breeding in riparian wood of Ural river, south up to Kozhekharovo - Budarino (Dubinin, Toropanova, 1956; Levin, Gubin, 1985), and also about Urda village. On migration and in winter observed up to Atyrau, at Uil and lower Emba valleys. One bird recorded in mid January – early April 2004 at Dokuchaevka and small flock registered 4 October 2004 on Batpakkol lake (Bragin, 2005). Two birds caught on Zhalauly lake in lower of Turgay river 8-10 October 1975 (Auezov *et al*., 1978), and flock of 15 birds recorded on Tengiz lake from 19 August till 7 September 1979 (Andrusenko, 2002).

Common resident. Inhabits deciduous, mixed, riparian forest with bushes, rare groves and gardens. In autumn – winter visits reed beds often. In spring on breeding grounds appears in March – April. Breeding in separate pairs at several hundred metres from each other. Nest is built by female (she prepares hole for nest mainly) in tree holes or nest boxes from moss and bast lined with plenty of hair for 2-11 days. Clutches of 7-13 eggs end April – mid-June. Only female incubates for 11-13 days, male sometimes feed her. Both parents feed juveniles, which fledge at 16-21 days old, in early June – end July. Two broods. Autumn dispersal begins in end August, intense migration occurs in second half of September at lower reach of Ural valley in flocks of 20-50 birds, 2633 and 1361 birds ringed in 1974-1975 near Atyrau.

Note. A hybrid with *Parus cyanus* collected on Ural valley near Kolovertnoe 24 January 1959.

408. **Yellow-breasted Azure Tit** *Parus flavipectus* Severtzov, 1873

flavipectus – breeding in Western Tien Shan, on south-west spurs of Chatkal'skiy ridges, in Pskemskiy and Ugamskiy ridges, in Talasskiy and Kirgizskiy (at Merke village) Alatau. Not regularly breeds in Karatau (Sklyarenko, 1989). On dispersal and in winter comes down to foothills, repeatedly observed at Chokpak Pass (Gavrilov, Gistsov, 1985) where became common on breeding in recent years. Vagrant occurs in Zailiyskiy Alatau on Talgar gorge, where two birds shot 10 December 1875. Distribution of the species is not well known.

Rare, in places common resident. Inhabits deciduous or juniper forest, groves, gardens, riparian forest and forest-belts at 1200-1800 m. Breeding in separate pairs at 15-250 m from each other. Nest is built in tree hollow, cliff cracks, building cavities, holes of concrete poles on railway, in clay precipices hole and nest boxes from moss and shrub bast lined with plenty of hair. Only female prepares hole and builds nest from mid April, male escorts her. Clutches of 5 - 10 eggs in early May – end June. Female incubates only for 13-16 days and rarely male feeds her. But both parents feed juveniles, which fledge at 18-21 days old, in first decade of June – end July. Two broods. Repeated breeding after loss of a nest is often. Most of the year they live in small groups.

Note. A juvenale male, hybrid with Azure Tit (Parus cyanus), collected by I.F. Borodikhin on Big Almaty Lake 6 September 1965.

409. **Azure Tit** *Parus cyanus* Pallas, 1770

cyanus *– head white. Back darker, more bluish, and less greyish-bluish; white colour on secondaries less distributed than* ***hyperrhiphaeus****.* Probably this race occurs on dispersal and in winter in Western Kazakhstan (Gavrilov *et al*., 1968).

hyperrhiphaeus *– head white. Back lighter, more greyish-bluish, and less bluish; white colour on secondaries more distributed than* ***cyanus****.* Breeding in middle current of Ural valley, in Northern Kazakhstan (Naurzum, Petropavlovsk area, Kokchetav upland), at Borovoye, Alekseyevka and Akmola, in eastern part of Kazakhishe upland (Bayanaul, Kent, Kyzylray), near Karaganda (Stepanov, 1988) and in Kalbinskiy Altai, east up to western foothills of Altai. On dispersal and in winter occurs somewhat southern also (in particular, in Kurgaldzhino; Krivizkiy *et al*., 1985) and several times near Chelkar station in autumn (Garbuzov, 2005).

yenisseensis *– head with grey shade. Back lighter than* ***cyanus****, but darker than* ***hyperrhiphaeus****. White colour on secondaries distributed near the same, as at* ***cyanus****.* Breeding in Southwest Altai, in Zaysan depression, Saur ridge and in eastern part of Dzhungarskiy Alatau (Berezovikov, Levin, 2002b). Here occurs also on dispersal and in winter.

koktalensis *– colour is similar to* ***hyperrhiphaeus****, and differs by more massive bill.* Breeding in Chu valley, on area adjacent to Balkhash lake from south, in lower current of Ile, Karatal, Lepsy and Aksu rivers and in Alakol' depression. In the same area occurs in winter.

tianschanicus *– head with intensive grey shade, and darker than* ***yenisseensis****. Back is the same dark as* ***cyanus****, and darker than* ***yenisseensis*** *and* ***hyperrhiphaeus****. White colour on secondaries less distributed than* ***cyanus*** *and* ***yenisseensis****.* Breeding and wintering in Tien Shan, Dzhungarskiy Alatau, Tarbagatay, in middle and upper current of Ile valley.

Common, in places rare resident. Inhabits deciduous and riparian forest, groves, gardens, and occasionally reed-beds with shrubs or mixed and coniferous forest with shrubs under growth, both on plains and in mountains up to 2500 m. On dispersal prefers deciduous forest and groves. Breeding in separate pairs not close one to other. Pairs form from mid February. Nest is built in tree hole, in building cavities and stone constructions, (nest boxes are used very readily), in pile of old reeds or in ground hole of Muskrat even, from thin twigs, dry grass and moss lined with plenty of hair, feathers and cotton wool, for two weeks or some more. It situates not height above ground mainly. Clutches of 4-9 eggs in early May – early July, female incubates for 13-14 days. Both parents feed juveniles, which fledge in mid-June – early August. Though breeding is very long, it is not proved up to present, how much brood are reared by a pair per year. In August – September, after moult is finished, they begin to disperse singly, in two or up to 15-20 birds. *P.c.tianshanicus* hybridises with Yellow-breasted Azure Tit, such specimens with trace of yellow on breast and sides observed in May of 2002 at Maloye Almatinskoye gorge near Medeo.

410. **Great Tit** *Parus major* Linnaeus, 1758

major – breeding everywhere in Ural valley down to delta (Gubin *et al*., 1977; Levin, Gubin, 1985), in Ilek valley, in Northern Kazakhstan, south up to Naurzum Reserve and Shortandy. In middle part of Mugodjary ridge brood recorded 20 June (Kovshar, Davygora, 2004). It lives on Irtysh valley and in Pavlodarskoye Trans-Irtysh'e (Kovshar, Khrokov, 1993), in Kalbinskiy Altai and in Southwest Altai, in Kazakhishe upland (Karkaralinsk, Kent), in Saur, Tarbagatay and Dzhungarskiy Alatau. In 1960-1962 it was introduced in Almaty and now breeds in Zailiyskiy Alatau, its foothills and on adjacent plains (Sklyarenko, Lopatin, 1989). In July 1997 recorded in Chulak mountains (Berezovikov, 1999), in June 2002 in Charyn grove and from 1996 in Kungey Alatau (Berezovikov, 2004). Since winter 1994 appears in Dzhabagly village (Belousov, 1995), and in subsequent years begins to breed in foothills of Western Tien Shan. On dispersal and in winter occurs to the south, in lower Emba (Kul'sary; Neruchev,

1968), Aralsk town (Grachev, 2001), in Kurgaldzhino Reserve (Khrokov *et al*., 1977), at Karaganda and in Ile delta.

Common resident. Inhabits deciduous, mixed and coniferous forest, groves and forest-belts on plains and in mountains up to 1300-1400 m. Pairs form in February – March. Breeding in separate pairs not close apart. Nest is built in tree hole (made by Woodpecker or in natural ones in poplar, elm, willow, birch), in building cavities, or in nest-boxes from dry grass, rootlets and moss lined with plenty of hair and feathers, up to 5 m above ground. Clutches of 7-15 eggs in mid-April – early July. Female builds nest for 4-10 days and incubates for 11-14 days. Both parents feed juveniles, which fledges in end May – end August. Female begins to lay second clutch at 1-2 days before or after fledge of first juveniles. Two broods, repeated breeding after loss of a nest is common. Most of the year it lives in small groups of 3-10 birds. Hybridises with Grey Tit (*Parus bokharensis*) freely (Chalikova, 2001), such specimens recorded in foothills of Western Tien Shan, and ringed at Chokpak Pass.

Note. In spring 1961 -1962 more then 500 birds successfully introduced in Almaty from Omsk and Novosibirsk (Siberia).

411. **Grey Tit** *Parus bokharensis* Lichtenstein, 1823

bokharensis *– the most light and smaller race. On upper parts bluish shade well developed. Male wing length 64.5-70.0, female 62.0-66.5 mm. Male bill length 7.6-9.0, female 7.4-9.0 mm.* Breeding from eastern coast of Aral Sea and Syrdarya delta to east up to Chu valley. Isolated breeding populations occur on Mangyshlak, in Ushtogan sands, where the nest with clutch (Zaletaev, 1968) found, and on middle part of Emba valley, where adult and juvenal birds recorded in June (Kovshar, Davygora, 2004).).

ferghanensis *– upper parts darker, more greyish-bluish, less clean - bluish; general size bigger than* ***bokharensis****. Male wing length 67.0-75.4, female 65.0-72.2 mm. Male bill length 8.3-9.2, female 8.0-9.4 mm.* Breeding in Western Tien Shan (Pskemskiy and Ugamskiy ridges). In Aksu-Dzhabagly Reserve in 1960-th only rare singles occurs in winter (Kovshar, 1966), it begins to breed here from 1983 (Kovshar, Chalikova, 1992). Probably this race lives in Karatau (Besaryk river) and in Borolday, where 1982-1985 it settles in artificial nest-boxes (Sklyarenko, 1989, 1992), though I.A.Dolgushin (1951) in 1941 not observed them in Karatau ridge. Last years it became common an autumn at Chokpak Pass, where occasionally recorded and before (Gavrilov, Gistsov, 1985). On dispersal rarely occurs outside the limits of breeding area.

turkestanicus *– upper parts darker than* ***bokharensis****, but lighter than* ***ferghanensis****. Bill larger and more massive than the previous races. Male wing length 68.2-73.5, female 68.2-70.7 mm. Male bill length 8.6-9.6, female 8.8-10.0 mm.* Breeding from western edge of Balkhash lake and Ile valley to north up to Alakol' depression. On dispersal rarely occurs outside the limits of breeding area.

Common resident. Inhabits saxaul, deciduous and riparian forest, groves and forest-belts up to 1200-1500 m. On dispersal occurs in juniper forest (up to 1800 m.). Pairs form from mid February. Breeding in separate pairs, not far one from other often. Nest is built in tree hole (made by Woodpecker, or in natural one) from thin twigs, dry grass and leaves lined mainly by hair and feathers. Clutches of 4-8 eggs found in end April –June. Both parents feed juveniles, which fledges in end May – early August. Two broods; repeated breeding after loss of a nest is common While disperse in autumn–winter occurs singly or in small groups of 5-10 bird.

Sittidae

412. **Eurasian Nuthatch** *Sitta europaea* Linnaeus, 1758

europaea *– throat, breast and belly white. Bill longer, thicker and more massive, general sizes bigger than* ***asiatica****. Male wing length 85.0-91.0 (88.0) mm.* Probably this race occurs on dispersal in Ural valley, south up to Khar'kin 21 September 1949 and 18 October 1956 (Dubinin, Toropanova, 1956; Gavrilov *et al*., 1968). It was collected in Airtau on Kokchetav upland (Slovzov, 1878), however after this here not observed. Single bird recorded in January 1991 in Betagach forest (Naurzum Reserve; Bragin, Bragina, 2002) and 25 October 2002 at Kurgaldzhino Reserve (Koshkin, 2002).

asiatica *– throat, breast and belly white. Bill shorter, less massive and thinner also, general sizes lesser than* ***europaea****. Male wing length 74.0-82.0 (78.0) mm.* Breeding in coniferous forests adjacent to Irtysh river, in Kalbinskiy Altai and in Southwest Altai (Ivanovskiy and Altaiskiy Tarbagatay ridges, Markakol' lake etc.). Vagrant shot at Taraz in February 1966.

Rare, in places common resident or rare winter visitor. Inhabits coniferous, mixed and deciduous forest from plains up to 1900 m. On dispersal visits deciduous forest in Ural valley. Pairs form in March –

mid April. Nest is built in tree hole (larch, birch) at 2-20 m above ground from bark, vegetation fibre and leaves. If hole too big, it is puttied by clay, and the entrance of 25-35 mm in diameter is leave. Only female constructs nest, male escorts her. Clutches of 5-10, usually 6-8 eggs early May – early June. Female incubates near two weeks, both parents feed juveniles, which fledge at 21-24 days old, in mid-June – mid-July. Broods not break up until mid-August. Very rarely occurs on dispersal in Ural valley in October.

413. **Eastern Rock Nuthatch** *Sitta tephronota* Sharpe, 1872

tephronota – breeding in Western Tien Shan (Pskemskiy and Ugamskiy ridges, Talasskiy Alatau, Kazgurt, Borolday, southern part of Karatau), in Kirgizskiy and western part of Zailiyskiy Alatau up to Chemolgan gorge, Turaygyr and Charyn canyon (Berezovikov *et al*., 2002), in Chu-Iliyskiye Mts., in Dzhungarskiy Alatau and its spurs (Malay Sary, Chulak, Kalkany, Matay), north up to Abakumovka. Breeding also in mountain remains Pistelitau in Southern Kyzylkum desert. On dispersal it not observed outside breeding area. One bird recorded on Chokpak Pass in forest-belt 3 May 2005.

Common resident. Inhabits rocky gorges with cliffs and rocks on mountain slopes without forest usually, at 400-2000 m, where occurs all the year. Breeding in separate pairs fairly far from each other. Nest is built on rock or rarely on grave clay monument, at 1-30 m above ground, from clay, and resembles a jug attached to a rock by bottom. Its weight can be 3-5, up to 18 kilogram. Nest chamber lined with dry grass, feathers and hair. Both parents construct nest, which used in subsequent years too. Clutches of 4-9, usually 5-7 eggs in early April – first decade of June. Female incubates only, and male feed her. Both parents feed juveniles, which fledge in mid-May – end July. A fairly long time broods not break up (up to September), but most of the year birds live singly.

Tichodromadidae

414. **Wallcreeper** *Tichodroma muraria* (Linnaeus, 1766)

Breeding in upper reaches of Pskem and Chatkal rivers near Chimgan, in some points of Talasskiy Alatau, probably in Kirgizskiy Alatau too, though data from this ridge absent. Lives also in Zailiyskiy Alatau and Ketmen ridge, in Dzhungarskiy Alatau (at Dzharkent and upper course of Karatal river) and in Saur. On dispersal and in winter it comes down to Almaty, Malay Sary, Chu-Iliyskiye Mts., Chimkent and Arys.

Rare resident. Inhabits rocky gorges with cliffs at 2800-3500 m, but during dispersal visits foothills (Almaty) and low dry mountains on plains with rocks or clay precipices. The wandering road can be up to 250-500 km of breeding place. In 18-21 December 2003 18 birds recorded on clay precipices of Chardara reservoir (Erokhov, Belyalov, 2004). Pairs form in April. Nest is built in crack of vertical cliffs up to 100 m above bottom and on deep of 0.5 – 1 m off entrance from moss, dry grass and hair lined with plenty hair and feathers. Clutches of 2-5 eggs in June – July. Female incubates, and male feed her. Both parents feed juveniles, which fledge in mid-July – early August. Brood breaks up after short time, and most of the year birds occur singly. Autumn dispersal begins in end September – October, and birds live outside of breeding places up to March.

Certhiidae

415. **Eurasian Treecreeper** *Certhia familiaris* Linnaeus, 1758

familiaris *– upper parts darker, whitish spots smaller and less numerous than* ***daurica****.* Occurs on dispersal and in winter in Ural valley down to Atyrau (Gavrilov *et al*., 1968; Gubin *et al*., 1977). Single bird recorded at October 1973 in Naurzum pine forest (Bragin, Bragina, 2002).

daurica *– the most light race. Upper parts lighter, whitish spots bigger and more numerous, than at other races.* Breeding in tape coniferous forests near Semipalatinsk, in Kalbinskiy and Southwest Altai and probably in Saur. Probably to this race observations at Astana 29 November and 16 December 1990 and in Kurgaldzhino Reserve 2 and 14 November 2002 concern (Koshkin, 2002).

tianschanica *– ochre shade on upper parts more yellowish, less brownish or rusty-brown. Bill longer than at other races.* Breeding in Northern Tien Shan (Zailiyskiy, Kungey, Terskey, Ketmen' ridges) and Dzhungarskiy Alatau, and also in riparian forest in Charyn river. On dispersal occurs in Aksu-Dzhabagly Reserve (Talasskiy Alatau), in Almaty, Dzharkent and in foothills of Dzhungarskiy Alatau.

Rare resident, or in places rare winter visitor. Inhabits coniferous, mixed and deciduous mountain forest, especially plots of old forest with mossy trees, at 1400-2500 m, out of breeding season visits gardens, groves and human settlements. Pairs are formed in March, nest construction in April – May. Nest is built in natural tree holes, under bark, in stump excavations, under house roof or in crevice between boards, and very rarely between vertical twigs, growing from place of break trunk, at 0.5-4 m above ground, rarely higher. Spruce, larch, birch and other trees are used. It is constructed from thin spruce twigs, dry grass, moss and bast lined with hair and plenty of feathers, by female for two weeks roughly. Clutches of 4-9, usually 5-7 eggs found in early May – mid-June. Only female incubates for 15-16 days, male feed her. Both parents feed juveniles, which fledge at 22-23 days old, in early June – early July. No information about double breeding existed. On dispersal occurs singly or in small groups in October, and up to February birds observed outside of breeding places.

416. **Himalayan Treecreeper** *Certhia himalayana* Vigors, 1832

taeniura – at once shot in winter in mountains on Ugam valley. Visual observations in Aksu-Dzhabagly Reserve in July and January (Shevchenko, 1948; Shulpin, 1956) not confirmed by collection skins, but 25 March 1995 one bird obtained in Dzhabagly village (Kolbintsev, 1995). In upper current of Pskem river observed 31 August 2002 (V.Kovshar, 2002a).

Accident resident. Inhabits juniper forest at 1500-2000 m, on dispersal visits deciduous trees and forest. No information about its biology in Kazakhstan existed.

Remizidae

417. **Penduline Tit** *Remiz pendulinus* (Linnaeus, 1758)

pendulinus *– forehead black, bordered behind brown strip; crown and hind neck white; brown back cross strip dark, sated colouring. Male wing length 54.2-58.8 (56.0) mm.* Probably occurs in Western Kazakhstan on migration.

caspius *– forehead black, crown and back brown. On nape and neck light colour can be developed. The sizes of this light field individually vary from significant (back half of crown and neck) up to complete absence of light colour on these parts. Sizes large, claw of back finger massive. Male wing length 53.4-56.9 (55.3) mm.* Breeding in Volga-Ural area, middle and lower current of Ural valley, east up to Naurzum Reserve (Smetana, 1974; Bragin, Bragina, 1999) and Mugodzhary ridge. On migration occurs in upper reaches of Emba river and on Mangyshlak.

jaxarticus *– general colour similar to* ***pendulinus****, but brown cross strip on a back narrower. General sizes lesser, claw of back finger less massive than* ***pendulinus****. Male wing length 52.2-56.7 (54.3) mm.* Breeding in northern Kazakhstan from Mugodzhary ridge up to Semipalatinsk, where it is common in Irtysh valley (Panchenko, 1968), near Ust-Kamenogorsk, in spurs of Narymskiy ridge and Chernyy Irtysh valley (Scherbakov, 2001). On migration occurs in Central Kazakhstan, Syrdarya and Chu valleys. Occasionally wintering on Syrdarya and in Chirchik valleys.

stoliczkae *– on sizes and colour close to* ***jaxarticus*** *from which differs by more pale general colour and more light brown cross strip on back. Crown sometimes may be more greyish-whitish, less clean whitish. Claw of back finger as at* ***jaxarticus****. Male wing length 50.8-54.8 (53.0) mm.* Breeding in Southern Altai (found in spurs of Narymskiy ridge in 1993; Scherbakov, 1995b), on road Ust-Kamenogorsk - Rakhmanovskiye springs (Ashbi, Annenkova, 2002a), in Zaysan and Balkhash-Alakol' depressions, where nests observed in Sasykkol lake, in Urdzhar-Emel area (Kovshar *et al*., 1988a), in Dzhungarskiy Alatau (Berezovikov, Levin, 2002b) and in Ile delta (Gavrilov, Zhatkanbaev, 1995). Distribution on migration is not found out.

Numerous, in places rare breeding migrant. Inhabits flood lands forest, groves, deciduous or mixed islands forest near water (river or lake) prefers those with willow, poplar, birch, aspen. On migration visits various tree-bush vegetation far of water. Appears in mid-March – mid-April, migration finishes in mid-May. Breeding in separate pairs. Nest is built on end of dangled thin twig of willow, poplar, alder, birch and pine, at 2.5-3 m above ground usually. Nest constructed mainly by male from grass bast with vegetation fluff (willow, poplar) or sometimes with sheep and camel hair. Entrance tube made mainly by female. Clutch of 6-10 eggs in early May – end July. Female incubate for 12-14 days, male feed her regularly. Only female feed juveniles, which fledge at near three weeks old, in mid-June – early July. At this time male build other nest and try to obtain new female. One brood probably, but repeated nesting after loss of first nest is common. Autumn migration begins in end July in flocks of several dozen birds, and in end August they observed rare. Latest birds recorded in September. In southern areas, in Syrdarya valley, observed in mid-October.

418. **Black-headed Penduline Tit** *Remiz coronatus* (Severtzov, 1873)

coronatus – breeding and occurs on migration in Syrdarya valley up to delta, in riparian forest in Western and Northern Tien Shan (Pskem, Ugam, Talasskiy and Zailiyskiy Alatau), in Dzhungarskiy Alatau near Topolevka village (*per* S.L.Sklyarenko), and also in lowers of Chernyy Irtysh, Kuludzhun, Kurchum, Kaldzhir, Narym rivers and in foothills of Southern Altai, including Markakol' lake (Berezovikov, 1989a), and in Kalbinskiy Altai. Occasionally wintering in Almaty area (Goloschapov, 1993).

Abundant, in places common breeding migrant. Inhabits riparian forest of plain and mountain rivers and streams, groves, gardens and single trees up to 2400 m (Talasskiy Alatau) or 1500-1700 m (Zailiyskiy Alatau). Appears in March (Syrdarya valley) or in mid-April – early May (foothills of Western Tien Shan) singly or in small groups up to 15 birds. Latest migrants recorded in mid – end May. Breeding in separate pairs at 50-100 m from each other. Nest is built on end of dangled thin twig of willow, poplar, birch, maple, Russian Olive tree, walnut, hawthorn or juniper tree, at 1.5-12 m above water or ground. It constructed mostly by male with some help of female from grass bast and vegetation fluff (willow, poplar), from which thin threads are twisted sometimes and then used for nest, some cobweb is added too. Clutches of 5-9, usually 6-8 eggs in end May – early July. Both parents feed juveniles, which fledge in end June – last decade of July. One brood probably, but repeated breeding after loss of first nest is common. Autumn migration begins in mid-August – early September in flocks of 20-50 birds. At Chokpak Pass latest registered in end October.

419. **Thick-billed Penduline Tit** *Remiz macronyx* (Severtzov, 1873)

macronyx – breeding in southern half of Kazakhstan, north up to northern shore of Caspian Sea, Syrdarya delta, lower reaches of Sarysu river, southern coast of Balkhash (Ile and Karatal deltas), on Sasykkol and in Zaysan lakes (Scherbakov, 2002). Here it winters too.

Common, in places accidental resident. Inhabits reed-beds or reed mace thickets on shallow water. On dispersal visits thickets of *Halimodendron* and small reed with singly willows far of water. Appears at breeding paces in April. Breeding in separate pairs. Nest is built between several reed stems at 0.4-1.6 m above water, from long reed stripes and vegetation fluff (willow, reed and rush), which used not only for line inside, but between wall stripes also. Breeding on bushes and trees unknown. Nest constructed by male mainly with some help of female, which bring fluff, during two weeks or more. Clutches of 5-7 eggs found in early May – early July. Both parents feed juveniles, which fledge in July – August. Repeated breeding after loss of first nest (out of strong wind or Crow) is often, but may be two broods. Autumn dispersal in small groups begins in October, from northern areas leaves to south.

Oriolidae

420. **Golden Oriole** *Oriolus oriolus* (Linnaeus, 1758)

oriolus *– the second primary is longer than the fifth. There is no black mark behind the eye. The basal half of the outer pair rectrices is black and in the next 2-4 pairs the black colour occupies half or more than half the rectrices, the terminal tail being yellow.* Breeding in northern Kazakhstan from the lower Ural valley (to Dzhongolsay settlement; Dubinin, Toropanova, 1956), up to the Irtysh valley, where it is common from Pavlodar up to Ust-Kamenogorsk (Gavrilov, 1974a). It nests also in Naurzum Reserve (Bragin, Bragina, 2002), Kokchetav uplands (up to Borovoye; Gavrilov, 1974a) and probably in Aktobe steppes to upper course of Irgiz river (Dubrovsky, 1961), in Kalbinskiy Altai, western Altai foothills and in Bukhtarma valley, but near Ridder and on Markakol' lake breeding not proved (Kuzmina, 1953; Berezovikov, 1989a). It occupies the Chernyy Irtysh valley, Tarbagatay and Dzhungarskiy Alatau. Observed in summer and on migration south of the outlined area.

kundoo *– the second primary is equal to, or shorter than the fifth. There is a small black spot behind the eye. The outer rectrices are usually entirely yellow, sometimes showing some black at the base as next three pairs.* Breeding and recorded on migration in southern Kazakhstan in Syrdarya valley (up to Kazalinsk) and on spurs and foothills of Tien Shan.

Common breeding migrant. Inhabits deciduous flood plains and riparian forest, groves, gardens and old forest-belts on plains and in foothills up to 1500-2000m. During migration saxaul forest, bush thickets, juniper belt (up to 2700 m), isolated trees and (rarely) reed beds are visited too. Appears late April – early May in southern areas, and early – late May in northern ones, singly or in small groups. Last spring migrants recorded early – mid June. Pairs breed quite far from each other. Nest is built in a tree fork (poplar, birch, willow, and very rarely pine) 10-15 m off the ground and constructed by both parents

using tree bast and lined with thin grass. Clutches of 3-5, more often of 4 eggs, are laid mid May – mid June. Mainly female incubates for 13-15 days, male feeding her and attending nest for short periods. Both parents feed juveniles, which fledge after 14-15 days, at end June – mid July. Autumn migration begins in early August, singly and in flocks of one-two dozen birds. Most birds depart end August – early September. Last recorded in late September – early October. At Chokpak Pass 101 *kundoo* and 51 *oriolus* riged in spring and 28 *kundoo* and 548 *oriolus* ringed in autumn.

Laniidae

421**. Brown Shrike** *Lanius cristatus* Linnaeus, 1758

cristatus - occasionally breedsing in Western Altai, in particular at source of Belaya Uba, in the Palevaya valley on Ivanovskiy ridge, at Poperechnoye settlement (Scherbakov, 1986, 1992b) and near Markakol' lake in the southern Altai (Berezovikov, 1989a). It not recorded outside Altai region. Records for Kurgaldzhino Reserve (Koshkin, 2003) not proved.

Very rare breeding migrant. Inhabits mixed and light coniferous forest and taiga edge at an altitude of 1450-2000 m. Appears late May – early June. Breeds separately. Nest is built (only by the female?) in bush from thin twigs and grass stems lined with rootlets, grass and moss. Clutches of 3-5 eggs in mid – end June. Juveniles fledge mid – late July. No migration data exists.

422. **Isabelline Red-tailed Shrike** *Lanius isabellinus* Hemprich et Ehrenberg, 1833

isabellinus - before it was passage migrant only, and recorded in southern and southeastern Kazakhstan, north to the Chu valley, Ile delta and in Ile-Karatal region. Broods found 20 July and 1 August 1999 in Tekes and Shalkudysu rivers, in early August 2004 on Tekes reservoir and nearby. It appears here from China probably, as numbers of Turkestan Red-tailed Shrike down now (Belyalov, Berezovikov, 2005).

Rare by places common breeding migrant. Inhabits saxaul forest with clearings, in riparian forest edge, in thickets, reed beds and forest belts. Arrives early, in mid February – early March singly or in loose groups of 3-5 birds. Last observed mid – end April. Broods recorded end July – early August. Autumn migrants observed from mid September to second half of October.

423. **Turkestan Red-tailed Shrike** *Lanius phoenicuroides* (Schalow, 1875)

phoenicuroides *– the crown is brown, its intensity varying considerably between ochre-brown and greyish brown; some specimens have a distinct grey tone. The back is brown; the underparts whitish, usually with a vinaceous tone. In general the upperparts are browner, less greyish, than in* ***karelini***. Breeding in Tien Shan, Karatau, Dzhungarskiy Alatau and Tarbagatay. On migration, it probably occurs on nearby plains, but details have not been investigated.

karelini *– individual variation is great. The crown can be grey or greyish-ochre, the back grey to light brownish-grey. The underparts are whitish with a vinaceous tint. The upperparts are generally paler, more greyish and less brown, than* ***phoenicuroides***. Breeding and occurs on passage in southern part of Kazakhstan from territory adjacent to Aral Sea and lower Turgay river east to Zaysan depression and Tien Shan foothills, north to Kirey and Tengiz lakes (Andrusenko, Khrokov, 1981). Since 1998 breeding has occurred in Naurzum Reserve (Bragin, 2000). In 1996 and 2002 recorded on Buzachi peninsula and Ustyurt (Gubin, 2002a).

Common breeding migrant. Inhabits riparian, saxaul and deciduous forest, bushy thickets, forest-belts, gardens, groves near open areas and plantations, both on plains and in mountains up to 2500-2700 m in Western Tien Shan, where it lives in creeping juniper bushes interspersed with honeysuckle. During migration reed beds are also visited. Spring arrival is mid April – early May. Breeding in separate pairs at distance of 100-300 m from each other. Nest is built in tree (poplar, apple, apricot, saxaul, Russian olive, juniper) or bush (dog-rose, meadow-sweet, honeysuckle, willow, cherry, juniper, *Berberis sp*.) in 0.3-7m off the ground. It is made from dry grass stems lined with soft grass. Clutches of 4-8, more often of 5-6, eggs are laid late May – late June. Only female incubates for 15-16 days, male feed her. Both parents feed juveniles, which fledge at 13-14 days, late June – mid August. Single brooded; lost nests are commonly replaced. Autumn migration begins in August. Last birds recorded in early September.

Note. Freely hybridise with Red-backed Shrike (*Lanius collurio*), hybrids collected near Ural delta, on middle valley of Emba river, in lower Turgai river, Syrdarya valley, in Balkhash area, Zaysan hollow and especiaaly in Altai (Panov, 1972). This author consider ssp. *karelini*, which inhabits most of Middle-Asian deserts, has hybrid origin.

424. **Red-backed Shrike** *Lanius collurio* Linnaeus, 1758

Breeding in mid (Levin, Gubin, 1985) and lower sections of Ural river (south to Kolovertnoe and Budarino) and in northern Kazakhstan, south up to Naurzum Reserve (Bragin, Bragina, 2002), Zerenda, Akmola, Pavlodar and Kurday settlement in Kalbinskiy Altai. Breeding also in southwest Altai, Chernyy Irtysh valley and in Tarbagatay. On migration observed throughout flat Kazakhstan; one bird observed 31 May 1974 in Tien Shan mountains (Big Almaty Lake; Kovshar, Lopatin, 1983). Hybrids *L.collurio* x *L. phoenicuroides* found in Kurgaldzhino near Kirey lake (Andrusenko, Khrokov, 1981), in southern Altai, Zaysan depression (*per* N.N.Berezovikov) and particularly in the Saur foothills, where hybrids make up 68% of the Red-backed Shrike population (Kryukov, 1995).

Common, in places rare, breeding migrant. Inhabits thickets in meadows, bushes near burnt areas, river and lake shores; light deciduous forest with clearings in flood plains; gardens, groves and forest belts on planes and in mountains up to 1500-1700 m in Altai. During migration occurs in reed beds. Arrives late April – early May, singly or in small groups of 5-7 birds; last migrants recorded end of May. Pairs breed 100-300 m each of other. Nest is built up to 2 m from ground in a bush (honeysuckle, dog-rose, buck thorn) or small tree (elm, willow, maple), but in steppe areas on or close to ground in wormwood (*Artemisia* sp.). Both partners build it for 4-5 days from thin twigs, dry grass stems and rootlets, lining with thin grass, vegetation fluff and grass heads. Clutches of 3-7 eggs (often 5-7 eggs) found in late May – early July. Only female incubates, for 12-14 days, male feeds her. Both parent tend juveniles, which fledge at 11-15 days, in late June – mid July. Repeated breeding after loss of first nest is common. Broods separate 18-25 days after fledging. Autumn migration occurs mainly in August, last birds recorded mid –late September.

425. **Long-tailed Shrike** *Lanius schach* Linnaeus, 1758

erythronotus – breeding in southern Kazakhstan, north up to Dzhulek settlement in Syrdarya (possibly to Kzyl-Orda), Chulak-Espe (Kovshar, Levin, 1993), Taraz, and in Tien Shan foothills east to Almaty, where appeared in 1955 (Borodikhin, 1968). At Suzak obtained 19 July 1935. In recent decades it colonised Ile delta (from 1982) and near Alakol' lake in 1993 (Kovshar, Berezovikov, 2001), breeding birds recorded by S.Schmygalev in 1999 at Karabuta village (Berezovikov, Erokhov, 2004). Wandering birds have been recorded in Kurgaldzhino Reserve, where female shot in 31 May 1987 at Karazhar village (Andrusenko, 2002), on Northern Ustyurt at Beyneu station 12 August 1989, probably brood (*per* B.M.Gubin), and in 26 May 2000 in Naurzum Reserve (Bragin, 2000; Bragin, Bragina, 2002).

Rare breeding migrant. Ihabits agricultural land and open areas with trees, often in or near villages (where also seen on migration), on plains and in foothills up to 1000-1500 m. Arrives late April - mid May in singles or pairs. Breeding in separate pairs at 100-150 m from each other. Nest of thin twigs and dry grass lined with softer grass and hair is built in tree (apricot, poplar, walnut, false acacia, apple, elm) 5-10 m from ground. Clutch of 4-6 eggs found late May – early June. Both parents feed juveniles, which fledge early July – late August. Autumn migration occurs end July – early August, last recorded mid – end September.

426. **Lesser Grey Shrike** *Lanius minor* Gmelin, 1788

Breeding on plains and in small hills practically everywhere in Kazakhstan, except in areas lacking woodland (Mangyshlak, Ustyurt, Betpak-Dala, Tengiz-Kurgaldzhino hollow and territory adjacent to north shore of Balkhash lake). Absent in Kazakhishe upland. It also nests in southern Altai foothills and Zaysan depression (*per* N.N.Berezovikov). During migration recorded throughout these areas, one observed 29 July 1973 in the Tien Shan mountains (Big Almaty Lake; Kovshar, Lopatin, 1983).

Ccommon, in places abundant, breeding migrant. Inhabits light deciduous forest with clearings, forest edge, groves, birch forest 'islands' in steppe, isolated trees in open areas and forest-belts on plains and in mountains up to 2000-2200 m, where also occurs in light juniper forest. During migration it rarely occurs above 3000 m. Appears in late spring: singles and small groups of 3-5 birds occur late April – early May. Pairs form at breeding grounds and settle in territories 15-200 m from each other. Nest is buit on tree (willow, poplar, elm, walnut, maple, apple, apricot, birch, false acacia, pine, juniper) 1.5-16 m off ground, from fresh wormwood, but also with dry grass and lined with vegetation fluff and hair. Both partners build it for 5-9 days. Clutches of 4-8 eggs found in late May – mid June. Female incubates for 14-16 days, male feed her and incubating for short periods. Both parents feed juveniles, which fledge at 16-18 days old in late June – late August. Repeated breeding after loss of first nest is possible. Autumn migration early, and begins shortly after juveniles have become independent. Last birds recorded mid August – mid September.

427. **Great Grey Shrike** *Lanius excubitor* Linnaeus, 1758

excubitor *– in males upperparts are darker, the forehead less whitish, more grey and the white supercilium narrower. The white wing patch (on primaries and secondaries) and white outer tail (outer four pairs of rectrices) are less extensive than in* ***homeyeri****. White tertial edges are poorly defined or not present at all. Upper tail coverts are usually light grey, sometimes off-white. The white underparts lack any darker tone.* It is wintering usually in flat areas of Kazakhstan.

sibiricus *– in males upperparts are darker, with a brownish cast; the forehead is grey, rarely lighter above the bill; the white supercilium is weakly defined; the white primary patch is smaller than in* ***excubitor*** *(this does not usually extend to secondaries). The white outer tail is less extensive than that of* ***excubitor*** *and there is no white on the tertials. Upper tail coverts are light grey. White underparts have a peach tone, with faint grey barring.* Occasionally wintering in northern and eastern areas of Kazakhstan.

homeyeri *– male upperparts are paler, the forehead whiter, the white supercilium wider, the white wing patch spanning primaries and secondaries larger and the white outer tail more extensive, than in* ***excubitor****. White tertial edges are well defined. Upper tail coverts are usually white. White underparts lack any darker tone.* Probably this race is breeding in northern Kazakhstan (Stegman, 1934) and Naurzum Reserve (Bragin, Bragina, 1999, 2002). In autumn and in winter occurs practically everywhere, but in particular regularly in Kurgaldzhino Reserve (Krivizkiy *et al*., 1985) and Tien Shan highlands (Big Almaty Lake; Kovshar, Lopatin, 1983; Middle Talgar; Dzhanyspaev, 2004a).

mollis *– differs from all previous races in showing a brownish or buff shade to the upperparts (better defined than on* ***sibiricus*** *but less so than on* ***funereus****) and a buff tone to the underparts of both sexes. This brownish or buff tone is caused by fine brownish vermiculations visible at close range both on upper and underparts. The white patches on remiges and rectrices is less extensive than on* ***sibiricus****.* Breedung on southern Altai.

funereus *- in males the brownish buff tone to the upperparts is more developed than on* ***mollis****. Underparts are brownish white with a slight pink shade. Underpart barring on both sexes is bolder and more widely spaced than that of* ***mollis****. White patches on primaries and rectrices is less extensive than on all other races.* Breeding in Dzhungarskiy Alatau and Ketmen ridge. In winter recorded in mountains near Almaty (Kovshar, Lopatin, 1983).

Rare resident. Inhabits upper part of light spruce forest (Dzhungarskiy Alatau) at 2500-2700 m and sub-alpine zone with the odd tree or shrub in Altai (at 2000-2500 m). On passage and in winter occurs in open areas with single trees, groves, shrubby thickets and forest edge. No data about its breeding biology exist in Kazakhstan. Fledge juvenile obtained 17 July 1966 in Altai near Markakol' lake. In foothills and on plains appear singly in October. Spring movement begins in early March to early April in southern areas, and in early – mid April in central ones, where recorded up to the end of May.

428. **Southern Grey Shrike** *Lanius meridionalis* Temminck, 1820

pallidirostris – breeding in southern half of Kazakhstan from Mangyshlak and Volga-Ural sands to Alakol' depression and probably north to Karakum sands adjacent to Aral Sea area (Chelzov-Bebutov, 1978b), where Kengir river inflow in Sarysu, and Sarychiganak. In end May 2004 observed at Chelkar-Nura plateau (Bragin, 2005). Breeding also in Zaysan depression (Scherbakov, 1986). During migration and occasionally in winter occurs in south of Kazakhstan.

Common breeding migrant. Inhabits saxaul and Asiatic poplar forest, desert thickets and even in places devoid of tree or shrub vegetation, where nests on triangulation towers and electricity poles. Appears early, in March or early April. Pairs breed 0.5-3 km from neighbouring pairs. Nest is built in trees and bushes (saxaul, Asiatic poplar, willow, *Calligonum sp*., *Atraphaxis sp*.), among sticks of Imperial Eagle nest and on brackets of electricity or telegraph poles 0.5-5 m off the ground. It built by both birds from thin twigs, grass and rootlets lined with plenty of vegetation fluff and hair (mostly sheep wool) for 3-7 days. Clutches of 5-8 eggs early April – late May. Only female incubates for 15-16 days, male feeds her. Both parents feed juveniles, which fledge at 12-13 days, in early May – late June. After juveniles fledge, the pair builds new nest 80-120 m from first one. When the female begins to incubate at this new nest, she stops feeding first brood. After second brood hatches, male stops feeding first fledglings and both male and female concentrate on feeding second brood. This pattern is typical in the Kyzylkum desert, where these observations made, but not yet known from other areas. Repeated breeding after loss of first nest is common. Autumn movement begins at the middle of August.

Corvidae

429. **Eurasian Jay** *Garrulus glandarius* (Linnaeus, 1758)

brandtii – breeding in Semipalatinsk territory adjacent to Irtysh river, Kalbinskiy Altai and in Western and Southern Altai. Post breeding movement recorded in Irtysh valley, in Altai foothills and also in lower Ural valley, where single birds recorded 6 and 8 October 1956, 29 September 1958 (Gavrilov *et al*., 1968). Wandering birds recorded in Naurzum Reserve (in autumn 1974 and 1993; Bragin, Bragina, 2002), in Kurgaldzhino Reserve 18 December 1977 (Andrusenko, Khrokov, 1981) and in foothills of Western Tien Shan on Chokpak Pass 10 September 1968 (Gavrilov, Gistsov, 1985).

Rare resident. Inhabits spruce, fir and mixed forest at altitudes of up to 1500 m; deciduous forest is also visited by wandering birds. Breeding in separate pairs. Nest is built in a tree (spruce, fir, pine) 2-6 m off ground from twigs lined with rootlets and dry grass, by both partners. Clutches of 5-8 eggs are probably laid in May. Both parents incubate for 17-18 days and both feed juveniles, which fledge at roughly 20 days. Broods recorded mid – end July in the Altai. Post-breeding movements begin from end July. In autumn appears in plains end September – October. At Chokpak Pass one bird observed 10 Septembe 1968. In Kurgaldzhino Reserve one bird recorded in reed beds 18 December 1977.

430. **Siberian Jay** *Perisoreus infaustus* (Linnaeus, 1758)

opicus – breeding near Semipalatinsk, where a brood recorded 17 June 1960 (Panchenko, 1968), in Western Altai on Sinyukhinskiye Belki (Kuzmina, 1953) and in Rakhmanovskiye Springs, where broods recorded end August 2002 (Starikov, Prokopov, 2002). In autumn and winter occurs in Southern Altai, in Kara-Kaba valley and on Markakol' lake, where possibly nests (Berezovikov, 1989a). Accidental recorded 18 December 1978 in *Nitraria sp*. bushy thickets in Kurgaldzhino Reserve (Andrusenko, 1984).

Rare resident. Inhabits fir and pine forest up to 2000 m. Not breeding occurs in forests with dense undergrowth. Breeding in separate pairs. Nest is built on tree (spruce, fir, pine) at 2-6 m off ground from thin twigs lined with dry grass, lichen and feathers. Clutches of 3-5 eggs probably appears end March – April. Only female incubates over 16-17 days, both parents feed juveniles, which fledge at around 40 days. A female with follicle of 8 mm obtained 15 April 1957 near Semipalatinsk. Broods observed here on 17 June 1960 and near Ridder 23 June 1947.

431. **Magpie** *Pica pica* (Linnaeus, 1758)

pica *– white primary patches and rump is less extensive than in* ***bactriana****. The primary tips (including the tips of the inner webs) are always black. Inner secondaries usually have a dark blue sheen.* This subspecies is probably breeding in Volga-Ural territory.

bactriana *– white colouring on the primaries and on the rump is more developed than in* ***pica****. A gradual cline of variability indicates a reduction of black and an increase of white on primary webs eastwards across Kazakhstan: in the majority of western birds the primary tips (including the ends of the inner webs) are black, whereas further east (e.g. Tien Shan) many birds have white tips on inner webs of primary feathers. Inner secondaries usually have a dark blue sheen.* Breeding on all other parts of flat Kazakhstan and in mountains, except Volga-Ural territory.

Common, in places numerous, resident. Inhabits various forest types (prefer forest edge near open areas); groves, gardens, forest-belts and shrubby thickets on plains and in mountains up to 2600 m in Tien Shan and 1500 m in Altai, often not far from water source. Rarely lives in towns and big villages with trees. During winter sheep farms, stubble fields and scrap heaps are also visited. Throughout most of the year occurs in small groups, exceptionally up to 200 individuals. In spring new pairs form end February – March. Breeding in separate pairs at 75-700 m from each other. Nest is built 0.8-22 m up in a tree (birch, pine, willow, poplar, hawthorn, apple, elm, asp, Russian olive) or 0.7-4.5 m from ground in bush (honeysuckle, dog-rose, buck thorn, tamarisk). Spherical nest is built by both partners from twigs and soil mixed with grass, rootlets and small twigs, and lined with dry grass and rootlets for 25-30 days in frst nest and 8-17 days in later ones. Clutches of 4-8 eggs in end March – late May. Only female incubates over 17-19 days and male feeds her. Both parents feed juveniles, which fledge at 22-24 days, in mid May – early July. Second breeding attempt is made after nest loss. The long breeding period can be explained by phenological differences between southern and northern areas, on plains and in mountains. Broods disperse in June – mid August. Autumn and winter movements are on local scale.

432. **Henderson's Ground Jay** *Podoces hendersoni* Hume, 1871

This bird was noted as breeding in territory adjacent to north shore of Zaysan lake (Menzbier, 1919; Khakhlov, 1928). In later years only observed 10 October 1962 at western end of Zaysan lake (Samusev, 1976). No recent records exist.

Very rare vagrant. Occurs in stony desert with scattered bushes of saxaul, tamarisk and *Caragana*.

433. **Pander's Ground Jay** *Podoces panderi* Fischer, 1821

panderi *– smaller and paler overall, with less black spotting on the breast than in* ***ilensis****. Wing length of males is 113.5-125.5 mm (120.1), of females 107-116 mm (113.4).* Breeding in Kyzylkum up to Syrdarya valley and possibly edge of Kaplankyr chink at Ustyurt. A pair observed 5 May 1989 in Sorja hollow (Rustamov, 2004). Two birds recorded 24 June 1999 at western edge of Ustyurt, $44^0$27'N $63^0$22'E (*per* Alexander Levin).

ilensis *– larger and darker than* ***panderi****., with more black spotting on the breast. Wing length of males is 125.7-133.0 mm (130.0), of females 115.5-125.0 mm (120.6).* Breeding on territory adjacent to south of Balkhash lake from southwest corner east to Aksu valley; south up to Taukum and Sary-Ishikotrau sands.

Rare resident. Inhabits hilly sand desert with scattered saxaul trees and bushes. Breeding in separate pairs at 0.8-4 km from each other. Spherical nest is built in a saxaul or *Calligonum sp*. bush 0.15-2.5 m off ground, from twigs, dry grass mixed with bush bark and bast, cobwebs, vegetation fluff; it is lined with plenty of hair and feathers. Both partners build it for about two weeks from end February – late March. Clutches of 3-6 eggs are laid mid March – late May. Female incubate for 16-19 days, male feed her. Both parents feed juveniles, which fledge at 18-20 days old. Fledglings recorded in early June – first half of July, but first probably appears much earlier. Repeated breeding after nest loss is common. Most of the year they observed singly or in pairs, sometimes in small groups.

434. **Nutcracker** *Nucifraga caryocatactes* (Linnaeus, 1758)

macrorhynchos *– bill is longer and more slender than that of* ***rothschildii****. Upperpart ground colour is paler, less blackish-brown than that subspecies, and the white tips of the rectrices are wider.* Breeding in southwest Altai. Wanderers recorded on Ural valley in 1956, where 5 October - 1 November 30 birds recorded, and in October 1963, when 5-10 birds observed at one day; no spring movement observed (Gavrilov *et al*., 1968), in Naurzum Reserve (Bragin, Bragina, 2002), on Aksuat lake (Blinova, Blinov, 1997), and even in Kurgaldzhino Reserve 11 and 25 September 1971, two birds (Khrokov *et al*., 1977). Three lean birds obtained at influence of Temir in Emba river 6 September 1963 (Garbuzov, 2005). It noted at once on Ustyurt 8 October 1954 (Varshavskiy, Shilov, 1956). On Syrdarya valley near Chiili one obtained, from 5 birds, 23 December 1909.

rothschildi *– bill is shorter and thicker, upperparts are darker (more blackish-brown) and white tips of rectrices are smaller than in* ***macrorhynchos****.* Breeding in Tien Shan and Dzhungarskiy Alatau, where it remains all year and very rare occurs in foothills; one recorded in Almaty 15 October 1960.

Common, in places rare, resident. Inhabits mountain cedar and spruce forest at 1700-2700 m in Tien Shan and 900-2200 m in Altai. During non-breeding movement deciduous forest, groves, and gardens and exceptionally, clay desert with scattered bushes are also visited. Breeding in separate pairs. Nest is built in a tree (spruce, cedar, larch) 1-8 m off ground from dry twigs, lichen and willow bast lined with dry grass, vegetation fluff and some hair and feathers. Clutches of 3-4, rarely up to 7, eggs probably laid end April – May. Both parents incubate for 20 days and feed juveniles, which fledge mid – end June. Most of the year encountered singly or in loose groups. When cones are in short supply, ***macrorhynchos*** wanders widely to west and south, mid September - October, but such behaviour not recorded for ***rothschildi***.

435. **Yellow-billed Chough** *Pyrrhocorax graculus* (Linnaeus, 1766)

forsythi – breeding everywhere in Tien Shan (Talasskiy, Kirgizskiy, Zailiyskiy Alatau, Ketmen ridge), Dzhungarskiy Alatau and in southern Altai (Kurchumskiy ridge, Sorvenkovskiy Belok). A summer observation is known from Monrak, where one bird pursued of Sparrowhawk 28 August 1979 (Scherbakov, Berezovikov, 2004). In autumn and winter birds regularly make vertical wanderings.

Common resident. Inhabits alpine belt and upper part subalpine belt with rocky meadows at 2500-3500 m in Tien Shan and 2000-2500 m in Altai. In winter upper forest belt is also visited. Breeding in colonies, up to several dozen pairs. Nest is built in crack of rock. Clutches of 5 eggs are probably laid in April – May. Juveniles fledge early June – mid July. For most of the year they live in flocks of 100-1000 birds.

436. **Red-billed Chough** *Pyrrhocorax pyrrhocorax* (Linnaeus, 1758)

brachypus – breeding in Tien Shan (Talasskiy, Kirgizskiy, Zailiyskiy, Terskey, Kungey and Ketmen ridges), Dzhungarskiy Alatau, Tarbagatay, Saur, in southern Altai (Kurchumskiy ridge, Azutau, Sorvenkovskiy Belok) and on western spurs of Narymskiy ridge (Berezovikov, Vorobjov, 1997). During autumn and winter wandering birds observed in lower belts of mountains (once at first half of March 1928 in Ust-Kamenogorsk; Selevin, 1935).

Common resident. Inhabits alpine belt with rocky meadows at 1700-4000 m in Tien Shan and 1000-2500 m in Altai. In winter occurs near mountain settlements on scrap heaps, and rarely recorded in foothills. Breeding in small groups or colonies of roughly 50 pairs. Nest is built in cleft or crevice 2-20 m from cliff base, or in attic of building from thin twigs, dry grass lined with plenty of hair and a few feathers, or with moss, rootlets and grass by both pair members. Clutches of 4-6 eggs are laid early April – early May. Only female incubates over 17-18 days. Both parents feed juveniles, which fledge at 38 days, mid June – end July. For most of the year they occur in flocks of up to 200 birds.

437. **Western Jackdaw** *Corvus monedula* Linnaeus, 1758

monedula – breeding practically everywhere in Kazakhstan, on plains and in mountains. It absent in Betpak-Dala (Kovshar, Levin, 1993), on territory adjacent to north shore of Balkhash lake and most of Kazakhishe uplands. It wintering mostly in southern half of Kazakhstan and only in mild years rarely further north.

Common, in places abundant, resident or short distant migrant. Inhabits deciduous and riparian forest in valleys, pine and birch groves, clay precipices, cliffs and human settlements from plains up to 1500-2500 m in mountains. During migration and in winter stubble fields, meadows, hayfields, cattle farms and rubbish dumps are visited. Spring migration begins mid – end February, most birds arriving in March, last recorded in early April. Migrates in flocks of several hundred or thousands. Breeding in loose colonies of two-five dozen, rarely of single pair. Nest is built in tree hole, artificial box, hole in precipice (excavated by both partners), among old Rook nests, in witches'-broom, or crevice in rock, masonry or monument. It is made from twigs and dry grass and lined with hair, rags, scraps of paper and feathers. Both partners repair old nest or build new one for 2-24 days. Clutches of 2-8, more often of 4-6 eggs, are laid mid April – second half of May. Only female incubates for 13-16 days, male feed her. Both parents feed juveniles, which fledge at 30-33 days old, late May – late June. Autumn movement begins in July, often with Rook flocks. True migration begins at end September. Most birds leave in October, last recorded late October – early November. In winter observed with other corvids near towns and villages often.

438. **Daurian Jackdaw** *Corvus dauuricus* Pallas, 1776

Observed in Zaysan and Alakol' depressions, in Ile valley and in Southern Altai on Markakol' lake (Berezovikov, 1989a). Near Tashkent one obtained 17 October 1926, and occasionally observed here late November – mid December (Mitropol'skiy, 1995).

Rare winter visitor. Occurs singly or in small groups with flocks of Western Jackdaw. Hybrids also recorded. In Ile valley near Dzharkent observed from late October 1899 to early March 1900. On Markakol' lake recorded 10-30 March 1980, 10 March – 1 April 1982 and 16 March 1984. A bird collected near Chilik 12 December 1939, not far from Almaty 13 March 1951, and at Sunkar village (at foothills of Ketmen ridge) 24 May 1956.

Note. Two hybrids with Western Jackdaw (*Corvus monedula*) recorded 20-30 March 1980 at Markakol' lake (Berezovikov, 1989a).

439. **Rook** *Corvus frugilegus* Linnaeus, 1758

frugilegus *– bill is longer and thicker than on* ***pastinator****. The area of bare skin around the bill is more extensive and extends onto the forehead, lores, part of the ear coverts and gular area. The upperparts have a metallic violet sheen.* Breeding in northern half of Kazakhstan, south up to Caspian Sea, Emba valley near Temir mouth, Barbikum and Tusum sands (Varshavskiy, 1965), lower Turgay river and Kurgaldzhino area. It also nests along Irtysh valley, in foothill plains of eastern and southeastern Kazakhstan, on Syrdarya and Chu valleys near Furmanovka settlement (Kovshar, Levin, 1993). Small colony found in Sharapkhana village, south of Karjantau ridge (Chalikova, 2004b). During wandering and migration occurs everywhere both on plains and in mountains. Wintering in southern Kazakhstan, north up to Chapaevo village on Ural valley, Kurgaldzhino and Semipalatinsk. In mild winters, observed on Barsa-Kelmes island (Gistsov, 1978).

pastinator *– bill is shorter and slimmer than on* ***frugilegus****. The mask of facial skin is less extensive, covering the forehead, lores and occasionally part of the ear coverts. Upperparts have a greenish sheen.* Breeding in Southern Altai in larch woods at Markakol' lake (Berezovikov, Scherbakov, 1990; Berezovikov, 1989a) and on poplar and birch near Katon-Karagay settlement (Starikov, Prokopov, 2002). It must occur on migration in southern and south-eastern Kazakhstan, but this not confirmed at present. At Chokpak Pass, where a lot of Rooks ringed every autumn, not recorded jet.

Abundant breeding migrant and common winter visitor. Inhabits edges of riparian, deciduous and mixed forests near open places; groves, forest-belts, trees in towns and villages; more rarely bushy thickets near water in open areas, where prefer cultivated areas with cereal fields on plains and in foothills. Several colonies of ***pastinator*** found in Altai at 1450-1600 m. During migration and in winter occurs in towns, villages, on stubble fields, meadows and hayfields. Very gregarious species, which most of the year lives in flocks numbering between several dozen and thousand, with many thousands gathering at roost sites. In spring, migration begins late February – early March, with most birds returning in first half of April; last arrive (second-years or non-breeding individuals) at Chokpak Pass in mid May. Breeding in colonies of 10-50000 pairs, which settled in March – April, sometimes together with breeding Great Cormorant, Grey Heron and Night Heron. Nest is built in tree (willow, elm, poplar, birch, pine or asp), in bush (Russian olive, willow, honeysuckle, dogrose) 0.5-20 m off ground or, as an exclusion, even on reeds, often close to other nests (e.g. up to 50 nests on one tree). Both partners repair an old nest or build new one from twigs lined with dry grass and some hair. Clutches of 3-6 eggs are laid mid April – early May. Female incubates while male feeds her and the juveniles in first few days after hatching. Later both parents feed juveniles, which fledge end May – mid June. Repeated breeding attempts if first clutch loss are common. Autumn migration begins mid – late September, most birds depart in October.

440. **Carrion Crow** *Corvus corone* Linnaeus, 1758

orientalis – breeding in mountains and foothills of southwest Altai and Kalbinskiy Altai, Saur, Dzhungarskiy Alatau and Tien Shan; in Zaysan and Balkhash-Alakol' depressions and in territory adjacent to the southern shore of Balkhash lake, in Chu river valley, lower Sarysu river and throughout Syrdarya. In this part of Kazakhstan it ranges north up to lower Turgay river and Ulkayak river. In years when Turgay lakes are dry out (1940-1950), it nests in Naurzum Reserve (Formozov, 1959), where hybrids with Hooded Crow recorded up to present (Bragin, Bragina, 2002). Wandering and wintering birds also recorded within this range. Migrating birds observed at Ustyurt, on Mugodzhary ridge, and vagrats recorded in Kokchetav uplands.

Common resident. Inhabits riparian forest, groves, forest-belts and reed beds on plains, and deciduous, mixed and coniferous forest in mountains up to 2600 m in Tien Shan and 2200 m in Altai, mostly near water. Appears at breeding sites in March. Breeding in separate pairs at 100-150 m, or sometimes 8-10 km one from other. Nest is built in tree (spruce, juniper, elm, apple, poplar, Russian olive, willow, birch, larch) 2-25 m off ground, or on tamarisk bush and reed clump, from twigs or reed stems and leaves, lined with plenty of hair. Clutches of 3-6 eggs are laid between late March and late May. Both parents feed juveniles, which fledge late May – early July. Repeated breeding after loss of the first nest with clutch is common. Autumn movement begins late September – early October. At Chokpak Pass singles rarely caught in October. Records of flocks of several hundred birds need confirmation, as they can be confused with Rooks, especially in autumn, when juvenile Rooks have feathered nostrils.

Note. It hybridises with Hooded Crow (*Corvus cornix*) on Irtysh river, in southwestern Altai foothills, Tarbagatay, lower Turgay river and Kurgaldzhino Reserve. Such specimens common on migration and winter in Alakul' hollow, rare in Almaty and very rare it foothills of Western Tien Shan, on Chokpak Station one hybrid ringed only.

441. **Hooded Crow** *Corvus cornix* Linnaeus, 1758

cornix *– grey on the upperparts and underparts is somewhat darker than on* ***scharpii****.* Breeding in Volga-Ural territory, south up to northern coast of Caspian Sea. It also occurs here on migration and in winter.

sharpii *– grey coloration lighter than that of* ***cornix****.* Breeding in northern Kazakhstan from Ural valley east up to western Altai. The southern border lies through Bolshiye Barsuki (Varshavskiy, 1965), lower reaches of Turgay river, Aktau mount in Kazakhishe uplands (*per* Yu.Lobachev) and middle Ayaguz river. On migration and in winter occurs in southern half of Kazakhstan, remaining at Barsa-Kelmes island only in mild winters (Gistsov, 1978).

Common resident/winter visitor. Inhabits deciduous, mixed and coniferous forest, groves, forest-belts, birch and pine forest islands, bushy thickets and reed beds in rivers, lakes and marshes, mostly on plains, low mountains and in Altai foothills up to 550 m. It readily hybridises with Carrion Crow, and in 1958 on Markakol' lake (1450 m) hybrid birds were dominant, but since 1966 only Carrion Crow recorded there. During migration and in winter occur in open habitat, villages and towns, on dumps, stubble fields and also near farms. Spring migration begins in late February – early March, most birds (of northern populations?) leave in March; last recorded at Chokpak Pass late April – mid May. Occurs mostly in flocks of several dozen birds and concentrates in thousands at roost sites. Appears in March at breeding sites. Breeding in separate pairs 100-250 m one from others. Nest is built in tree (poplar, elm, pine, spruce, birch, asp) or bush (willow, tamarisk, *Nitraria sp*.) at 0.5-15 m off ground, or on old reed heaps, geodesic towers, ruins of monuments or buildings in treeless county. Both partners repair old or build new nest from twigs lined with hair, some rags and pieces of paper. Clutches of 2-7, more often of 5-6 eggs, are laid between early April and end May. Probably only female incubates, over 17-19 days. Both parents feed juveniles, which fledge at 32-33 days, late May – early July. Repeated breeding after loss of first clutch is common. Autumn wandering begins late July – early August. Migration (of northern populations?) begins mid – end September, most birds leaving in October - November.

442. **Brown-necked Raven** *Corvus ruficollis* Lesson, 1830 (1831)

ruficollis – breeding in southern half of Kazakhstan from Mangyshlak up to Semirechye, north to Taushik, Chelkar-Teniz lake, confluence of Sarysu and Kengir rivers and territory adjacent to north shore of Balkhash lake. Occurs throughout Betpak-Dala (Kovshar, Levin, 1993). Within this range wandering and wintering also observed. Rare visits foothills, on Chokpak Pass one bird ringed 10 October 2002.

Common resident. Inhabits sand and clay desert with saxaul trees and low xerophytic vegetation and arid mountains with rocks. Wandering and wintering birds also occur near villages, farms and slaughter-houses. Breeding in separate pairs 3-10 km from each other. At breeding places appear in early – mid March. Nest is built on tree (saxaul, Russian olive, tamarisk) 1.2-5 m off ground, on ruins, in rocks and on tall electricity poles from dry twigs lined with grass, hair, rags and felt scraps. Clutches of 5-7 eggs found late March – early May. Probably only female incubates, during 20-22 days. Both parents feed juveniles, which fledge at 38 days, late May – early June. Post breeding movement begins from early October.

443. **Common Raven** *Corvus corax* Linnaeus, 1758

corax *– upper breast is black with a bluish or violet shine. Long gular feathers are shorter than in* ***tibetanus****. Wing length of males is 407-470 mm (438), of females 382-462 mm (433).* Breeding in Naurzum Reserve (Bragin, 1997), in Northern Kazakhstan and in southwest Altai. A brood recorded 13 June 1982 on Koktau mount in Kalbinskiy Altai (Scherbakov, 1989a). Inhabits Zaysan depression, Monrak, Tarbagatay (Starikov, 1994, 1999b) and Saur ridges (Scherbakov, 1999a). At once recorded on Tengiz lake 27 November 1990 (Andrusenko, 2002).

laurencei *– upper breast is brownish or brown (the brown colouring is absent in fresh plumage). Long gular feathers are the same length as in* ***corax****, shorter than in* ***tibetanus****. In average smaller than* ***tibetanus****. Wing length of males and females is 405-471 mm (442).* Breeding on Mangyshlak, in Kyzylkum desert and probably east through Karatau ridge and Chu-Iliyskiye Mts. up to south-western spurs of Dzhungarskiy Alatau, where also occurs in winter.

tibetanus *– upper breast is brownish (the brown colouring is absent at birds in completely fresh plumage). Gular feathering longer, the general size averages more than* ***laurencei****. Wing length of males 438-512 mm (472).* Breeding on high and middle altitudes in Tien Shan.

Rare resident. Inhabits deciduous, mixed and coniferous forest on plains, and rocks in alpine zone in mountains at 1500-2000 m in Altai and 1500-3000 m in Tien Shan. Breeding in separate pairs 5-10 km apart. Nest is built on tree (pine, for example) or cliff ledge from dry twigs lined with plenty of animal hair, some pieces of paper, rags and ropes. Clutches of 4-7 eggs are laid late March – early May. Only female incubates over 19-21 days, male feed her. Both parents feed juveniles, which fledge at nearly one month age, late May – late July. Possibly repeat breeding occurs if nest with clutch loss.

Sturnidae

444. **Common Starling** *Sturnus vulgaris* Linnaeus, 1758

vulgaris *– the crown is violet with a weak greenish sheen; back, rump and upper tail coverts are green, occasionally with a weak violet sheen; throat and upper breast are violet; lower breast green; belly is green with a bright or dark violet sheen; ear coverts show a greenish sheen; underwing coverts are grey with narrow whitish or ochre edges. It is close to* ***poltaratskyi*** *in appearance.* Breeding in Volga-Ural region and in Ural valley, south to Emba valley, northern part of Ustyurt (Varshavskiy, 1965) and east to Mugodzhary ridge. Passage distribution not determined.

poltaratskyi *– the crown has a violent sheen, usually without a hint of green; back, rump and upper tail coverts shine green, occasionally with a weak violet sheen; throat and upper breast are violet; the under breast is green; belly is green with more developed violet shade, than in* ***vulgaris****; ear coverts in the majority of specimens are violet, less green. Underwing coverts have wider ochre edging than in* ***vulgaris****, but otherwise close to that subspecies in appearance.* Breeding in northern half of Kazakhstan, south up to lower Irgiz and Turgay rivers, Kurgaldzhino Reserve and Zaysan depression. It nests also in Pavlodarskoye Trans-Irtysh'e (Kovshar, Khrokov, 1993), Kalbinskiy Altai and in southwest Altai. On migration it observed in most parts of Kazakhstan. Occasional wintering on Barsa-Kelmes island (Gistsov, 1978) noted. On Chardara reservoir 18-21 December 2003 many *Sturnus vulgaris* observed (Erokhov, Belyalov, 2004).

porphyronotus *– the crown is green; back, rump and upper tail coverts are violet with bronze sheen, at the northern and southern limits of distribution of race these parts have a bluish-greenish or greenish shade; the throat and upper breast are green; the lower breast is violet; the belly is bronze with a greenish sheen; ear coverts usually show a violet sheen. Underwing coverts are grey with whitish edges.* Breeding and occurs on migration in southern part of Kazakhstan, north up to Chu valley, Chulak-Espe in Betpakdala desert (Kovshar *et al*., 2004) though subspecies not identified, Balkhash lake and Alakol' depression. This subspecies intergrades with ***poltaratskyi*** between Alakol' and Zaysan lakes (from this area subspecies ***dzungaricus*** described).

Common breeding migrant. Inhabits flood-lands and riparian forest, clay river precipices, groves near lakes, towns, villages and farms close to open country (meadow, pasture, steppe) on plains, in foothills and mountains up to 1000-1500 m. During migration birds are seen in vineyards, cherry gardens, hay fields, stubble fields, shore of rivers and lakes, particularly those which adjoining reed-beds, are also visited. Appears mid February – early March in southern areas, and end March – early April in northern ones in flocks of 10-200 individuals. Most birds migrate mid March – mid April, last arrivals recorded up to end of May. Intensive migration continues for about one week. Breeding in separate pairs or in loose colonies, though not far one from another. Nest is built in tree hole or holes in precipices, often in former nest holes of Sand Martin, Bee-eater and Roller; among old stick nests of raptors and Rook, in rocky cracks, human buildings and starling houses. Both partners clear cavity and build new nest of dry grass lined with thinner grass and during incubation some fresh herbage (tomato, dill, wormwood) is added. Clutches of 3-8, more often of 5-6 eggs are laid in mid April – end June. Only female incubates (perhaps with some assistance by male) for 11-14 days. Both parents feed juveniles, which fledge at around three weeks, end May – end July. Most ***porphyronotus*** pairs are double brooded (proved by ringing studies); other subspecies are single brooded. Repeated breeding after loss of first nest is common. Autumn movement begins in July and August, when birds concentrate in vineyards and hundred of thousands can observed in nearby reed-beds, where they roost. True migration occurs from early September to end November, with most birds departing mid September – end October. Some birds have been recorded in winter, but most cases involved ill or specimens exhibiting defects.

445. **Rose-coloured Starling** *Sturnus roseus* (Linnaeus, 1758)

Breeding episodically throughout most of Kazakhstan, north up to middle Ural valley (Gubin, Levin, 1982), Ilezkaya steppe, Dokuchaevskoye plateau (north of Naurzum) and Yamyshevo settlement on Irtysh river. Summer records (in June) are well known, including observations north of breeding area and at Markakol' lake (Berezovikov, 1989a). On migration it occurs everywhere, at once 15 June 1971 in highlands of Zailiyskiy Alatau ridge, Big Almaty Lake (Kovshar, Lopatin, 1983).

Common, in places numerous, breeding migrant. Inhabits steppe, semi-desert and desert with grassy patches holding plenty of locusts, low mountains up to 1300-1500 m, rarely in higher ground up to 2300-2400 m. During migration vineyards, cherry gardens, pastures, reed beds and lake shores are also visited. Arrives mid April – early May, with most migrating in May in flocks up to two thousand

strong. Breeds in colonies which formed if mass outbreak of locust larvae, which in May seen very well, exist nearby only. Such colonies rarely consist of a few dozen pairs, but more often its numbers of hundreds or thousands pairs (one has 100000 pairs, near Dzhansugurov in Dzhungarskiy Alatau foothills). Nest is built in cavities between stones (prefer for larger rubble), cracks or crevices in rock and clay surfaces, ruined buildings and monuments and in the thatched roofs of sheep folds. The nest is built by both pair members from dry grass lined with thinner grass, often with some feathers and fresh sprigs of wormwood. Pairs are formed at the colony, where female sits in half-built nest, which then completed during lay. Clutches of 4-8, more often 4-6 eggs are laid mid May – early July. Only female incubates during 15 days. Both parents feed juveniles, flying distances of up to 20, even 75 km, in search of locust prey. Juveniles probably fledge at age 20-24 days, in early June – end July. Birds leave colonies simultaneously and late nests with eggs or juveniles are abandoned. Autumn migration is early and occurs end July – August, last depart mid – end September. As no visible migration recorded at Chokpak Pass, it may be that most birds fly out at night.

446. **Common Mynah** *Acridotheres tristis* (Linnaeus, 1766)

tristis – colonisation has intensified towards north and east in recent decades, though its introduction in Almaty in 1962 (Borodikhin, 1968) has complicated observations on expansion (Meklenburzev, 1965). At present time it breeding in southern areas of Kazakhstan, north up to lower Syrdarya river, Dzhezkazgan, Agadyr station (Sema, Gistsov, 1984) and Ayaguz village (Kovshar, 1989). On Zailiyskiy Alatau ridge it breeds up to 3300 m (Kovshar, 1994). Wandering birds recorded in May 1987 and June 1990 in Kurgaldzhino Reserve (Andrusenko, 2002), in June 1994 on Bukhtarma reservoir (Egorov, 1999), and in September 1999 on Charskoye reservoir near Kurday village (Kovshar, Berezovikov, 2001).

Common resident. Inhabits towns, villages, sheep farms and small settlements from plains up to 3300 m. in Zailiyskiy Alatau ridge. Breeding in separate pairs, often not far from one another. Nest is built in cavities in buildings, starling-houses, in holes in clay precipices, tree holes or cracks in rocky surfaces. It made by both partners over 3-4 days (or more) from dry grass and leaves lined with feathers and some hair. Clutches of 3-6 eggs are laid mid May – early June. Both parents incubate during 14-15 days, both feed juveniles, which fledge mid June – end July (exceptionally as late as mid September). One brood per season, but repeated breeding after nest loss is common. Although Common Mynah is resident, intensive migration, especially in spring, occurs at Chokpak Pass, where flocks of 20-100 birds are common mid March – early May (500-1000 birds counted in 1971-1975). In autumn fewer birds return in September – October. This can be explained, in our opinion, by continuing expansion of southern population eastwards.

Note. In spring 1962 near 200 birds successfully introduced in Almaty from Tashkent and now it dispersed widely to north, including mountains.

Passeridae

447. **House Sparrow** *Passer domesticus* (Linnaeus, 1758)

domesticus – breeding on most part of Kazakhstan, south up to Mangyshlak (Tuschibek settlement), Aralsk and Chimkent. In mountains behind human settlements rises up to 1750 m in Altai and 2100 m in Tien Shan (two females observed 27 May on Kosmostanziya, 3300 m; Gavrilov, 2002). Seasonal movements at Chokpak Pass apparently have local character (Gavrilov, Gistsov, 1985).

Common resident. Inhabits human settlements, large and small, and sometimes clay precipices, raptor nests near villages from plains up to 1750-2100 m. Breeding in separate pairs, not far from each other, or in loose colonies. Nest is built in various cavities of human constructions, in nearby clay precipices, in trees between twigs or in hole, in raptor nest, if available, from thin twigs, dry grass and straw (sometimes green wormwood used too) lined with plenty of feathers by male and female for 2-9 days. Clutches of 3-8, usually 5-6 eggs in mid-April – July, both parent incubate for 11-12 days, and feed juveniles, which fledge at 11-14 days old, in early May – end August. Up to three broods are reared per year. Repeated breeding after loss of nest is common. Outside of breeding season, lives in flocks up to several dozen birds, together with Tree Sparrow often. Sometimes hybridises with Indian Sparrow. Some birds migrate on short distance, such individuals caught at Chokpak Pass regularly.

448. **Indian Sparrow** *Passer indicus* Jardine et Selby, 1831

bactrianus – breeding and occurs on migration in southern half of Kazakhstan, north up to lower current of Emba river at Kulsary village (Berezovikov, Gistsov, 1993), Irgiz, Uly Zilanshik valley

(Bragin, 2005), Karaganda and Zaysan depression. In huge numbers migrates through foothills of Western Tien Shan at Chokpak Pass (Gavrilov, Gistsov, 1985).

Common, in places numerous breeding migrant. Inhabits shrub thickets, forest-belts, gardens, groves, clay precipices, villages and stock-yards close to water and cereal fields often, from plains up to 1300-2000 m. At rest time visits stubble fields, reed-beds, kitchen gardens, vine plantations, riparian forest and thickets of tall weeds. Arrives in early April – beginning of May in flocks of 10-100 birds, later migrates together with Spanish Sparrow and Scarlet Rose Finch in mixed flocks. Latest caught at Chokpak Pass in end May. Breeds in colonies with Spanish Sparrow or in pure ones in precipices and on stock yards, numbered up to several hundred pairs. Nest is built in tree, bush, in precipice hole, inhabited raptor nest or in cavities of human buildings from green or dry grass, hay and straw lined with plentiful hair and feathers, but not always. It builds by male at first, later female join in this work. Clutches of 5-10, usually 6 eggs in early May - early June, female incubates for 11-12 days. Both parents feed juveniles, which fledge at 12-13 days old, in early June - end July. One brooded. After moult, when it lives in reed beds and bush thickets, autumn migration begins in August, many birds leave in September, latest recorded in early November.

449. **Spanish Sparrow** *Passer hispaniolensis* (Temminck, 1820)

transcaspicus – breeding and occurs on migration in southern half of Kazakhstan, north up to Syrdarya delta (Kazalinsk), Muyunkum desert adjacent to Sarysu river (Kovshar, Levin, 1993), Urdzhar, Makanchi (Starikov, 2002) and Zaysan hollow (Prokopov *et al*., 2000). In summer recorded at Dzhezkazgan, but character of their stay here is not clear. Vagrants observed in Western Ustyurt, in Karynzharyk 3 and 14 May 1990 (Kovshar, 1995) and on Tengiz lake 27 July 2000 (Koshkin, 2003), which lay outside of its basic migration way through foothills of Western Tien Shan (Gavrilov, Gistsov, 1985). Occasionally wintering in Ile delta and valley (Grachev, 1960) and in Karachengil on southern coast of Kapchagay reservoir (Rodionov, Gavrilov, 1993), in Syrdarya valley not far from Kzyl-Orda and to south of Chimkent. At last decade numbers of migrating birds on Chokpak Pass decreased from 35.2 million at average in 1969-1981 (Gavrilov *et al*., 1995) up to 11.4 million in 2003-2005.

Common, in places abundant breeding migrant. Inhabits shrub thickets, forest-belts, gardens and groves close to water and cereal fields (especially of spring barley) often. After human, it raises up to 1370-1900 m. At rest time visits stubble fields, reed-beds, kitchen gardens, vine plantations, riparian forest and thickets of tall weeds. Appears late, in mid or end April – early May in small groups and flocks, sometimes up to 2-3 thousand birds, together with Indian Sparrow mostly. Intense migration occurs in May, latest observed in first decade of June. Breeding in huge colonies numbering up to 800 thousand pairs, at density of 5500-36000, at average near 13000 nests/hectare. More then one hundred nests may be built in one tree. Colony occupies by birds very rapidly, for several days. Males begin to construct spherical frame of nest and loud display to attract females. Nest is built in tree (Bolle's Poplar, elm, Russian Olive, Ash-leafed Maple, willow, apple, pear, apricot, bastard acacia) or in bush (tamarisk, *Halimodendron halodendron*) at 1-15 m above ground from various green grasses (use fresh mowed lucerne very gladly) lined with green wormwood and leaves for 2-7 days. Female helps male on late stage of construction. Clutches of 2-7, usually 4-5 eggs in mid-May – mid-July, female incubates for 12-14 days with some help of male. Both parents feed juveniles, which fledge at 11-12 days old, in mid-June – mid-August. Some pairs reared two broods, though late breeders can rear only one. Repeated breeding after loss of first clutch is often. After moult, when it lives in reed beds and bush thickets, autumn migration begins in August, intense fly occurs in end September – first half of October, latest observed in early November. Wintering in southern and south-eastern Kazakhstan in small numbers. In some places, hybridises with House, Indian, or even with Tree Sparrow rarely, such specimens caught at Chokpak Pass repeatedly.

450. **Saxaul Sparrow** *Passer ammodendri* Gould, 1872

ammodendri *– upper parts more ochre-greyish, less ash-grey. Black neck strip narrower, longitudinal black back strips narrower and less numerous than* ***nigricans****. Male wing length 73.3-77.0 (75.1) mm.* Breeding and occurs on migration in Kyzylkum desert adjacent to Syrdarya river (Airkum, Alabie etc.), in Baygakum area (near Kzyl-Orda) and probably in Besuly natural boundary. On Aral Sea islands moulting birds recorded in July (Zarudnyy, 1915).

nigricans *– upper parts more ash-grey, less ochre-greyish. Black neck strip wider and distributes also on upper back; longitudinal black back strips wider and more numerous than* ***ammodendri****. Male wing length 77.3-83.0 (80.2) mm.* Breeding in area adjacent to Balkhash lake from south (from lower of

Ile river up to Aksu delta), in Ile valley and adjacent areas upwards up to Borokhudzir. On migration occurs in highlands of Kirgizskiy Alatau, in Chu valley (at Staryy Baytal), in northern Muyunkum desert, at southern shore of Balkhash lake and in Karatal valley. Observed in winter on Issyk-Kul lake (Spangenberg, 1959; Vtorov, 1967).

Common resident or short distant migrant. Inhabits riparian forest, Asiatic Poplar groves, saxaul forest, especially with some Asiatic Poplar trees, and grave clay monuments, human constructions rare, not far of water. At rest time visits bush thickets, dry low mountains with scarce vegetation and stubble fields. In spring singles and small flocks of 10-20 birds observed in end February – end March, no significant migration recorded. Pairs formed in April – beginning of May. Breeds in separate pairs, in 50-130 m from each other. Nest is built in tree hole (natural or made by Woodpecker), in other cavities and in raptor nest from thin twigs, dry grass, reed leaves and bast strips lined with hair, down, feathers and gall (induced by *Phopalomyia sp*.), some pieces of green wormwood are used too. Mainly female construct nest, but male sometimes helps very actively. Clutches of 3-7, usually 5-7 eggs in end April – early June. Both parents feed juveniles, which fledge in end May – early July. Two broods are reared per year. Second nest is built nearby of first one and is ready up to fledge of first brood. In winter its numbers lowered, as some birds migrate in October – November.

451. **Tree Sparrow** *Passer montanus* (Linnaeus, 1758)

montanus *– upper parts and crown darker, black back strips wider than in* ***dilutus***. Breeding in northern half of Kazakhstan, south up to 48-49 parallel. Lives on Markakol' lake (Berezovikov, 1989 a).

dilutus *– upper parts and crown lighter, black back strips narrower than in* ***montanus***. Breeding in southern half of Kazakhstan, north up to 48-49 parallel, clear border don't known. Regularly migrates through Chokpak Pass in small numbers, in spring caught 3 March – 23 May, in autumn 16 September – 26 October (Gavrilov, Gistsov, 1985).

Common, in places abundant resident. Inhabits towns and villages mainly, but on Ural valley prefers forest. Sometimes lives in forest-belt, garden, clay precipices; during not-breeding season visits fields, kitchen-gardens and thickets of tall weeds. Breeding in separate pairs, close one to other often. Nest is built in human construction emptiness, in precipice hole (made by Bee-eater, Sand Martin or Kingfisher are used), in raptor, crow, Swallow and Red-rumped Swallow nests, in tree hole (natural or made by Woodpecker), artificial boxes (starling-house) are used gladly. Nest is built by both parent from dry grass, rootlets and bast fibres lined with plenty feathers, hair and down. Clutches of 2-9, usually 5-6 eggs in early April – first decade of July, both parents incubate for 11-13 days, and feed juveniles, which fledge at 12-17 days old. Fledglings recorded in end May – mid-September. Two or three broods are reared per year, repeated breeding after loss of nest is very often. During not-breeding season they live in flocks up to several dozen birds, in common with House Sparrow often. Regular migration is established at Chokpak Pass only, where flocks are common in autumn, and rare in spring.

452. **Rock Sparrow** *Petronia petronia* (Linnaeus, 1766)

kirhizica *– the most light race. Crown lighter, dark back strips more light-brown, less black-brown, under parts cleaner-white, less brownish-white than* ***intermedia***. Breeding in Western Kazakhstan, north up to Aleksandrov Gay, Al'zhan lake area, Zhuldus station (Ilek valley), Karabutak, Aktobe and middle curret of Irgiz river (a nest with eggs 28 May 1975; Auezov *et al*., 1978), south up to Mangyshlak and Aralsk, east up to Irgiz village (Auezov *et al*., 1978). A flock of 150 birds recorded at August 1986 in Dokuchaevka (Bragin, Bragina, 2002). Wintering in area adjacent to Caspian Sea from north, in lower Emba valley (Neruchev, 1968), on Mangyshlak and Barsa-Kelmes island (Gistsov, 1978).

intermedia *– crown darker, back strips more black-brown, less light-brown, under parts more brownish-white, less clean-white than* ***kirhizica***. Breeding and occurs on migration in Tien Shan, Dzhungarskiy Alatau and its spurs (Karatau, Chu-Iliyskiye Mts., Malay Sary etc.), in western part of Monrak ridge, where common (Scherbakov, 1986). In end May 1993 observed in western spurs of Narymskiy ridge at Slavyanka village (Scherbakov, 1995b), where breeding very possible. Probably live in rocks of Araltobe mountain on east part of Sasykkol lake (Shnitnikov, 1949). In winter recorded near Chimkent.

brevirostris *- light crown strip less expressed, than at other races. Back strips more brown, less black than* ***intermedia****, but darker than* ***kirhizica****. In the whole picture from dark strips on upper parts less contrast and more washed-out; bill shorter and more thickly, than at other races.* Occurrence on migration in eastern and south-eastern Kazakhstan is possible.

Common breeding migrant. Inhabits rocky canyons in mountains at 1250-3000 m, or plain steppe and half-desert with clay precipices, piles of stone and human constructions (***kirhizica***). Appears in end February – early March, intense fly observed in March, and migration finishes in mid-April. Breeding in colonies up to several dozen pairs. Nest is built in crag crack, excavation, in Rock Nuthatch, House Martin, Red-rumped Swallow nests, in clay holes (holes of Bee-eater and Sand Martin used too), between stones, under bridge, in cavity of human constructions and even on juniper tree among thick twig interlacing. Nest is made from dry and green grass lined with feathers, hair and down. Clutches of 3-8, usually 5-6 eggs found in early April – end June. Both parents feed nesting, which fledge in second half of May – early August. Two broods per season. Autumn migration begins in middle – end August, but many birds leave in end September – October. In southern areas recorded in winter in low numbers.

453. **Snowfinch** *Montifringilla nivalis* (Linnaeus, 1766)

alpicola - breeding in southern spurs of Chatkal'skiy ridge, in Pskemskiy and Ugamskiy ridges, in western part of Talasskiy Alatau, in Kirgizskiy Alatau (upper reaches of Merke river) and in east part of Terskey Alatau (in upper reaches of Tekes and Kokzhar rivers). In Middle Talgar gorge (Zailiyskiy Alatau) feeding flocks of 12-20 birds observed 15-27 October 2003, at 3000-3400 m (Dzhanyspaev, 2004c). In winter not leave limits of breeding area, only at once recorded at Kurday Pass.

Rare, in places common resident. Inhabits rocks and cliffs on alpine meadows at 2700-3700 m, in winter lives in the same places, or lowered up to 1500-2000 m. Not avoids humans, and builds their nests in houses, if they available. Breeding in separate pairs fairly close each to other (loose colony), which are formed in April – May. Nest is built in crag crack, excavation or under boulder, in old Marmot hole, in hole of clay precipice or in human constructions from dry grass lined with hair and feathers by female only. Clutches of 3-6, very rarely 7 eggs found in end May – early July (repeated probably), female incubates for 13-14 days. Both parents feed juveniles by insects and they fledge in end June – end July. Only one brood probably.

Fringillidae

454. **Common Chaffinch** *Fringilla coelebs* Linnaeus, 1758

coelebs – breeding in Ural valley south up to Yamanka, in Naurzum Ara-Karagay pine forest, in Kokchetav upland (at Zerendinskoye, Beloye, Schuch'e, Borovoye lakes and near Troitskoye village), in Ishim valley at Petropavlovsk, in tape pine woods of Pavlodarskoye Trans-Irtysh'e (Kovshar, Khrokov, 1993) and in Semipalatinsk area, in Kalbinskiy Altai (Egorov, Borisov, 1979) and Southwest Altai (on Ul'ba, Bukhtarma and on Markakol' lake; Berezovikov, 1989a; Berezovikov *et al*., 1992). Probably it nests also at Karkaralinsk and in Tarbagatay ridge. Everywhere occurs on migration. Wintering in southern half of Kazakhstan, south from Furmanovo in Volga-Ural area, Kurgaldzhino Reserve and Semipalatinsk.

Common breeding migrant, in places numerous passage migrant or rare winter visitor. Inhabits deciduous forest in river valley, birch grove on hummock marsh, dry light pine forest without bushes or mountain forest up to 1450 m. On migration visits forest-belts, riparian forest, groves, kitchen gardens and thickets of tall weeds. In spring in southern areas migrates from end February – early March until end April – early May in flocks of several dozen or several hundred birds, with Brambling often, but in northern areas from mid-April up to first decade of May. Breeding in separate pairs. Nest is built in tree at 1.5-15 m above ground from thin grass, rootlets, moss and lichen lined with hair by female mainly, sometimes with male help. Clutches of 4-6 eggs in April – early June, female incubates for 12-13 days. Both parents feed juveniles, which fledge at 12-14 days old, in end May – late July. Autumn migration begins in mid-August – early September, intense fly observed in Ural valley and along foothills of Tien Shan, where flocks of several hundred birds observed often. Latest recorded in mid-November.

455. **Brambling** *Fringilla montifringilla* Linnaeus, 1758

Breeding in Southwest Altai in vicinities of Ridder and on Markakol' lake. On migration occurs everywhere. Wintering in southern half of Kazakhstan, south from Furmanovo in Volga-Ural area, Kurgaldzhino Reserve and Semipalatinsk.

Rare breeding migrant, but in places numerous passage migrant and common winter visitor. Inhabits deciduous or mixed light forest (birch, willow, fir-tree) on marshes, on migration and in winter visits various forest, shrub thickets, forest-belts, gardens, fields and thickets of tall weeds. Appears in flocks of several dozen up to several hundred birds in end February – early March, and in southern areas

migration finishes in mid-April, but in northern ones in end April – beginning of May. At this time they appear in Altai. Breeding in separate pairs. Nest is built in tree, at 4-5 m above ground, from dry grass, grass bast and moss lined with thin grass, feathers and hair. Clutches of 5-7, usually 6 eggs in mid-May – early June. In autumn migration begins in third decade of September – early October. Main flyways exist in Ural River valley and along foothills of Tien Shan, where some compact flocks contain up to 300-400 birds. An adult male ringed in autumn at Chokpak after three years caught at China, $46^0$25' N $128^0$16'E, at distance 4489 km (Gavrilov, 2005a). Latest migrants recorded in November, later wintering groups can be met only.

456. **Red-fronted Serin** *Serinus pusillus* (Pallas, 1811)

Breeding everywhere in Tien Shan, from Pskemskiy and Ugamskiy ridges to east, in Dzhungarskiy Alatau and in Saur. Summer observation on Southern Altai not confirmed by collection skins and subsequent observations (Berezovikov, 1989a). On dispersal and in winter comes down to foothills and on adjacent plains, reaching up to Malay Sary Mts., Chu-Iliyskiye Mts. and Chu valley near Furmanovka. At once a flock of 12 birds recorded in Kurgaldzhino Reserve in mid-April 1999 (Koshkin, 2002, 2003); this observation very far of breeding area not explained.

Abundant, in places common resident or short distant migrant. Inhabits spruce light forest and juniper forest with bushes and grass vegetation on 1500-1800 m in Talasskiy Alatau and 3000-3200 m in Zailiyskiy Alatau. On dispersal and in winter occurs in low non-forested mountains, in foothills and on nearby plains with bushes, forest-belts, gardens and thickets of tall weeds. On breeding places, appears in mid – end March (latest leave foothills in mid-March). Breeding in separate pairs, not close one to other. Nest is built in spruce or juniper at 1.7-19 m above ground, from dry grass and honeysuckle bast lined with plenty of fluff and hair. It builds mainly by female, but sometimes male brings and lay grass too. Clutches of 3-5 eggs found in May – mid-July. Only female incubates for 11-12 days, male feed her. Both parents feed juveniles, which fledge at 15-16 days old, in mid-June – first decade of August; and adults continue to feed them two weeks more. Repeated breeding after loss of first nest is common, some pairs can rear two broods probably. Then flocks begin to disperse at first in breeding area, and in October – November they lower to foothills and on nearby planes.

457. **Greenfinch** *Carduelis chloris* (Linnaeus, 1758)

chloris *– upper parts yellow-green, darker than* ***turkestanicus****, with olive-brown shade.* Breeding in Uralsk (appears in 1961) and middle current of Ural valley (Gavrilov *et al*., 1968; Gubin, Levin, 1982). Nesting in Northern Kazakhstan possible, as in south of Western Siberia it settles on the east (Gyngazov, Milovidov, 1977; Milovidov, 1983). Breeding pair observed in 1991 on Ust'-Kamenogorsk suburb (Scherbakov, 1995b). On migration occurs in Volga-Ural area, in lower Ural valley, in Naurzum Reserve (Bragin, Bragina, 2002) and Kurgaldzino Reserve (Koshkin, 2002), on Mangyshlak; recorded also in Karaganda, at Semipalatinsk and in Makanchi village area (subspecies not established). In winter occurs in lower Ural valley at Yamanka, and also in foothills of Western Altai and in Kalbinskiy Altai (Starikov, Zich, 1990; Scherbakov, 1995b).

turkestanicus *– upper parts yellow-green, lighter than* ***chloris****.* Breeding and also occurs on migration in Syrdarya valley up to Kzyl-Orda, at low altitude and in foothills of Tien Shan to east up to Almaty, where appeared in 1973 (Kovshar, Pfeffer, 1988). Settling probably proceeds. So, in April 1997, they were common in Chundzha village, and 14 May singing male observed in Dzharkent (Berezovikov, 1999). In 1999-2000 recorded in foothills of Dzhungarskiy Alatau, in Ucharal village (Kovshar, Berezovikov, 2001), and in Zaysan town, where nest with juveniles found 22 May 2001 (Berezovikov, Rubinich, 2001). Wintering to south from Chimkent, but sometimes in Ile valley too.

Common, in places rare short distance migrant. Inhabits deciduous and juniper forest with bushes and glades, gardens and side-road trees in towns and villages, from plains up to 2000 m. On dispersal and in winter visits fields (especially sunflower), forest-belts, gardens, kitchen gardens and thickets of tall weeds. In southern Kazakhstan appears in mid-February – early March, latest migrants registered in mid-May, and at Uralsk area in April. Breeding in separate pairs at 60-150 m from each other. Nest is built on elm, willow, juniper, poplar, apple and apricot at 2.8-12 m above ground by female from thin twigs, grass stems and rootlets lined with hair and feathers. Clutches of 4-6 eggs in early April – end June, female incubates for 12-14 days. Both parents feed juveniles, which fledge at 13-14 days old. Two broods reared per season, repeated nesting after loss of nest is common. Autumn migration begins in end August – early September in flocks of 8-30 birds, and continues up to end October. Some birds observed in November and during winter, in December – February.

458. **Goldfinch** *Carduelis carduelis* (Linnaeus, 1758)

carduelis *– back darker, clean rusty-brown, less greyish-brown, brown breast spots darker and more extensive than* ***major****. Sizes lesser.* Occurs in Western Kazakhstan (Volga-Ural area, Ural valley) on migration and in winter. Which subspecies migrate through Naurzum Reserve (Bragin, Bragina, 2002) is don't known.

major *– back lighter, more greyish-brown, brown breast spots lighter and less extensive than* ***carduelis****. Sizes larger.* Breeding on Ishim valley not far from Petropavlovsk, in Kokchetav upland (Borovoye, Zerenda, Sandyktau and to north of Kokchetav), in Irtysh valley, in Pavlodarskoye Trans-Irtysh'e, in foothills of Altai (Ust-Kamenogorsk) and in Ridder. At once breeding recorded in Almaty, where a brood with adult birds observed 7 July 1953 (Derevjagin, 1955). On migration and in winter occurs to west up to area adjacent to Aral Sea from north and on south of the Republic.

Common breeding migrant, but on most territory common winter visitor. Inhabits deciduous, mixed or coniferous forest with bushes and glades, forests in river valley, gardens, forest plantations in towns and villages. On migration and in winter visits kitchen gardens, fields (sunflower especially), riparian forest, open country without trees, forest-belts and thickets of tall weeds. Appears in March – early April, latest leave winter grounds in mid-April, last birds recorded in Aksu-Dzhabagly Reserve early May. Nest is built in tree from dry thin grass and rootlets mixed with vegetation fluff lined with fluff and hair. Only female constructs it. Clutches of 3-6, usually 4-5 eggs from mid-May, juveniles fledge in mid-June – first decade of July. Two broods probably reared per season. Dispersal begins in August, in Almaty appears from mid-September, in lower reach of Ural river, in Emba valley and at Chokpak Pass first birds registered from October.

Note. Hybrids with Grey Goldfinch (*Carduelis caniceps*) repeatedly caught in foothills of Zailiyskiy Alatau, in Almaty area.

459. **Grey Goldfinch** *Carduelis caniceps* Vigors, 1831

paropanisi *– general colour, especially upper parts darker than* ***subulata****, with an impurity of ochre tone. Sizes lesser.* Breeding and also occurs on migration in Tien Shan and Karatau, in Dzhungarskiy Alatau, Tarbagatay, Saur and on its foothills. Wintering to south from western and southern foothills of Dzhungarskiy Alatau.

subulata *– general colour, especially upper part lighter than* ***paropanisi****, without ochre tones. Sizes larger.* Breeding in Kalbinskiy Altai, in Southwest Altai and in its foothills. On migration and in winter occurs in south-eastern Kazakhstan and in Irtysh valley up to Semipalatinsk.

Common, in places abundant resident or short distant migrant. Inhabits groves, gardens, forest in flood-lands, mountain deciduous and coniferous forest with shrubs and glades, up to 1700 m in Altai and 2600 m in Tien Shan. Lives in towns and villages also. On migration visits fields (especially sunflower one), kitchen gardens, forest-belts, non-forested low mountains and thickets of tall weeds. Nest is built by female in tree (poplar, birch, elm, maple, oak, spruce, apple, pear, cherry, apricot) or in bush (juniper, for example) at 1.5-20 m above ground from dry thin grass and rootlets mixed with vegetation fluff (of poplar mainly) lined with hair and fluff, for 7-12 days. Clutches of 3-5, usually 4 eggs in mid-April – early August, mainly in May - June. Female incubates for 12-13 days. Both parents fed brood, which fledge at 12 days old, in end May – late of August. As a rule, two broods per season, repeated nesting after loss of nest is common. In autumn and winter dispersed in flocks up to several dozen birds, distance of movement not known well, but some birds from Altai reach of Almaty.

460. **Siskin** *Carduelis spinus* (Linnaeus, 1758)

Breeding in Kokchetav upland (about Schuch'e), in Karkaralinsk vicinities and in Kent mountains. In July singles observed in Western Altai on Belaya Uba and Bystrukha valleys (Scherbakov, 1974), but breeding not established. In Dzhungarskiy Alatau pairs observed in July, but no data about breeding exist. On migration occurs everywhere, from Volga-Ural area up to Markakol' lake in Altai. Wintering in southern half of Kazakhstan, south from lower of Ural river (near Yamanka), Kurgaldzhino Reserve, Irtysh valley between Semipalatinsk and Ust-Kamenogorsk and on Markakol' lake.

Very rare breeding migrant in places, but on most territory common passage migrant or winter visitor. Inhabits pine-birch forest on granite of Kazakhskiy small-hills territory, on migration and in winter prefers birch groves and plantations, shrub thickets, forest-belts, deciduous forest with shrubs on river valley and thickets of tall weeds. No nest is known for Kazakhstan. Broods with flying juveniles observed from first decade to end July. Autumn migration begins in mid – end September or in some years only early October. Small flocks of 10-15 birds registered more often, but sometimes up to 50-100 birds. Winter grounds leaves in March – April, some birds linger up to early – mid-May.

461. **Linnet** *Carduelis cannabina* (Linnaeus, 1758)

cannabina *– crown (excepting pink spot) more dark-grey, back more dark rusty-brown than* ***fringillirostris****.* Probably breeds in middle current of Ural and Ilek valleys. On migration occurs in Volga-Ural area, Ural valley and in upper reaches of Emba river.

fringillirostris *– crown (excepting pink spot) more light grey, back more light than* ***cannabina****.* Breeding in middle current of Syrdarya valley, in Tien Shan and Karatau, in Dzhungarskiy Alatau, Tarbagatay and about Ayaguz, in Saur, Kalbinskiy Altai and Southwest Altai. In summer recorded in Pavlodarskoye Trans-Irtysh'e at Scherbakty village (Kovshar, Khrokov, 1993) and in Chu-Iliyskiye Mts. On migration occurs within the limits of breeding area, vagrants registered in Kurgaldzhino Reserve 23 October 1970 (Khrokov *et al*., 1977). Wintering to south of Almaty - Taraz, at once observed on Syrdarya valley at Dzhusaly station 12 – 22 January 1928.

Abundant, in places common breeding migrant. Inhabits forest edges with bushes and open places with meadow-steppe vegetation on plains and in mountings, from 500-700 up to 2800-3000 m. On migration occurs on fields (sunflower especially), in forest-belts, gardens, xerophytic mountains without forest vegetation and in thickets of tall weeds. Appears in end February – early March (latest in mid-April) on south of Kazakhstan, and in end March – early April in northern areas. Migrates mainly in flocks of 25-40 birds, but sometimes in small groups and in pairs. Breeding in separate pairs not close one to other. Nest is built by female (male escort her) in bush (deciduous or Juniper), height grass (*Lasiagrostis*, wormwood), rarely in pine or on ground under grass from thin twigs, grass and rootlets lined with hair and vegetation fluff. Clutches of 4-5 eggs found in first decade of April – mid-July. Female incubates 13-16 days, both parents fed nestling, which fledge at 12-14 days old, in first decade of June – end August. Long breeding cycle is explained not only by phenology on different altitude, but by replaced breeding after loss of first clutch, and rearing two broods per year in some places. Broods disperse some time, then joined in flocks, and in end August – September begin to migrate in flocks of 20-50 birds. In Ural valley birds migrate in October mainly. In places it wintering in southern Kazakhstan in small numbers.

462. **Twite** *Carduelis flavirostris* (Linnaeus, 1758)

kirghizorum *– upper parts lighter, light borders on back feathers more light-ochre (sometimes greyish), and shaft streaks narrower than* ***korejevi****. White edges on secondaries wide.* Breeding in semi-desert zone of Kazakhstan from Volga-Ural area up to Semipalatinsk area adjacent to Irtysh river and Zaysan depression; to south up to Volzhsko-Ural'skiye sands (Beketay), upper reaches of Emba and lower Turgay rivers (Auezov *et al*., 1978), Basaga station, Mointy and southern part of Kazakhishe upland (Bektauata, Zhorga, Ayaguz station); to north up to Kaztalovka on Malyy Uzen, Ilek valley, Naurzum Reserve (Gordienko, 1983), upper reaches of Kara-Turgay river, Tengiz lake and Semeytau near Semipalatinsk. On migration and in winter occurs in southern half of Kazakhstan, from northern coast of Caspian Sea, Mangyshlak (Mitropol'skiy, 1965) and Ayaguz.

korejevi *– upper parts darker, light borders on back feathers more brownish-ochre, less light-ochre than* ***kirghizorum****. White edges on secondaries narrow.* Breeding in Kalbinskiy Altai, Tarbagatay, in Zaysan depression and Chiliktinskaya valley (Dolgushin, 2002). In winter occurs in south-eastern Kazakhstan at Dzharkent, whence this race was described, though details of distribution are not investigated.

altaica *– upper parts darker, colour brighter, rusty-brown – brown; shaft streaks wide, but not sharp. White edges on secondaries absent.* Probably this race breeds in highlands in Southern Altai above 2000 m (Berezovikov, 1989a).

Common breeding migrant, in places common winter visitor. Inhabits hilly sands with grass and shrubs, stony steppe with *Caragana*, *Spiraea* and *Rosa* bushes, gently crushed stony slopes with bushes and sparse vegetation, or alpine belt with stones and Juniper bushes, not far of water often. Spring migration begins in end February – first half of March in flocks of several dozen birds, latest observed in early – mid-April. On breeding ground appears in end March – April. Breeding in separate pairs, sometimes in 10-15 m from each other. Nest is built on bush, in height grass (*Lasiagrostis*, wormwood) up to 0.7 m above ground, or on ground pit under grass or bush twig from dry grass stems and rootless lined with rags, hair and feathers. Clutches of 4-6, usually 5 eggs found in end April – early July, independent juveniles in broods observed from early July. Autumn migration begins from mid – end September, when flocks of 100-200 birds are common at this time. Latest birds leave breeding area in mid-November.

463. **Common Redpoll** *Carduelis flammea* (Linnaeus, 1758)

flammea – breeding in Western Altai at Beloubinskiye lake (Scherbakov, 1974, 1978a), at Markakol' lake in Southern Altai (Berezovikov, 1989a) and 14 August 1991 recorded in Saur (Scherbakov, 1999a). On migration and in winter occurs everywhere, including highlands of Zailiyskiy Alatau (Big Almaty Lake; Kovshar, Lopatin, 1983).

Rare breeding migrant in Altai, and common winter visitor at other Kazakhstan. Inhabits alpine meadows with dwarf birch and larch or cedar orohylile forest at 1850-2200 m. In winter prefers birch groves and plantations, riparian and deciduous forests, gardens, shrubs and thickets of tall weeds. No nest was found, two pairs were worried on men appearance in mid-June – end July, independent juveniles in broods observed in mid-July. In autumn arrives end September – end October, in small groups or flocks of 30-50, up to 100 birds. Spring migration begins in March, in some flocks up to 1000 birds were counted. Latest migrants observed in early – mid-April.

464. **Arctic Redpoll** *Carduelis hornemanni* (Holboell, 1843)

exilipes – occasionally occurs in winter in middle current of Ural river (February – March 1922, 22 October 1925), in foothills of Altai and as far south, as Semirechye (Almaty area 4 December 1870).

Accidental winter visitor, wich observed with flocks of Redpoll very rare.

465. **Hodgson's Rosy Finch** *Leucosticte nemoricola* (Hodgson, 1836)

altaica – breeding in highlands of Tien Shan to east from Pskem and Ugam, in Dzhungarskiy Alatau, Saur and in Southwest Altai (near Rakhmanovskiye springs too). Probably lives in Tarbagatay (Bibikov, Korelov, 1961). On dispersal and in winter occasionally occurs in foothills and on adjacent plains (21 December 1920 near Semipalatinsk, in Taldy-Kurgan area, 28 March 1949 in Chulak Mts. Kzylaus gorge, in Almaty and 8 April 1960 near Dzhabagly settle).

Abundant, in places rare resident. Inhabits sup-alpine belt, from upper forest up to alpine meadows with stone scattering and cliffs, at 2350-3500 m in Tien Shan. Displaying birds observed in May. Breeding in separate pairs, not closer then 15-100 m from each other. Pairs are formed in March – May. Nest is built in ground hole, under stone mainly (rarely between stones or in cliff crack) by female for 7-10 days, from dry grass and rootlets lined with hair and feathers. Clutches of 3-6 eggs found in end May – mid-July, mainly in June. One brood per season, repeated breeding after loss of nest is common. Only female incubates for 13-15 days, male feed her. Both parents feed juveniles, which fledge at 15-19 days old, in early July – mid-August. When breeding, search food by groups or in flocks, sometimes up to several dozens birds. In autumn and in winter live in flocks at lower altitude, not on plains.

466. **Brandt's Rosy Finch** *Leucosticte brandti* Bonaparte, 1850

margaritacea *– forehead grey, crown black. Back darker, with more developed brown shade than* ***brandti****. Pink colour on rump absent or poorly developed. Axillaries and terminal feather parts on sides and belly with developed pink colour.* Breeding in highlands of Saur and probably Tarbagatay. In winter occurs in Southern Altai at Katon-Karagay.

brandti *– forehead and crown black, but black colour on crown less distributed to nape; back lighter, with less developed brown shade than* ***margaritacea****. On rump and axillaries, on body sides and belly pink colour absent.* Breeding in highlands of Tien Shan and Dzhungarskiy Alatau. In winter came down to low altitude very rare, but observed 9 April 1950 in Chu-Iliyskiye Mts., 5 January 1963 and 11 March 1960 in Dzhabagly (foothills of Talasskiy Alatau). Near Kosmostanziya flocks and small groups of birds observed 31 May and 4 June 2003 (Kovalenko, Kovshar, 2004; Dzhanyspaev, 2004a) and one collected 16 February 1962.

Rare, in places fairly common resident. Inhabits upper part of alpine belt, where alpine meadow adjacent to moraine, stone scattering and cliffs, and glacier circus (above of 3000 m often). For forage they are going down up to 2600 m. In Zailiyskiy Alatau three nests found in cliff circus of Ozernyi peak on slope of southern exposition at 3800-4050 m in 80-2000 m apart. Displaying and copulation observed in end June. Nest is built in crack of rock or under stone, from moss, dry grass stems and leaves lined with hair and feathers. Clutches of 3-4 eggs found in end June – early July. Both parents feed juveniles, fly for forage at distance up to several kilometres (may be more than 5 km!). Juveniles fledge in early August. One brooded. In autumn and winter lives in flocks, sometimes up to one thousand birds.

467. **Rosy Finch** *Leucosticte arctoa* (Pallas, 1811)

arctoa *– pink colour on crown absent or poorly developed. Hind neck darker, less whitish; back black-brown, more dark with less developed pink shade than* ***brunneonucha****. Upper tail coverts silvery-whitish, and sometimes with black-brown shaft streaks and ends. On outer webs of primaries and on rectrices silvery-whitish colour more developed; pink colour on under parts less developed than at other races.* Breeding in highlands of Southern Altai at Markakol' lake (Berezovikov, 1989a) and on Lineyskiy ridge in Western Altai (Scherbakov, 1992b). In winter occurs in foothills, at Semipalatinsk, Ust-Kamenogorsk and in Kalbinskiy Altai. On dispersion recorded near Ucharal settle (25 February 1965) and twice observed in south-west spurs of Dzhungarskiy Alatau, in upper reaches of Bizhe river 9 February 1941 and in Chulak mountains (21 December 1948, Kzylaus gorge).

brunneonucha *– pink colour on crown absent or poorly developed. Hind neck lighter, more whitish. Back brown, lighter than* ***arctoa****, with more developed pink shade. Primaries and upper greater coverts have pink borders on outer webs. Upper tail coverts with whitish-pink ends. Pink colour on under parts more developed than* ***arctoa****.* At once (18 December 1926) one bird obtained near Semipalatinsk in winter (Selevin, 1927).

Rare resident. Inhabits upper part of alpine belt, where alpine meadow adjacent with moraine, stone scattering and cliffs. Spring migration in foothills and on Markakol' lake observed in mid-April. Nest is built on ground under stone from dry grass and lined with hair. In Markakol' lake area female with brood patch and seeds in under-tongue sack collected 17 July 1966. Juveniles fledge late July – August. One brood. In winter comes down in foothills and on nearby plains, where observed from December till March in big flocks.

468. **Two-barred Crossbill** *Loxia leucoptera* Gmelin, 1789

bifasciata – in Semipalatinsk vicinity one Two-barred Crossbill caught in late November 1971. Two birds observed 30 August 2002 on Bukhtarma lake (Belyalov, 2002b). Probably, that it is very rare breeding bird in Altai highlands.

469. **Common Crossbill** *Loxia curvirostra* Linnaeus, 1758

curvirostra *– bill more massive than* ***altaiensis*** *and* ***tianschanica****.* Probably this race occurs on dispersal in Kazakhstan practically everywhere, except for Mangyshlak, though collection skins frequently absent.

altaiensis *– bill less massive than* ***curvirostra****, but more massive than* ***tianschanica****.* Breeding and wintering in Southern and Western Altai, probably in Saur. In summer probably this race occurs in Kalbinskiy Altai, where observed in Karkaralinsk mid-June 2002 (Berezovikov, Levin, 2002a).

tianschanica *– bill more thin and less massive than at previous races.* Breeding in coniferous forest of Tien Shan, possibly also in Dzhungarskiy Alatau. On dispersal and in winter came down to foothills (Almaty), but their scales are not investigated.

Common resident in mountains and rare vagrant on plains where it can be met in autumn, winter and spring. Inhabits spruce and fir forest, but on dispersal visits deciduous forest and tree vegetation in towns. Breeding cycle adapted to seed ripen of main coniferous tree. In Altai pairs formed in mid-February – mid-March, the nest with three well incubate eggs found 24 April 1958, three fledglings with female observed in 24 April 1981. Dispersal begins in early August, in winter live in flocks of 5-15 birds. In Tien Shan (Zailiyskiy Alatau) pairs formed in end June – July. Breeding in separate pairs, not close than 50-70 m from each other, when population numerous. Nest is built by female (male escort her) in branch of spruce at 8-14 m above ground from thin spruce twigs and thick lay of green moss (rare of lichen) with some dry grass and bast strips. Clutches of 3-5 eggs found in end July – mid-September, but in last case it was repeated clutch probably. Female incubates from first egg for 15-16 days. Both parents feed juveniles, which fledge at 16-19 days old. After juveniles begin independent, birds disperse in flocks. Several observations in Terskey Alatau show that Crossbill breeds here in winter (nest with eggs found 27 January 1964 at 2300 m). On plains it can be met all the year round.

Note. Situation with Loxia is very unclear. In Kazakhishe upland in Kysylray in early August 1938 small flocks recorded (*per* A.V. Afanasiev). In Karkaralinsk small flock observed in August 1928 and in end June – early July 1927 several flocks of 6-8 birds (Selevin, 1935); in female collected here 5 July ovary was in rest (Dolgushin, 1947). In Airtau pine forest (west of Kokchetau) one male obtained by I.A.Dolgushin 23 July 1949. In pine forest Amankaragay (south of Kustanay) four males recorded 11 August (Sushkin, 1908). Near Urda in Western Kazakhstan I.B. Volchanezkiy (1927) wrote, that they breed in 1930 and published a female record in summer 1937. But this bird breeds or in winter (ssp. *curvirostra* and *altaiensis*) or in autumn (ssp. *tianschanica*) therefore it is impossible to imterpret above records. It needs to have new information!

470. **Crimson-winged Finch** *Rhodopechys sanguinea* (Gould, 1838)

sanguinea – breeding and occurs on migration in Western Tien Shan (Chatkal'skiy, Pskemskiy, Ugamskiy ridges and western part of Talasskiy Alatau), in Chu-Iliyskiye Mts., probably in Zailiyskiy Alatau (Zhetyzhol Mts., Boguty Mts.; Gubin, 2002d; Karpov, Belyalov, 2002b), in Dzhungarskiy Alatau (Altynemel', Chulak, Matay and Malaysary ridge; Gubin, 2002d) and in Monrak ridge. In May observed in Borolday and near Kurday Pass, but breeding not confirmed (Shuyskiy, 2002; Sklyarenko, 2002d; Gubin, 2002d). Probably occupies Kirgizskiy Alatau, where recorded in July. On migration recorded at Chokpak and Kurday Passes, in Tien Shan foothills, on Big Almaty Lake. In winter occurs in Chemolgan ravine, Zhetyzhol, Boguty Mts., Malaysary, Karatau (Belyalov, 2002h; Karpov, 2002; Kolbintsev, 2002), and near Chimkent.

Rare or in places accidental breeding migrant. Inhabits dry well heat stony slopes with rocks from foothills up to alpine meadow, in Talasskiy Alatau up to 2800-3000 m. In spring arrives in end February – early March, but in mid-April when cold spring only. Nest is built on ground under stone or grass from dry grass and rootlets lined with thin grass and bast of grass stems, by female (male escort her) only. Clutches of 4-5 eggs found in May – early July. Only female incubates for 12-13 days, male feed her. Food for juveniles is gathered in under-tongue sack, as in *Leucosticte*. Both parents feed juveniles, which fledge at 16-17 days old. Broods dependent on parents recorded up to mid-August. One brood reared per season, repeated nesting after loss of nest is possible. First time after breeding they disperse on mountain slopes in flocks of 10-30, sometimes of 50-100 birds, and at Chokpak Pass observed from mid-August. Autumn migration mainly in September – October, latest flock observed near Dzhabagly village 27 November 1964 and 1 December 1973.

471. **Desert Finch** *Rhodospiza obsoleta* (Lichtenstein, 1832)

Breeding and also occurs on migration in southern half of Kazakhstan, north probably up to Beyneu (Levin, Karyakin, 2005), Kazalinsk, Dzhezkazgan, up to Dzambul-Gora and northern Betpak-Dala (Zhideli natural boundary; Kovshar, 1988; Kovshar, Levin, 1993), Ile delta and Dzharkent. In 1968 appears in Ucharal and in 1978 at Makanchi village (Starikov, 2002). In summer 1962 observed on Mangyshlak at spring Karabota (Varshavskiy, 1965) where it is common by places now (Gubin, 2002a) and in 1965 on western chink of Ustyurt in Manata natural boundary (Gavrilov, 1974b). Vagrants recorded on Tengiz lake (two males and one female observed 1 - 15 April 1983; Andrusenko, 1986). In winter occurs only in Syrdarya valley.

Common breeding migrant. Inhabits saxaul forest with some open parts (saline-soil, glade), oasis plantation, forest-belts, gardens, groves, villages and towns, prefer places with nearby water, both on plains and in mountain up to 800-1200 m. Arrives in early – mid-March in small groups and in flocks of up to 40 birds, flight finishes in mid-April – early May. Breeding in separate pairs at 0.2-1.5 km from each other. Nest is built by female, with some help of male sometimes, in trees or in bushes (saxaul, elm, poplar, *Morus alba*, maple, bastard acacia, apricot) at 1-4 m above ground, from thin twigs and grass stems lined with hair and vegetation down (in settlements cotton wool is used very gladly). Clutches of 3-7, usually 5-6 eggs found in mid-April – mid-July. Only female incubates for 13-15 days, male feeds her, and both parents feed juveniles, which fledge at 12-13 days old. Latest fledglings observed 29 August 1969. Two broods reared per year, repeated nesting after loss of nest is common. After juveniles begin independent life, birds join in flocks. Autumn migration at Chokpak Pass begins in end August – early September, many fly in mid-October, and latest birds observed in first decade of November.

472. **Mongolian Finch** *Bucanetes mongolicus* (Swinhoe, 1870)

Breeding in Central Kyzylkum desert (Arystanbeltau) at border with Kazakhstan, in lowers of Ugam and Pskem valleys probably and in Karatau, where observed in summer. Lives in Chu-Iliyskiye Mts., on Khantau Mt. and Dzhambul Mt., in eastern spurs of Zailiyskiy Alatau (Turaygyr, Bolshiye and Malyye Boguty), Charyn canyon, in rocks of Kapchagay, in south-western spurs of Dzhungarskiy Alatau (Katutau, Altynemel, Matay, Chulak). Further to north nests in Betpak-Dala desert (Kovshar *et al*., 2004), Monrak ridge and on northern slopes of Saur ridge, in southern foothills of Kurchumskiy ridge in Southern Altai (Scherbakov, 1978b), in low mountains of Zaysan depression (at spurs of Azutau ridge; Berezovikov, Rubinich, 2001). Above this, area adjacent to Balkhash lake from north (Mointy, Targyl, Bektauata), and in places Kazakhishe upland (Zhorga and 150 km east of Karkaralinsk) are inhabited by this bird also. In outlined area, occurs on migration, including highlands, and sometimes winters here. At once observed on Markakol' lake 9 October 1983 (Berezovikov, 1989a).

Common, in places an abundant breeding migrant. Inhabits stony trains of mountains in desert with rare vegetation, stony canyons and clay precipices of low xerophytic mountains at 500-2000 m, not

far of water in common. On migration occurs in saxaul forest, in river valley with riparian vegetation and in alpine highland belt also. Appears in mid-February – early March, but in some places in early – mid-April only. At Chokpak Pass latest birds caught 14 May 1969 and 1975. Breeding in loose colonies. Nest built by female (male escort her) on ground under bush or stone shelter, in excavation or rock cracks, in clay precipice or grave construction, from dry twigs and grass stems lined with thin grass and hair. Clutches of 4-6, very rare of 8 eggs found in mid-May – end June, independent juveniles near the colony observed in mid – end July. One brood reared per season, repeated nesting after loss of nest is possible. Autumn migration begins late, from end September till end November. In small numbers it wintering in Kazakhstan

473. **Trumpeter Finch** *Bucanetes githagineus* (Lichtenstein, 1823)

crassirostris – breeding and also occurs on migration in mountains of Central Kyzylkum desert (Arystanbel'tau, Bel'tau, Aktau and Takhtatau). On Mangyshlak (Western Karatau ridge) small flock and copulation observed in 1 May 1993 (*per* V.A.Gorbatov). One bright male with two Mongolian Finches flew for water on artesian well near Kolshengel 16 May 2001 (*per* V.A.Kovshar), what indicates on possible breeding in more northern areas.

Rare breeding migrant or in places rare vagrant. Inhabits foothills and cliff slopes of low mountains with scarce vegetation in Kyzylkum desert at 400-450 m not far of water. Nest is built in rock excavations from grass stems lined with thin grass leaves. Clutches of 5 eggs found in April – May. Both parents incubate. Hatchlings and broods with independent juveniles observed in mid-June. Two broods reared per year probably. Its biology is not well known.

474. **Common Rosefinch** *Carpodacus erythrinus* (Pallas, 1770)

erythrinus – *at male red colour on back less developed; red colour on throat and breast, and pink colour on belly and sides lighter, than at other races.* Breeding in northern Kazakhstan from middle current of Ural valley (Levin, Gubin, 1985) up to Kalbinskiy Altai and Altai, south up to Kurgaldzhino Reserve and Kazakhishe upland, but breeding for Naurzum forest don't known (Bragin, Bragina, 2002). On migration it is met everywhere.

grebnitzkii – *at male red colour on back, throat and breast, and pink colour on belly and sides darker than* ***erythrinus****, but lighter than* ***ferghanensis****. From other races steadily differs by thicker and massive bill.* In Kazakhstan can be observed on seasonal migration.

ferghanensis – *at male colour on back, throat and breast, and pink colour on belly and sides more intensive and more bright, than at other races.* Breeding and also occurs on migration in Tien Shan, Dzhungarskiy Alatau, Tarbagatay and Saur, excluding Karatau and other low spurs.

Common breeding migrant. Inhabits bush thickets, forest edges, light forest, pine forest with birch and bushes on plains. In mountains lives from deciduous up to juniper belt (at 2000-2800 m in Western Tien Shan, 1300-2750 m in Zailiyskiy Alatau and from foothills up to 2200 m in Altai), prefers places with nearby water. On migration occurs in reed-beds, bushes, forest-belts, gardens and in thickets of tall weeds near agriculture fields. Arrives in end April – early May on southern areas and in early – mid-May in northern areas. In foothills of Western Tien Shan intense flight in flocks of 10-20, rare 100-200 birds going in May, when elm seeds are available (but in autumn migrates through mountain mostly). Latest migrants recorded in early – mid-June, sometimes late June. On breeding places appears in end May – early June. Breeding in separate pairs at 15-60 m from each other. Only female builds (male escorts her) nest in bush (honeysuckle, dogrose, barberry, lilac and elder) or in tree (spruce, fir, birch, elm, apple and maple) at 0.5-4 m above ground, from thin twigs and dry grass lined with rootlets and hair for 3-4 days. Clutches of 3-5 eggs found in second decade of June – end July. Only female incubates for 13-14 days. Both parents feed juveniles, which fledge at 13-17 days old. One brood. Autumn migration begins in late July – early August and in eastern Kazakhstan they fly mainly through mountains. At Chokpak Pass mass flight in morning recorded only once, at 30-31 August 1992, when record number of 829 Rose Finch ringed. From northern areas, disappears in end September, but in southern ones latest recorded in 20 October 1968 and 1969, and 10 November 1964.

475. **Pallas' Rosefinch** *Carpodacus roseus* (Pallas, 1776)

Breeding in Altai at Beloubinskiye lakes and on Ivanovskiy ridge (Scherbakov, 1978a), two juvenile birds observed on northern slope of Yuzhno Altaiskiy ridge 3 August 1987 (Scherbakov, 1995b) and on Kurchumskiy ridge at Markakol' lake (Zinchenko *et al*., 1992). Near Berel' several birds (a brood?) recorded 31 July 2004 (Starikov, 2005b). On dispersal and in winter occurs on Markakol'

lake, in Altai foothills from Semipalatinsk up to Ust-Kamenogorsk and in Zaysan depression. Vagrant bird observed 21 September 1963 in mountains Kyzyltau, Kazakhishe upland (Chelzov-Bebutov, 1978).

Rare resident, in places accident vagrant. Inhabits cedar-larch light forest without height grass at 1900-2000 m. In winter prefers bush thickets, asp-birch coppice forest with bushes, and vicinity of villages and towns. Brood of five juveniles depended on parents, recorded 17 July 1971 and two juveniles begin to moult 3 August 1987. In winter observed from December till February – mid-March.

476. **Tien-Shan Red-mantled Rosefinch** *Carpodacus rhodochlamys* (Brandt, 1843)

Breeding in Tien Shan, east from Talasskiy Alatau ridge, in Dzhungarskiy Alatau, and also in Saur ridge (Scherbakov, 1986; Dolgushin, 2002). Probably lives in Tarbagatay, though confirming data is not present. On dispersal and in winter come down to foothills and on adjacent plains, reaching up Tashkent, Chimkent, Chu-Iliyskiye Mts., Ile delta, Dzhungarskiy Gates and Zaysan depression.

Common, in places rare resident. Inhabits upper belt of spruce forest and juniper thickets with glades and some bushes at 1900-2800 m in Talasskiy, 2200-2900 m in Zailiyskiy Alatau, and 1500-1700 m in Saur. On dispersal and in winter visits deciduous and riparian forest with bushes. Pairs are formed in end March – April. Breeding in separate pairs, not less then 20-100 m from each other. Nest is built by female (male escort her) in spruce or in juniper at 0.5-14 m above ground, from twigs and dry grass lined with hair for 7-16 days. Clutches of 2-5 eggs found in end May – early June (Talasskiy Alatau) or in early June – early August, mainly in mid-June – first decade of July (Zailiyskiy Alatau). One brood reared per season, repeated breeding after loss of first nest is common. Only female incubates for 14-18 days, male feed her. Both parents feed juveniles, which fledge at 15-16 days old. Dispersing to low altitude and on adjacent plains in October – November, usually after cold spell and snow fall, where observed up to end March. At Chokpak Pass one bird ringed 17 October 2003.

477. **Greater Red-mantled Rosefinch** *Carpodacus grandis* Blyth, 1849

Breeding in Western Tien Shan, in upper reaches of Pskem river (Maydantal and Charalma valleys) and in Chatkal'skiy ridge (Palatkhan, Karaarcha valleys). Now this area belong to Uzbekistan mostly, though 27 June, 8 and 25 July 2003 several birds recorded at Teparsay and Aksarsay, near 5 km of Kazakhstan's border (Kovshar, 2004). In winter come down to foothills, up to Tashkent.

Rare resident. Inhabits middle and upper parts of juniper belt on dry rocky slopes with *Caragana*, *Lonicera* and barberry bushes. Biology in Kazakhstan not known, but in Tadjikistan it lives at 2000-3000 m. In mid-May observed in pairs. Nest is built in juniper at 1.3 m above ground from juniper bast lined with thin grass and hair. Clutch of 4 eggs found 4 July 1963, independent juveniles observed in end June – early July (Abdusalyamov, 1966).

478. **Great Rosefinch** *Carpodacus rubicilla* (Gьldenstдdt, 1775)

severtzovi *– the most light race, common colour is pink, white spots on head and breast bigger with washed out edges.* On breeding in Kazakhstan not found. There are four probably breeding areas (Belyalov, 2004a).

Dzungarsky Alatau. In upper course of Aksu river (at 3100-3200 m) moulting male collected by M.N. Korelov 19 August 1956. At 10 May 1982 recorded near Topolevka, 1300 m, not far of high mountains (Sklyarenko, 2000) and 14 May 1985 in Ile valley (Altynemel) two males observed (Dzhanyspaev, 2002c). High mountains here exist 100 km to east, in Tyshkan, where obtained by N.A.Zarudnyy 24 July 1899.

Zailiyskiy Alatau. Birds recorded mostly in winter, in late November. Only 3 spring-summer records: 5 May 1965 (2900 m), single (Gavrilov, 1974), in first half of August 1973 (3000 m) one male (Gubin, 2002f) and 23 March 1975 (3300 m), one singing male (Kovshar *et al*., 1978). As it lives site-by-site with *C.puniceus* it must breeds here.

Kirgyzskiy Alatau. In upper of Merke gorge recorded by F. Karpov 24 November 1985 and 2-3 June 2003 (2400 m) one male observed here (Annenkova, Ashbi, 2004).

Talasskiy Alatau. In Aksu-Dzabagly reserve 8 birds obtained in autumn-winter. A.F.Kovshar said, that "red finch" was shot 30 June 1961, but not taken from cliff – it may be *C.rubicilla* or *C.puniceus*.

On dispersal and in winter observed in Zailiyskiy Alatau ridges up to Almaty, where in some years recorded in big numbers (in 1998/1999 near 80 birds; Gusenko, 2002), in Talasskiy (many records, most early 16 October 2003; Gavrilov, Kolbintsev, 2004) and near Tashkent.

kobdensis *– common colour some darker then in* ***severtzoi,*** *upper part grey with light pinkish tint, white spots on head and breast smaller with sharp edges*. Status is not clear. Probably breeding in Altai, where in upper reach of Katun river on Belukha Mt male and female observed 20 July 2005 with *L.arctoa* and *L.nemoricola* (*per* Raffael Aye).

Rare winter visitor, or may be very rare resident. In winter inhabits deciduous forest with scrubs, especially places with bustard acacia, forest-belts and gardens. In summer it observed on alpine meadow with rocks and heaps of stones. Appears in end November in small groups and flocks up to 30-50 birds. Latest recorded in early March. At Chokpak Pass 20-21 October 1970 singles observed in forest-belt, one was caught 12 April 1970. On Pamir at 4100 m the nest found in rock crack 26 July 1960. It was made from twigs, grass and rootlets lined with lay of hair. It contained 5 heavy incubated blue rare spotted eggs, fledglings observed in end August (Abdusalyamov, 1961).

479. **Red-breasted Rosefinch** *Carpodacus puniceus* Blyth, 1844 (1845)

humii – the first and unique in the world nest found in Zailiyskiy Alatau ridge (Big Almaty Lake) in upper reaches of Chukur at 3300-3400 m, where birds nested and in the subsequent years (Gavrilov, Kovshar, 1967, 1968; Kovshar *et al*., 1978). In summer repeatedly recorded in a number of other points of this ridge, in Kungey Alatau (Kaskator; Kovshar, 1972), in Dzhungarskiy Alatau (Tyshkan), and also in upper reaches of Ular river (basin of Sayram) in Western Tien Shan (Lobachev, 1964). In spring 1991 a pair observed in upper reaches of Yuzhnyi Issyk river (Dzhanyspaev, Belyalov, 1999).

Rare, in places fairly common resident. Inhabits cliff and rock in nival and alpine zones at 2900-3400 m. In winter occur lowers to sub-alpine zone with rocks among juniper thickets, up to 2600 m. In Zailiyskiy Alatau near Big Almaty Lake in mid-May birds stay in pairs and their song was heard often. Displaying and copulation observed in 27 May 1965 and 24 June 1965. Nest is build by female, escorted by male, but not always. The first and the only in the world up to present nest found in June of 1967 at upper stream of Chukur and located in wet chamber of crack in vertical cliff of north-eastern exposition near 80 m of bottom and 40 m of top. It was obtained with help of twelve mountain-climbers, who only on third day after several attempts reach this crack. Nest was made from thin rootlets and dry grass mixed with hair. Clutch of 4 pure white eggs rare spotted by dark-brown and light-brown spots, points and hooks concentrated at blunt end. Dimentions (n=3): 27.1-27.9 x 18.8-19.3 mm, weight 4.8m 4.9 and 5.0 g. Other Carpodacus, nesting on bushes, have blue eggs. The female begins to incubate at last days of June probably. Only female incubates, male feed her. At this place three fledglings fed by female observed 10 August 1975 (Kovshar *et al*., 1978).

480. **Pine Grosbeak** *Pinicola enucleator* (Linnaeus, 1758)

enucleator *– bill longer, less height and narrower at basis than* ***kamtschatkensis****.* Probably vagrant birds of this subspecies observed in Orenburg in 1888 (recorded from 3 November during two weeks, in flocks up to 70 birds) and obtained near Ural'sk 22 November.

kamtschatkensis *– bill shorter, more high and wider at basis than at nominate race.* Breeding and winters in Southwest Altai, where occurs on Lineyskiy, Ivanovskiy, Kholzunskiy and Altaiskiy Tarbagatay ridges (Scherbakov, 1974, 1978a). Vagrants recorded 31 October 1948, 9 birds, 24-25 February and 20 March 1959 in Karaganda and 12 April 1907 in Almaty.

Very rare resident. Inhabits cedar and cedar-fir forest, pure or with some spruce and deciduous trees at 1600-2000 m. Breeding in separate pairs. Singing male heard in early July. Nest is built in tree (spruce or cedar) at 2-4 m above ground from thin twigs, rootlets and dry grass with admixture of moss and lichen. Clutches of 3-4 eggs found in mid-June – early July. Nest with eggs found 16 June 1998, 1 July 1974 and 5 July 1998, with small juveniles 2 July 1975, and with feathered juveniles 15 July 1976 and 25 June 1998. Vagrants on plains observed in February, March, April, October and November.

481. **Long-tailed Rosefinch** *Uragus sibiricus* (Pallas, 1773)

sibiricus – breeding in Semipalatinsk area, possible also in Kalbinskiy Altai and in Altai, in Ul'ba valley and on Markakol' lake, where observed in summer. One female recorded at lower reaches of Bukhtarma river 20 July 2001 (Berezovikov, Rubinich, 2001). On dispersal and in winter occurs in Ural valley, down to Atyrau (Gavrilov *et al*., 1968; Gubin *et al*., 1977), on Syrdarya, in Naurzum Reserve (Bragin, Bragina, 2002), Kurgaldzhino and Karaganda, in Chu valley about Furmanovka (Kovshar, Levin, 1993) and everywhere in foothill areas from Semipalatinsk up to Tashkent.

Rare resident. Inhabits willow thicket with birch on hammock marches with horsetail grass, sedge and other vegetation. On migration and in winter visits deciduous forest with bushes, riparian forest, gardens and thickets of tall weeds, where observed up to end April. Breeding in separate pairs far enough from each other, at other seasons stay in flocks of 5-15 birds. Nest is built in bushes at 1-2 m above ground from dry grass, leaves and bast lined with thin vegetation, hair and feathers. It is build mainly by female for 4-7 days. Clutches of 3-6, usually 4 eggs in June. Mainly female incubates for 13-14 days. Both parents feed juveniles, which fledge at 13-14 days old. One brood fed by parents observed 13 August 1946 in Irtysh valley. Dispersal begins in end September – early October, when they appear outside of breeding area. At Chokpak Pass one bird observed in 6 March 1970. Latest birds in spring recorded in end of March – early April.

482. **Bullfinch** *Pyrrhula pyrrhula* (Linnaeus, 1758)

pyrrhula – breeding in Altai at Rakhmanovskiye springs (Sushkin, 1938) and in Ridder area (Kuzmina, 1953). Recently found on breeding in Ivanovskiy and Ubinskiy ridges and in upper reaches of Bukhtarma river (Scherbakov, 1989b). Occurs in end July near Borovoe lakes, 16 July in Borovoye forest (Kovshar, 1996), and at foothills of Kokchetav Mt. (Stegman, 1934), where quite probable its nesting. On dispersal and in winter occurs in Kazakhstan practically everywhere, from Volga-Ural area and Ural valley up to Altai and Zaysan depression, south up to Duken village in lower of Turgay river (31 October 1975; Auezov *et al*., 1978), on Barsa-Kelmes island in Aral Sea (Gistsov, 1978), in Syrdarya valley (near Kzyl-Orda) and in western part of Talasskiy Alatau ridge (Kovshar, 1966; Gubin, 1989a).

Rare resident, but on most territory of Kazakhstan common winter visitor. Inhabits spruce-fir and cedar-larch forest with some deciduous trees at 1500-1900 m, in winter prefers deciduous forest, forest-belts, gardens and thickets of tall weeds. Breeding in separate pairs fairly far from each other. Nest is built in spruce at 1.5-5 m above ground from twigs, dry grass, moss and lichen lined with thin vegetation, hair and feathers. Clutches of 4-7 eggs in end May – June. Mainly female incubates for 13-15 days, male feed her. Both parents feed juveniles, which fledge at 15-16 days old. May be two broods reared per season. Recently hatched juveniles observed in first decade of August, but full grown juveniles in end June – early August. Autumn dispersal begins late, in October, in southern Kazakhstan occurs in end November – December. Spring migration from February continues up to end March – mid-April.

483. **Grey Bullfinch** *Pyrrhula cineracea* Cabanis, 1872

Breeding in Western Altai on Ivanovskiy and Lineyskiy ridges, in Belaya Uba valley (Scherbakov, 1989b), in Southern Altai, in upper reaches of Bukhtarma river (Berezovikov *et al*., 1992), in depression of Markakol' lake (Berezovikov, 1989a) and in Kara-Kaba valley. On dispersal and in winter occurs mainly in eastern Kazakhstan, occasionally up to Semipalatinsk, Kurgaldzhino Reserve and Akmola (Krivizkiy *et al*., 1985; Andrusenko, 2002), Almaty, Chu-Iliyskiye Mts. and Syrdarya valley at Kzyl-Orda. Vagrant recorded 18 October 1975 in lower of Ural valley near Atyrau (Gubin *et al*., 1977).

Rare resident, but in winter is common on Altai. Inhabits fir forest with some deciduous trees, fir-larch and spruce-birch forest on river valley or shore of lake at 1400-1800 m. On dispersal visits deciduous forest with shrubs and riparian forest, thickets of tall weeds. In Altai begins to sing in end February – March, and we hear them 25 May 1966 in Kara-Kaba river valley. Breeding in separate pairs fairly far from each other. One nest in birch at 5 m above ground found 8 May 1975, and was made from thin twigs and dry grass lined thin rootlets and hair. Female with dry grass in bill observed 12 July 1966. Fledglings recorded in mid-July – first decade of August, independent juveniles in early July. Here it hybridises with Bullfinch, such specimens caught in Ust-Kamenogorsk repeatedly and one pair of male Grey Bullfinch and female Bullfinch was observed (Berezovikov, 1989a; Scherbakov, 1989b). Autumn-winter dispersal begins in August – September, and in south-eastern Kazakhstan birds appear in end October – early November, where they observed up to mid-May.

484. **Hawfinch** *Coccothraustes coccothraustes* (Linnaeus, 1758)

coccothraustes *– head and top upper tail coverts rusty-brown-ochre, back and upper lesser wing coverts dark-chestnut. Grey colour on upper back, white colour on belly, around of black throat spot developed less than* ***humii****. Under parts vinous greyish-brownish.* Occasionally breeding in Western Altai, where on Ubinskiy ridge fledgling observed in 1971 (Scherbakov, 1974), broods recorded at Ridder and near Ust-Kamenogorsk, and birds building the nest observed 2 May 1982 near Buran village in Chernyy Irtysh valley (Scherbakov, 2001). It observed twice in mid-June on Markakol' lake

(Berezovikov, 1989a). On migration occurs practically everywhere in Kazakhstan, from Volga-Ural area, where common in Ural valley, and Mangyshlak up to Irtysh valley between Pavlodar and Ust-Kamenogorsk, on Markakol' lake in Altai, in lower current of Ile river, Almaty, very rare near Chelkar station in autumn (Garbuzov, 2005), at Zlikha at lower Sarysu river adult bird caught 9 August 1986 and young one 19 September 1982 (Khorov *et al*., 1991), in Syrdarya valley, in foothills of Talasskiy Alatau, on Chokpak Pass (ringed in mid-end October 1968, 1971, 1974 and 2004), in Chimkent and Tashkent. Subspecies of these birds established not always.

humii – *head, back, upper tail coverts, breast and sides ochre-yellowish. Grey colour on upper back, white colour on belly, around of black throat spot and on upper greater wing coverts distributed more widely than* ***coccothraustes****. Longest upper tail coverts are ochre. Under parts rusty-yellow.* Breeding in Western Tien Shan, in lower valleys of Pskem and Ugam rivers. At once in 25 May 1944 observed in Aksu-Dzhabagly Reserve (may be nominate subspecies?; Shevchenko, 1948). The scales of autumn-winter dispersal not investigated.

Rare resident or rare winter visitor in places. Inhabits deciduous forest of apple, cherry-plum, walnut, grapes and gardens near villages. On migration occurs in valley forest, forest belts, groves and gardens. In Altai fledgling with female recorded in 31 May 1970. Autumn migration of nominate subspecies begins in second half of August, but in some years in September or October only in small groups, flocks or singly. In spring they migrate in March – April, latest observed in April – May (in Almaty 18 May 1962). In end April subspecies ***humii*** observed by pairs. Female begins to lay eggs in second half of May. Juvenile shot 18 August, and moulting bird in October. No other data existed.

485. **White-winged Grosbeak** *Mycerobas carnipes* (Hodgson, 1836)

merzbacheri – breeding in Tien Shan (Ugamskiy, Talasskiy, Kirgizskiy, Zailiyskiy and Kungey Alatau, Ketmen ridges) and in Dzhungarskiy Alatau. It occupies also Saur (Scherbakov, 1994; Dolgushin, 2002). In summer recorded in upper reaches of Bukhtarma valley (Starikov, 1999), that allows assume its breeding in Southern Altai. Probably it lives in places in Tarbagatay. On dispersal and in winter it comes down to foothills and on adjacent plains, reaching Chu-Iliyskiye Mts. In winter observed 29 November 1981 on Markakol' lake (Berezovikov, 1989a) and in Bukhtarma valley 7 February 1977 (Scherbakov, 1989a).

Common, in places rare or accident resident. Inhabits juniper forest, bushes and juniper-spruce light forest at 1900-2500 m in Talasskiy Alatau, and 2200-3000 m in Zailiyskiy Alatau. On dispersal and in winter visits lower belts and xerophytic mountains with apple tree, hawthorn, dog rose. Breeding in separate pairs, not close then 100-150 m from each other. Nest is built by female (male escorts her) in juniper or spruce at 0.4-17 m above ground from thin twigs, grass stems and some moss pieces lined with juniper bast. Clutches of 2-5 eggs found in end March – early September, mainly from mid-May till end July. Repeated breeding after loss of first nest is common, but some pairs rear two broods per year, that was proved by colour ringing (Kovshar, 1977). Both parents incubate for 14-16 days and feed juveniles, which fledge at 20 days old. Dispersal in lower altitude in flocks of 10-20 birds begins in November, latest birds observed here in early April.

Emberizidae

486. **Lapland Bunting** *Calcarius lapponicus* (Linnaeus, 1758)

lapponicus – occurs on migration and in winter in Altai and in plain Kazakhstan, south up to northern coast of Caspian Sea and Aktau on Mangyshlak, on Barsa-Kelmes island (Gistsov, 1978), in Syrdarya valley (Chiili and Tarturgay), in lower reaches of Talas and Ile rivers (Zhelturanga).

Rare winter visitor. Occurs in steppe and desert plains, on saline soil patches, and in mountain grass steppe up to 2000 m. In autumn appears in mid-September – October. Intense spring flight observed at Central Kazakhstan (Kurgaldzhino Reserve) in March – April, where flocks of hundred or thousand birds observed in 1960, but in other years only of 50 birds, no more. Latest records in mid – end April.

487. **Snow Bunting** *Plectrophenax nivalis* (Linnaeus, 1758)

nivalis – occurs on migration and in winter in Altai and in plain Kazakhstan, south up to northern coast of Caspian Sea and lower reaches of Emba river (Neruchev, 1968), on Barsa-Kelmes island (Gistsov, 1978), in Syrdarya valley (Dzhulek), Alakol' depression (Berezovikov, Erokhov, 2004) and near Almaty.

Rare, in places common winter visitor. Occurs mostly on roads near human settlements, and in steppe or desert plains, where grass not fully covered by snow. In autumn appears in end October – November in small groups or flocks of up to several dozen birds. In severe snowy winters their numbers is higher and they occur in more southern areas, then in normal winters. No intensive flight observed anywhere. In spring latest birds registered in first half or end of March.

488. **Pine Bunting** *Emberiza leucocephala* S.G.Gmelin, 1771

leucocephala – breeding in Saur, Southwest Altai and Kalbinskiy Altai, on foothills reaches Semipalatinsk; lives in Pavlodarskoye Trans-Irtysh'e (Kovshar, Khrokov, 1993) and in forest-steppe of Northern Kazakhstan, south up to Alekseyevka and Karaganda (recorded 13 June 1948, 2 June 1951, 1 June 1952 and 4 June 1953; flying juveniles 7 August 1950 and 12 August 1951). Episodically breeds in Dzhungarskiy Alatau (at Dzerzhinskoye) where in places fairly common (Berezovikov, Levin, 2002a) and in Tien Shan near Narynkol, at Malyy Topchak in Tekes valley, in Kumurchi gorge, Ketmen ridge, in Kurmekty, Kungey Alatau (Skalon, Skalon, 1970) and in Charyn valley near Aktogay (Kovalenko, Sklyarenko, 2002d). Close to Zhalanash 3 birds observed 6 June (Dzhanyspaev, 2004a). In summer recorded in Karkaralinsk 22 June, 9-10 June 1970. On migration occurs in eastern half of Kazakhstan mainly, west up to Syrdarya, but sometimes and in Ural valley, down to Atyrau (Gavrilov *et al*., 1968; Gubin *et al*., 1977). Wintering sometimes in Zaysan depression already, foothills of Dzhungarskiy Alatau and Tien Shan, in Ile delta, but usually in southern Kazakhstan. In Altai freely hybridises with Yellowhammer, such males have white or yellowish throat or some yellow on head and females yellowish edging on primaries (Byers *et al*., 1996), and recorded often at Chokpak Pass in autumn.

Common or accidental in places breeding migrant or common winter visitor. Inhabits coniferous and mixed forest with shrubs and height grass at 600-2000 m, but on migration and in winter occurs in open landscape with scrubs and trees, in forest-belts, gardens, thickets of tall weeds and in settlements. In spring migration begins in mid-February – early March by flocks of up to 30-40 birds in southern Kazakhstan and finishes in mid-April. In northern areas appears in end March – early April, migration finishes here in end April. Breeding in separate pairs. Nest is built on ground under bush or grass from dry grass and leaves lined with thin stems and sometimes hair. Probably only female builds nest. Clutches of 4-5, rarely 6 eggs found in May – mid-July. Only female incubates. Both parents feed nestling. Two broods reared per season. Autumn migration begins in September or early October in flocks of 10-70 birds with Yellowhammer often and finishes in early November. At Chokpak Pass hybrids of Pine Bunting and Yellowhammer occurs very often.

489. **White-capped Bunting** *Emberiza stewarti* (Blyth, 1854)

Breeding and occurs on migration in Tien Shan (Ugamskiy and Pskemskiy ridges, Karatau, Talasskiy, Kirgizskiy and western part of Zailiyskiy Alatau - Zhetyzhol Mts.), and in Chu-Iliyskiye Mts. (Kovshar, Berezovikov, 2001). Nests also in Almaty area and in Syugaty Mts. (Berezovikov, 1999). In summer recorded in foothills of Dzhungarskiy Alatau in Chulak, near Kugaly, on Sarybuchter and in northern spurs between Kyzylagach and Suyuktau in 2002 (Kovshar, Berezovikov, 2001; Berezovikov, Levin, 2002a). At last, single male observed in 9 June 1974 on Stone island of Alakol' lake (Khrokov *et al*., 1993).

Common or in places accident breeding migrant. Inhabits well heat rocky slopes with heaps of stones among shrubs and trees at 600-2200 m. Appears in second half of April, many birds migrate by mountains. Latest migrants observed at Chokpak Pass in early May. Breeding in separate pairs at 80-100 m from each other. Nest is built on ground under bush, stub or stone, sometimes in rock cracks or boulder excavations, from dry grass stems and lined with thin vegetation, honeysuckle bast, by female only. Clutches of 3-5 eggs found in May – early July. Only female incubates for 12-13 days. Both parents feed juveniles, which fledge in mid-June – end August. Some pairs rear two broods per year probably. Autumn migration, which is going by mountains, begins in August. In foothills observed very rare, at Chokpak Pass latest bird caught 22 September 1972.

490. **Yellowhammer** *Emberiza citrinella* Linnaeus, 1758

erythrogenys – breeding in middle current of Ural valley (up to Uralsk; Levin, Gubin, 1985) and in Aktobe area, on Kokchetav upland (Sarymbetskiy pine forest), in Borovoye, on Ishim valley in Petropavlovsk area, in Karaganda, Pavlodarskoye Trans-Irtysh'e (Kovshar, Khrokov, 1993), near Semipalatinsk, in Kalbinskiy Altai, in Southwest Altai and its foothills and in Tarbagatay. On migration and in winter occurs practically everywhere, both on plains and at low altitude in mountains.

Common breeding migrant or in places winter visitor. Inhabits deciduous forest with bushes and height grass on plains and river valleys, and deciduous, mixed and coniferous forest with bushes and height grass in mountains from foothills up to 1800 m in Altai. On migration and in winter occurs in open landscape with scrubs and trees, in forest-belts, gardens, kitchen-gardens, thickets of tall weeds and in settlements. In southern Kazakhstan in spring, migration begins in end February – early March, intensive flight in mid-March and latest recorded in early April. In northern areas appears in second half of March – early April, latest migrants registered in first decade of May. Breeding in separate pairs. Nest is built on ground under bush or grass, rarely in bush at 15-20 cm above ground, from dry grass and lined with rootlets and hair. Clutches of 4-5, rarely 6 eggs found in May – end July. Female incubates mainly and male changes her for a short time, for 12-14 days. Both parents feed nestling, which fledge at 10-13 days old. Autumn migration begins in end August, but mainly in September, and continues up to end October – November. They migrate in flocks of up to 20-50 birds, with Pine Bunting, Brumbling and Chaffich often.

Note. It freely hybridises with Pine Bunting (*Emberiza leucocephala*) in Altai (Markakol' lake area, for example). Such specimens quite common in autumn – winter at south-eastern Kazakhstan and at Chokpak Station.

491. **Rock Bunting** *Emberiza cia* Linnaeus, 1766

par – breeding everywhere in Tien Shan, episodically in Karatau, Dzhungarskiy Alatau, Tarbagatay, Saur, Monrak, in Southwest Altai to west up to Ust-Kamenogorsk, and also found in Del'begerey Mts. (southern extremity of Kalbinskiy Altai). Probably lives also in Kandygatay Mts. On migration occurs somewhat widely, west up to Urdzhar valley and Ile delta. One male recoded in Karajar village, Kurgaldjine Reserve, 18 April 2002 (Koshkin, 2003), but not proved. Occasionally winters in foothills of breeding area.

Common, in places scarce resident dispersing for winter at short distance. Inhabits meadow-steppe and sub-alpine belts at 1200-3000 m in southern Kazakhstan, and at up to 1100 m in Altai, where prefer stony slopes spotted by shrubs and grass vegetation. On migration visits riparian forest, groves, forest-belts, thickets of tall weeds and kitchen-gardens. Appears in March – early April, migration lasts very short time in small flocks of 5-15 birds. Pairs form at breeding place, where they nest in separate pairs at 15-100 m from each other. Nest is built by female only (male escorts her) on ground from dry grass and lined with thin stems, hair and rarely by some moss pieces, for 3-5 days. Clutches of 4-5 eggs found in end of April – mid July, may be two broods per year are reared, but this not proved. Male sometimes helps female in incubating, which lasts 13-14 days, and both parents feed chicks. Autumn migration begins from brood dispersal in early August and going by mountains mainly in flocks of 10-12 birds. In foothills appears in mid-September, latest migrants observed at Chokpak Pass in October. In small numbers wintering at foothills and on adjusted plains.

492. **Godlewski's Bunting** *Emberiza godlewskii* Taczanowski, 1874

godlewskii *– general colour darker than* ***decolorata****.* Occasionally winters in Altai, where 6 birds observed 14 September 2002 near Berel village (Starikov, 2003) and close to Ridder three males caught 15 March 1998 from a flock of 6-7 birds (Berezovikov, Rubinich, 2001). Recorded in vicinities of Tashkent in October – November 1913 (Dementiev, Gladkov, 1954).

decolorata *– general colour lighter than* ***godlewskii****.* In Ketmen' ridge shot 6 December 1953 (Kuzmina, 1974). Probably this bird caught in autumn-winter 1996 and 1998 near Almaty (Dvoryanov, 2002). Nesting in basin of Sarydzhaz in Kyrgyzstan (Yanushevich *et al*., 1960). Vagrant recorded near Tashkent (Dementiev, Gladkov, 1954). In Kazakhstan occurs in Central Tien Shan and its northern foothills. Near Almaty one bird was caught 17 January 2005. At Big Almaty Lake on 3000 m four birds (brood?) observed 5 July 2005 (*per* A.A. Ivashchenko). It is the first observation this bird near breeding place. Thus, Godlewski's Bunting is very rare resident or rare winter visitor in Kazakhstan.

493. **Long-tailed Bunting** *Emberiza cioides* Brandt, 1843

tarbagataica – breeding and occurs on migration at foothills and in Southwest Altai, in Kalbinskiy Altai, Saur, Monrak, Tarbagatay, in north-eastern part of Dzhungarskiy Alatau up to Bolshoy Baskan river, in Altynemel (Belyalov, Ivashchenko, 2002) and Malaysary Mts. (Panov, 2002b). In Tien Shan lives in places in Zailiyskiy and Kirgizskiy Alatau (common at Merke and in Aktokensay). Probably nests in Ketmen ridge and Turaygyr Mts., where recorded in summer. In Kokpek gorge singing male recorded 7 June, and near Charyn canyon observed 6 June 2003 (Dzhanyspaev, 2004a). Isolated

breeding is known in Karkaralinsk (Kazakhishe upland), where 20-25 June 1952 and 11 June 1970 fledglings recorded. On migration and in winter, except for the outlined area, occurs in Chu-Iliyskiye Mts. and in Talasskiy Alatau ridge (Aksu-Dzhabagly Reserve).

Common resident dispersing for winter at short distance. Inhabits stone slopes with short or height grass, shrubs and rare trees at 1000-1500 m. In spring migrants observed in March – mid-April. In breeding habitat appears from April. Breeding in separate pairs. Nest is built on ground, in bush or height grass from dry grass stems and leaves and lined with hair. Clutches of 4-6 eggs in mid-May – mid-July. Two broods are reared per year probably. Autumn migration not expressed, in non-breeding areas observed from first decade of September.

494. **Ortolan Bunting** *Emberiza hortulana* Linnaeus, 1758

Breeding in northern half of Kazakhstan, in Ural valley down to Atyrau, in middle current of Emba river, in Kara-Turgay, Karkaralinsk, Tarbagatay, Kalbinskiy and Southwest Altai. In summer, observed on Alakol' lake (Khrokov *et al*., 1993), in foothills of Dzhungarskiy Alatau, Betpak-Dala (Kovshar, Levin, 1993). Not breeds in Kurgaldzhino Reserve (Krivizkiy *et al*., 1985). On migration occurs everywhere.

Common breeding migrant. Inhabits bush thickets alternate with high grass patches and rare trees, on plains mainly or at low altitude in mountains. On migration visits steppe ravines, fields, kitchen-gardens, gardens, thickets of tall weeds and settlements. Arrives in second half of April – early May, migrates in small flocks of 5-50 specimens. Latest birds registered at Chokpak Pass 18 May 1968 and in Ile delta 30 May. Breeding in separate pairs not far from each other. Nest is built on ground under bush twigs or grass from dry grass and lives lined with soft grass, roots, and small amount of hairs and feathers, by female for 2-4 days. Clutches of 4-6 eggs found in mid-May – mid-July (repeated clutches after loss of first one). Only female incubates for 11-12 days. Both parents feed juveniles, which fledge from mid-June onward. Autumn migration is early, from August. Many birds leave in end August – early September in flocks of some dozen birds, latest registered 11 October 1970 at Chokpak Pass, 22 October 1961 and 1 November 1958 in Volga-Ural area near Novaya Kazanka village.

495. **Grey-necked Bunting** *Emberiza buchanani* Blyth, 1844

buchanani *– back grey, without ochre shade usually, dark back shaft streaks more black-brown, less brown or ochre-brown than* ***cerrutii****.* Breeding and also occurs on migration in southern half of Kazakhstan, west up to lower reaches of Sarysu river, eastern parts of Betpak-Dala desert (Kovshar *et al*., 2004) and Southern Kyzylkum desert, north up to Tengiz lake area and Semipalatinsk. Lives in foothills and at low mountains of Tien Shan, Dzhungarskiy Alatau, Tarbagatay, Monrak, Saur and Southern Altai.

cerrutii *– back grey with ochre shade, dark back shaft streaks more brown or ochre-brown, less black-brown than* ***buchanani****.* Breeding in Mugodzhary ridge and occurs on migration to the south.

Common, in places accidental breeding migrant. Inhabits rocky gorges and mountain slopes with rocks, rare low grass and bushes not far of water up to 2000-2700 m. On migration visits gardens, kitchen gardens, thickets of tall weeds and fields. Arrives early April – early May. Latest migrants caught at Chokpak Pass in mid – end of May. Breeding in separate pairs. Nest is built on ground under grass from old grass stems and lined with thin grass and some amount of horsehairs. Clutches of 4-5 eggs found in end of May – June, fresh eggs found in early July also. Juveniles fledge in end June – July, but singing males observed sometimes in mid-July. Two broods per year didn't prove, but very probably. Autumn migration early and begins in early August probably. In southern areas migrates in small flocks of 10-20 birds from mid-August till mid-September, at Chokpak Pass latest bird caught 15 October 1971.

496. **Rustic Bunting** *Emberiza rustica* Pallas, 1776

Probably breeding on Altai, where singing male observed 26 June 1971 close to Ridder and since 1983 in Ust'-Kamenogorsk suburbs (Scherbakov, 1974, 1978a, 2001). On migration occurs from Volga-Ural area, Ural valley down to Atyrau and in Mangyshlak (Gubin *et al*., 1977; Gubin, 2002a), in Naurzum Reserve 11-17 September 1972, east up to Markakol' lake (Berezovikov, 1989a), Dzharkent, foothills of Western Tien Shan (Chokpak Pass; Gavrilov, Gistsov, 1985), in lower reaches of Turgay river (11 and 20 April 1975; Auezov *et al*., 1978) and lower reaches of Sarysu river (10 September 1982; Khrokov *et al*., 1991). In winter observed at Berezovka village on Irtysh valley (Scherbakov, 1974), about Dzharkent, near Almaty and Chimkent.

Rare passage migrant or winter visitor, or may be accidental resident. On breeding inhabits marshy fir forest, on migration observed in river forests and steppe bush thickets, Botanical or apple

garden, thickets of tall weeds and in forest belts. In spring only one male shot near Kustanay 4 April 1922, but in autumn singly and in small flocks up to 10-15 birds recorded repeatedly from mid September till second half of January.

497. **Little Bunting** *Emberiza pusilla* Pallas, 1776

Occasionally occurs on migration in Irtysh valley, in Western Altai and its foothills (Scherbakov, 1978b), at Semipalatinsk (16 October 1922), near Ust-Kamenogorsk (16 and 26 November 1966), in spur of Ulbisky ridge (from 10 October 1965), very rarely in Kurgaldzhino Reserve (12 December 1969), in lower reaches of Sarysu river (10 September 1982; Khrokov *et al*., 1991), on western shore of Sasykkol lake (obtained by S.A.Brokhovich 17 March 1981), in Ile valley (Aydarlykum sand and near Dzarkent 16 November 1899), in Zailiyskiy Alatau ridge in Shubar natural boundary (Dzhanyspaev, Belyalov, 1997), about Almaty (19 March 1896) and Tashkent.

Rare, in places accidental passage migrant, or rare winter visitor. Occurs in river forests and in steppe bush thickets. In spring one shot in March, but in autumn and winter singly and in small groups observed from mid-October until mid-December.

498. **Yellow-breasted Bunting** *Emberiza aureola* Pallas, 1773

aureola – breeding in Western Altai and its foothills, on Irtysh river from Ust-Kamenogorsk down to Semipalatinsk, in Pavlodarskoye Trans-Irtysh'e (Kovshar, Khrokov, 1993); in upper reaches of Bukhtarma river and on Markakol' lake (Berezovikov, 1989a; Berezovikov *et al*., 1992). Lives in Northern Kazakhstan, south up to Kokchetav and Kustanay. In Naurzum Reserve one male observed in June 2001 repeatedly (Bragin, Bragina, 2002). Not breeds in middle current of Ural valley and in lower reaches of Ilek river (Gubin, Levin, 1982; *per* N.N.Berezovikov). The nearest breeding in Ural valley situated 20 km to south-east of Orenburg (Gavlyuk, Davygora, 1989). On migration occasionally occurs in Zaysan depression, Kurgaldzhino Reserve (Andrusenko, Khrokov, 1981) and in Alakol' lake (Khrokov *et al*., 1993).

Common, in places accidental breeding migrant. Inhabits high grass meadows with bush patches on river valleys and coast of mountain lakes, tussock and sedge marshes with bushes and rare birches on plains, and on river valleys is going up to 1450 m. Appears in late April – early May by day in small flocks, latest migrant observed 23 May 1959 in Kaindinsky pine-grove. Nest is built by female with some help of male on ground or in sedge tussock at 15-20 cm above ground, and concealed by grass very well, for 3-4 days from dry grass stems and leaves and lined with soft grass, roots and hairs. Clutches of 4-5, rarely 6 eggs found in end May – end June. Mainly female incubates with some help of male for 13 days. Both parents feed juveniles, which fledge in July at 13-14 days old. Autumn migration is going to the east. Ural valley leave in end July – early August, Markakol' lake in August, latest observed here 26 August 1980. At Alakol' lake young female collected 12 September 1987.

499. **Reed Bunting** *Emberiza schoeniclus* (Linnaeus, 1758)

schoeniclus *– bill as at* ***passerina****, short and thin. Upper parts darker, black back strips wider, light borders on these feathers more rusty-brownish-ochre, less clean-ochre, strips on sides of belly more black, less ochre than* ***passerina****.* Widespread in Kazakhstan on migration and in winter, north up to Mangyshlak, Syrdarya valley and in lower course of Karatal River. Details of distribution not investigated.

passerina *– bill is short and thin, as at* ***schoeniclus****. Upper parts lighter, black back strips narrower, light borders on these feathers cleaner-ochre, less brown-ochre; sides strips on belly more ochre, less black than* ***schoeniclus****.* Widespread in Kazakhstan on migration and in winter, north up to Mangyshlak, Syrdarya valley, Kurgaldzhino lakes and in lower course of Karatal river. Details of distribution not investigated.

pallidor *– bill thicker and more massive than* ***schoeniclus*** *and* ***passerina****. Upper parts lighter than* ***passerina****. Black back strips as at* ***passerina****. Light borders on back feathers ochre and lighter than* ***passerina****.* Breeding in northern Kazakhstan, south up to Chapaevo village in Ural valley, Turgay, Kokchetav upland and Irtysh valley in Os'moryzhskaya village area. In end May 1996 observed in Kalbinskiy Altai in Sibinka valley (Scherbakov, 1999b). On migration occurs everywhere. Wintering in the south of Republic, north up to Mangyshlak, Syrdarya valley and lower current of Karatal river. Details of distribution not investigated.

pyrrhuloides *– bill much thicker and massive, dorsal ridge of upper mandible much more prominent, than at other races. Upper parts lighter, than at other races, with developed whitish shade of*

light feather borders on back. Breeding in southern half of Kazakhstan, north up to Kamysh-Samarskiye lakes, upper reaches of Emba river, Aksuat lake in Naurzum Reserve, lower valley of Irgiz and Turgay rivers, Tassuat lake in Karaganda area and Alakol' depression. It summer recorded in lower Ilek valley. From northern breeding areas disperse to south. Details of distribution not investigated.

harterti *– bill a little less thick and massive than* ***pyrrhuloides****, but thicker, than at other races. Black back strips wider; light feather borders on back darker, more ochre and less whitish than* ***pyrrhuloides****.* Breeding in eastern Kazakhstan, north up to Kalbinsky Altai (26 May 1996; Scherbakov, 1999b), Chernyy Irtysh valley and Zaysan depression. Details of distribution on migration and in winter not investigated.

Vagrant Reed Bunting (subspecies not known) observed 23 March 1975 in highlands of Zailiyskiy Alatau ridge (Big Almaty Lake; Kovshar, Lopatin, 1983).

Common, in places numerous breeding migrant (northern thin-billed subspecies wintering in south Kazakhstan too) or resident (southern thick-billed subspecies). Inhabits bush thickets on marshes (northern forms) or reed-beds and riparian thickets (southern ones), on migration thin-billed birds occurs on meadows with bushes, in forest-belts, thickets of tall weeds and in reed-beds, and tick-billed birds in summer visit willow bushes, where they breed rarely. In southern Kazakhstan, in spring thin-billed birds begin migrate from March until mid-April, latest observed in early May. In central and northern areas Kazakhstan they appear in early April, many migrate in second half of April and latest recorded in mid-May. Breeding in separate pairs, not very far from each other. Nest is built on ground or in marsh tussock, and well concealed by grass, or in reeds not height above ground or water, from dry grass and leaves and lined by rootlets and hair (thin-billed) or from reed leaves and lined by reed brooms and thin stems (thick-billed). It is build by female probably. Clutches of 4-6 eggs found in end April – mid-June. Mainly female incubates with some help of male for 13 days. Repeated breeding after loss of first nest is often, but two broods per year can be reared too. Autumn migration begins in September, northern areas leave in end October. Thick-billed forms migrate not so far, as thin-billed.

500. **Pallas's Reed Bunting** *Emberiza pallasi* (Cabanis, 1851)

polaris – breeding on Ukok plateau in sources of Bukhtarma river in Altai, where common enough (Scherbakov, 1991), and on Yuzhno-Altaiskiy ridge in Kara-Kaba river sources (Berezovikov, Starikov, 1991). Occasionally occurs on migration in Zaysan depression, vagrants recorded 26 March 1947 and 12 April 1951, male and female in both cases, in Karaganda area (not collected), near Atyrau and Tashkent.

Common breeding migrant. Inhabits alpine tundra with sedge-cotton associations and dwarf willow bushes on marshy parts, and arctic birch thickets on hills at 2100-2600 m. Time of arrive not known. Breeding in separate pairs at 30-50 m apart. Nest is built in birch bushes at 15-25 cm above ground from dry grass. Clutch of 5 eggs probably in early June, as in 18-19 July 1990 in two nests near ready to fledge juveniles and in third one slightly incubated eggs recorded (Scherbakov, 1991). In autumn migrates in October.

501. **Red-headed Bunting** *Emberiza bruniceps* Brandt, 1841

Breeding and also occurs on migration in the most Kazakhstan, north up to Dzhanybek station and Bolshoy Uzen at Mokrinskoye village in Volga-Ural area, 90 km south of Uralsk (Dzhubanov, 1971), in Ilek-Utva area (Berezovikov *et al*., 1995, 1997), Aktobe steppes (Formozov, 1959), Naurzum Reserve (Bragin, Bragina, 2002), Kurgaldzhinskaya depression, at Pavlodarskoye Trans-Irtysh'e (Kovshar, Khrokov, 1991), in Semipalatinsk area, Kalbinskiy Altai (Egorov, 2001), at foothills of Southwest Altai (Berezovikov, 1989a) and in Saur (Dolgushin, 2002).

Common, in places numerous breeding migrant. Inhabits meadows and steppe with bushes, both on plains and in mountains up to 1400-2800 m, and near agriculture fields, irrigated channels and river valleys. On migration visits forest-belts, riparian forest, groves, gardens and thickets of tall weeds. In southern areas, appears in end April or early – mid May, and in second half of May in northern ones. Migrates in flocks of 10-30 birds by morning. Breeding in separate pairs not far one of other. Nest is build for 2-4 days from green and old grass and lined with dry herb leaves and shrub bast. Only female builds the nest and male escort her only. It is placed in various bushes and juniper tree near the ground or up to 4 m above, or in grass, in 1-2 cm above ground often. Clutches of 2-5 or very rarely 6 eggs incubated by female for 10-14 days. Both parents feed juveniles, which fledge at 12-13 days old. The opinion about two broods per year not proved, but long breeding period (nests with eggs found from mid-May till mid-July) explained by high destruction of nests and repeated breeding. Autumn migration

is early, northern areas leave in mid- or end July. Migrates mainly by night probably. At Chokpak Pass mass migration observed only once, 30-31 August 1992, when adults and juveniles fly by morning in flocks of 30-70 birds and record number of 530 Red-headed Bunting ringed. Rarely singly and in small groups observed here up to end of September and latest bird caught 11 October 1971.

502. **Black-headed Bunting** *Emberiza melanocephala* Scopoli, 1769

Breeding only near Dzhanybek village in Volga-Ural area (in 1934-1965). In summer observed in July 1933 at Dzhurun station (south of Kandagach), on migration occurs 6 May 1947 (seven males) in Aktau (Mangyshlak) and near Atyrau.

Very rare breeding migrant. Inhabits plains with ravines and small hills covered by high grass with bush patches and singly trees. Appears in early May. Nest is built from thin grass stems and lined with soft leaves and horsehairs, in bush or in tree up to 1-1.5 m above ground. Clutches of 4-5, rarely 6-7 eggs from end May. No data about autumn migration.

503. **Corn Bunting** *Emberiza calandra* Linnaeus, 1758

calandra *– upper parts somewhat darker, dark strips on back and upper breast wider than* ***buturlini****.* Breeding on Mangyshlak in Ulanak valley in 1965 (Varshavskiy *et al*., 1977). On shore of Mangyshlak Bay singing male observed 26 April 2004 (Levin, Karyakin, 2005). Near Kenderli two small flocks observed end October 2002 (Gubin, 2002a). Occasionally occurs in Western Kazakhstan, 80 km west of Chapaevo 21 May 1957, Atyrau, Ural'sk and Orenburg).

buturlini *– upper parts some lighter, dark strips on back and upper breast narrower than* ***calandra****.* Breeding and migrates in foothills and in low mountains of south and south-east Kazakhstan, from Pistelitau mountains (Kyzylkum desert), Tien Shan (including foothills of Kungey ridge; Berezovikov, 2004c) and Karatau up to Ile valley and foothills of Dzhungarskiy Alatau up to Kapal (Berezovikov, Levin, 2002c). It was pointed as nesting for Syrdarya delta (Zarudnyy, 1915), however later here not found (Spangenberg, 1941). Several times recorded at Kurgaldzhino Reserve in April, May, August – early October (Koshkin, 2003), but not proved. In winter occurs in Karachengil on southern coast of Kapchagay reservoir (Rodionov, Gavrilov, 1993), in northern foothills of Zailiyskiy Alatau and in middle current of Chu river (*per* N.N.Berezovikov). Indication on winter record in Zaysan depression (Sushkin, 1938; Kuzmina, 1974) is based on wrong identification of hybrid bunting skin (Khakhlov, 1928).

Common, in places numerous resident, but some birds migrate for short distance. Inhabits meadows and height-grass steppe with bushes up to 2000-2800 m, and agriculture land adjoins the ridges. On migration visits forest-belts, kitchen-gardens and thickets of tall weeds. Spring migration well expressed in foothills of Western Tien Shan, where birds migrate in mid – end February and March (first wave) and in end April – mid-May (second wave). May be second wave consists of juveniles, second year specimens, or of birds nesting in mountains. On breeding places appears in mid-February – mid-April. Breeding in separate pairs, not far apart. Nest is built on ground under grass or bush twig from dry grass lined with thin grass and sometimes hair. Clutches of 4-5 eggs found in mid-May – June, fledglings were observed from early June up to middle of August. Only female incubates for 12-13 days; juveniles feed by both parents and fledge at 9-12 days old. In second half of July males stop singing. Autumn migration begins in end August – early September. At Chokpak Pass first wave of migrants registered in first decade September, second one from second decade October up to end of this month.

Expected species list

ACCIPITRIFORMES

1. **Lesser Spotted Eagle** *Aquila pomarina* C.L.Brehm, 1831

pomarina – mentioned as a vagrant for Mangyshlak and Buzachi (Zaletaev, 1968). Another vagrant observed on Emba river 14 May 1965 (Neruchev, Shiryaev, 1983). Probably is an accident vagrant.

PELECANIFORMES

2**. Schag** *Phalacrocorax aristotelis* (Linnaeus, 1761)

desmarestii – included on the basis of G.S. Karelin (1875) indication about Schag observation on northern Caspian Sea (Dolgushin, 1948a, 1960). Near 150 years was no new information. But at last years breeding colony was found at the south of Russia, not far from Caspian Sea (Belik, 2003).

CICONIIFORMES

3. **Chinese Pond Heron** *Ardeola bacchus* (Bonaparte, 1855)

In mid October 2004 two juvenile birds three days observed (one dead) on Emegen river (41°18'N 77°58'E) on 3100 m in Issyk-Kul' Region, Kyrgyzstan (Ostashchenko, 2005). Thus observation of Chinese Pond Heron in south-eastern Kazakhstan is quite possible.

CHARADRIIFORMES

4. **Red Knot** *Calidris canutus* (Linnaeus, 1758)

E.A.Eversmann (1866) wrote that Knot is vagrant bird in Orenburg territory (Dolgushin, 1962a). N.A.Zarudnyy (1888) shot one bird near Orenburg. One bird recorded on Tengiz lake 6 August 1999 (Koshkin, 2003) but not confirmed documentary. Occurrence of Red Knot on migration in Kazakhstan is quite probably.

5. **Purple Sandpiper** *Calidris maritima* (Brьnnich, 1764)

E.A.Eversmann (1866) wrote that Purple Sandpiper is vagrant bird in Orenburg territory (Dolgushin, 1962a). In southern forest-steppe on lakes of Kurganskaya province nearby to border with Kazakhstan migrating flocks observed in August and first half of September 1984 (Blinova, Blinov, 1997). Occurrence of the Purple Sandpiper in Kazakhstan on migration is quite probably.

6. **Herring Gull** *Larus argentatus* Pontoppidan, 1763

argentatus – ringed on Courish Spit of Baltic Sea (Russia) after 15 days was met on Caspian Sea (Vaitkyavichus, 1968), close to Dagestan. The Herring Gull may be rare vagrant, which recorded in autumn or in winter.

7. **East Siberian Gull** *Larus vegae* Palmen, 1877

mongolicus – *mantle little darker than* ***cachinnans****. Leg colour varies from greyish-pink to yellow.* Occurrence of East Siberian Gull on dispersal and migration in eastern Kazakhstan is possible, though no reliable information exists.

8. **Great Black-backed Gull** *Larus marinus* Linnaeus, 1758

One bird ringed on Beloye Sea obtained in Makhachkala area in November (Tatarinkova, 1970; Tatarinkova *et al*., 1983), and several times recorded nearby Omsk (Dolgushin, 1962a). The Great Black-backed Gull is a rare vagrant. Can be occurs on Caspian Sea or on big lakes in April and November.

PASSERIFORMES

Muscicapidae

9. **Rufoustailed Flycatcher** *Muscicapa ruficauda* Swainson, 1838

Singly observed in Bala-Baldabrek canyon (joint of Ugamskiy ridge and Talasskiy Alatau) 4 August 1933 (Shulpin, 1961) and 27 June 1963 (Kovshar, 1970). No specimen collected. The Rufoustailed Flycatcher may be is a rare vagrant, or very rare breeding migrant.

Emberizidae

10. **Black-faced Bunting** *Emberiza spodocephala* Pallas, 1776

oligoxantha – at once recorded in winter in Zaysan depression. Vagrants obtained at 6 April 1912 and 25 October 1913 near Tashkent. No new data up to present. The Black-faced Bunting may be an accidental vagrant.

11. **Grey-hooded Bunting** *Emberiza fucata* Pallas, 1776

fucata – vagrant Grey-hooded Bunting twice recorded in autumn (25 October 1911 and 14 October 1913) near Tashkent. Occurrence in south-eastern Kazakhstan on migration is possible.

Note. Last years many foreign ornithologists visit Kazakhstan for birding and each wish to see exotic birds. Thus German ornithologists observe in Kurgaldzhino Reserve *Calidris canutus*, *Larus melanocephalus*, *L. heuglini*, *Rissa tridactyla, Lullula arborea, Anthus hodgsoni* ("fairly common"), *Sylvia althaea, S.nana* (Koshkin, 2002, 2003), English ornithologists observed *Glareola maldivarum* at Southern Kazakhstan (not published yet). Not reject this in principle, we think that it needs to support visual observations by photograph, sketch drawings, video and others and send them to Institute of Zoology (Almaty) in order to avoid mistakes.

Rejected species list

GAVIIFORMES

1. **White-billed Diver** *Gavia adamsii* (G.R.Gray, 1859)

The White-billed Diver mentioned by G.S.Karelin as recorded on Caspian Sea near Atyrau (Menzbier, 1895), but this long time has been rejected (Bianki, 1911; Dolgushin, 1960). As intercontinental observations of this bird are known now in Yugoslavia, Austria and Czechoslovakia (Cramp, Simmons, 1982), occurrence on Caspian Sea is not thought unlikely. More than 100 years it was no new information.

PROCELLARIFORMES

2. **Manx Shearwater** *Puffinus puffinus* (Brunnich, 1764)

Included on the basis of M.N.Bogdanov (1879) indication about Manx Shearwater observation on Caspian Sea, probably near Mangyshlak (Dolgushin, 1960). Near 150 years it was no new information.

PELECANIFORMES

3. **Northern Gannet** *Morus bassanus* (Linnaeus, 1758)

The Northern Gannet observed 17 May 1994 near Petropavlovsk (Drobovzev, Vilkov, 1997a). Though the reliability of definition does not cause in the authors doubts, so distant inner-continent stray of this pelagic species known only on rare records at Murman Sea coast (Sudilovskaya, 1951; Stepanyan, 1990), nor confirmed by the fact data, is rather improbable.

CICONIIFORMES

4. **Sacred Ibis** *Threskiornis aethiopicus* (Latham, 1970)

Single Sacred Ibis observed 25 December 1991 at foothills of Talasskiy Alatau over Dzhabagly village (Kolbintsev, 1997). So distant dispersal of this species living in Africa to south from Sahara and in lower current of Tigris & Euphrates is extremely doubtful. Bird fly at about 100 m and "looked only white with the black ends of wings". Probably it is incorrect determination.

ANSERIFORMES

5. **King Eider** *Somateria spectabilis* (Linnaeus, 1758)

One King Eider was shot in spring 1851 on Ural river near Kulagino village (Menzbier, 1895). More than 150 years it was no new information.

6. **Eider** *Somateria molissima* (Linnaeus, 1758)

A flock of 8 eiders observed 10 April 1982 on Saraiden lake near Novaya Kazanka (Shevchenko *et al*., 1993). Not proved documentary.

7. **Harlequin Duck** *Histrionicus histrionicus* (Linnaeus, 1758)

The Harlequin Duck was shot in autumn near Orenburg (Zarudnyy, 1888), and observed in winter on lakes "of southern steppes" (Eversmann, 1866). More than 100 years it was no new information.

ACCIPITRIFORMES

8. **Eastern Red-footed Falcon** *Falco amurensis* Radde, 1863

The male of Eastern Red-footed Falcon was shot 17 June 1898 near Semipalatinsk (Dunajewski, 1937). No *Falco vespertinus* which not rare here collected. Though this skin stored in Warszawa it is not mentioned by Ch. Vaurie (1965). More than 100 years no new information.

STRIGIFORMES

9. **Brown Hawk Owl** *Ninox scutulata* (Raffles, 1822)

ussuriensis – stuffed Brown Hawk Owl without label stored in Atyrau anti-plague station, therefore its real origin not known. As was said, it shot near Atyrau. So distant meeting of this rare Eastern-Asian species being migrating, far away of its main road, is rather improbable and does not find an explanation.

PASSERIFORMES

Siviidae

10. **Aquatic Warbler** *Acrocephalus paludicola* (Vieillot, 1817)

At once recorded in lower of Ural river at Gogol'skoye 19 September (Bostanzhoglo, 1911). In subsequent years not registered in Kazakhstan. The Aquatic Warbler is an accident vagrant probably.

11. **Brook's Leaf Warbler** *Phylloscopus subviridis* (Brooks, 1872)

Vagrants Brook's Leaf Warbler shot at Orenburg vicinity and Dzharkent in 12 September 1899, but collection skins not remain (Kovshar, 1972). As birds identified by N.A.Zarudnyy, we think that there is not reason to doubt in this. But more than 100 years there is no new information.

Paridae

12. **Crested Tit** *Parus cristatus* Linnaeus, 1758

cristastus – occasionally observed in winter near Orenburg (Zarudnyy, 1888). In our collection there is skin of Crested Tit, which shot 9 August 1882 in Narynkol (Terskey Alatau). Most likely, that skin labels were tangled.

Bibliography

Abdrushin E.V., 1989. Occurrence of Booted Eagle in the middle current of Ilek river. *Distribution and fauna of birds of Ural, Orenburg: 3. (In Russian).*

Abdusalyamov I.A., 1961. The birds of Rang-Kul lake on Pamir. *Proc. of Inst. Zool. and Parasithol. of AS TajSSR, 21: 3-153. (In Russian).*

Abdusalyamov I.A., 1966. Data on biology of Greater Red-mantled Rose Finch in Tadjikistan. *Vertebrate animals of Middle Asia, Tashkent: 144-149. (In Russian).*

Ali S., Ripley S.D., 1981. Handbook of the birds of India and Pakistan. Divers to Hawks, *Delhi, 1: 1-384.*

Ali S., Ripley S.D., 1987. Handbook of the birds of India and Pakistan. Larks to Grey Hypocolius, *Delhi, 5: 1- 278.*

Andrusenko N.N., 1984. Ornitho-faunistic records in Kurgaldzhin Reserve. *Migration of birds in Asia, Tashkent: 132-134. (In Russian).*

Andrusenko N.N., 1986a. Rare birds of Kurgaldzhin Reserve. *Rare, disappearing and not well known birds of USSR, M.: 109-114. (In Russian).*

Andrusenko N.N., 1986b. The brief messages about Steppe Eagle. In Kurgaldzhin Reserve …. *Rare animals of Kazakhstan, Alma-Ata: 128. (In Russian).*

Andrusenko N.N., 1989. About Grey Crane in Kurgaldzhin Reserve. *Communications Baltic Commission Study Bird Migration, 21: 165-169. (In Russian).*

Andrusenko N.N., 1990. New data about Swans of Kurgaldzhin Reserve. *Ecology and protection of Swans in USSR, 2: 3-5. (In Russian).*

Andrusenko N.N., 2002. Addition to the bird list of Kurgaldzhin nature Reserve. *Selevinia, 1-4: 122-126. (In Russian).*

Andrusenko N.N., Dudenkov N.A., 1982. Faunistic notes on waders of Kurgaldzhin Reserve. *Ornithology, 17: 155. (In Russian).*

Andrusenko N.N., Khrokov V.V., 1981. New information about birds of Kurgaldzhin Reserve. *Migration of birds in Asia. Ashghabad, 6: 162-166. (In Russian).*

Annenkova S.Yu., 2002a. Birdwatching. *Kazakhstan Ornithol. Bull. 2002, Almaty: 48. (In Russian).*

Annenkova S.Yu., 2002b. White-throated Pied Wheatear. *Kazakhstan Ornithol. Bull. 2002, Almaty: 109. (In Russian).*

Annenkova S.Yu., Ashbi V. 2004. Some ornithological observation in Southern and Central Kazakhstan in May-June 2003. *Kazakhstan Ornithol. Bull. 2003, Almaty: 90-91. (In Russian).*

Annenkova S.Yu., Plakhov K.N., 2002. Summer occurrence of Dotterel on north-eastern Dzhungarskiy Alatau. *Kazakhstan Ornithol. Bull. 2002, Almaty: 99. (In Russian).*

Ashbi V,. Annenkova S.Yu., 2002a. Expedition. 26. North-eastern Dzhungarskiy Alatau. 34. Ust'-Kamenogorsk - Rakhmanovskiye springs *Kazakhstan Ornithol. Bull. 2002, Almaty: 28, 38. (In Russian).*

Ashbi V., Annenkova S.Yu., 2002b. First record of Peregrine Falcon brood on Zailiyskiy Alatau. *Kazakhstan Ornithol. Bull. 2002, Almaty: 70. (In Russian).*

Ashbi V., Annenkova S., 2004. Ornithological observations with groups "Birdfinder". *Kazakhstan Ornithol. Bull. 2003, Almaty: 133-136.*

Auezov E.M., 1970. About finding of colony Relict Gull *Larus relictus* Lцnnb. *Bull. AS KazSSR, 1 (297): 59. (In Russian).*

Auezov E.M., 1974. Northern Vietnam - new place for Relict Gull (*Larus relictus*). *Zool. J., 53, 1: 139. (In Russian).*

Auezov E.M., 1986a. Lake Balkhash - new place of Relict Gull *Larus relictus* Lцnnb. breeding in USSR. *Izvestia AS KazSSR, ser. biol., 4: 81. (In Russian).*

Auezov E.M., 1986b. Great Bustard. The brief messages. In territory of Turgay reservation… *Bustards and way of their preservation, M.: 63-64. (In Russian).*

Auezov E.M., Bikbulatov M.N., 1972. Waterfowl wintering in the south of Kazakhstan in 1970. *Resources of waterfowl in USSR, their reproduction and use, M.: 108-110. (In Russian).*

Auezov E.M., Grachev V.A., 1977. Disappearing and rare birds of Alakol' depression. *Rare and disappearing animals and birds of Kazakhstan, Alma-Ata: 135-138. (In Russian).*

Auezov E.M., Khrokov V.V., Berezovskiy V.G., 1978. The new information about ornitho-fauna of lower current of Turgay river. *Migration of birds in Asia, Tashkent: 151-153. (In Russian).*

Balmer D., Betton K., 2002. Around the region. *Sandgrouse, 24(1): 76-80.*

Baydavletov R.Dz., 1986. The brief messages about Booted Eagle. On Western Altai…. *Rare animals of Kazakhstan, Alma-Ata: 116. (In Russian).*

Baydavletov R.Dz.., 1994. Needle-tailed Swift (*Hirundapus caudacutus* Lath.) in Western Altai. *Selevinia, 2(2): 90. (In Russian).*

Belezkaya N.I., Vilkov V.S., Kulikov N.F., 1997. Problems of biodiversity preservation in conditions practically continuous economic assimilation of region. *Biological and landscape variety of Republic of Kazakhstan, Almaty: 103-105. (In Russian).*

Belik V.P., 1989. About the further expansion of White-tailed Plover. *Distribution and fauna of birds of Ural, Orenburg: 29-31. (In Russian).*

Belik V.P., 1994. Probable meetings of Slender-billed Curlew in lower current of Ural. *Information materials of waders working group, M., 7: 30. (In Russian).*

Belik V.P., 2003. Nesting colony of Schag on the south of Russia. *Strepet, 1: 67. (In Russian).*

Belik V.P., Debelo P.V., Moroz V.V., Shevchenko V.L., 1997. Bewick's Swan (*Cygnus bewickii*) in Volga-Ural territory. *Casarca, 3: 280-285. (In Russian).*

Belousov E.M., 1994. Occurrence of Needle-tailed Swift (*Hirundapus caudacutus* Latham, 1801) on migration in Western Tien Shan. *Selevinia, 2(1): 72. (In Russian).*

Belousov E.M., 1995. Occurrence of Great Tit (*Parus major*) in Talasskiy Alatau. *Selevinia, 3: 84. (In Russian).*

Belyalov O.V., 1999. New data on rare birds of Bukhtarma valley (Southern Altai). *Special protected territories of Altai country and nearby regions, Barnaul: 78-79. (In Russian).*

Belyalov O.V, 2002a. Coal Tit. *Kazakhstan Ornithol. Bull. 2002, Almaty: 113-114. (In Russian).*

Belyalov O.V., 2002b. Expedition. 37. Upper reach of Bukhtarma river. *Kazakhstan Ornithol. Bull. 2002, Almaty: 41. (In Russian).*

Belyalov O.V, 2002c. Demoiselle Crane. *Kazakhstan Ornithol. Bull. 2002, Almaty: 74. (In Russian).*

Belyalov O,V., 2002d. Great Bustard. *Kazakhstan Ornithol. Bull. 2002, Almaty: 77. (In Russian).*

Belyalov O,V., 2002e. Dusky Warbler. *Kazakhstan Ornithol. Bull. 2002, Almaty: 108. (In Russian).*

Belyalov O,V., 2002f. About Godlewski's Bunting in Kazakhstan. *Kazakhstan Ornithol. Bull. 2002, Almaty: 120-121. (In Russian).*

Belyalov O,V., 2002g. Griffon Vulture. *Kazakhstan Ornithol. Bull. 2002, Almaty: 98. (In Russian).*

Belyalov O.V., 2002h. Crimson-winged Finch. *Kazakhstan Ornithol. Bull. 2002, Almaty: 118-119. (In Russian).*

Belyalov O.V., 2004a. Where nest of Great Rosefinch?. *Kazakhstan Ornithol. Bull. 2003, Almaty: 160-163. (In Russian).*

Belyalov O.V., 2004b. Pallid Harrier *Circus macrourus*. *Kazakhstan Ornithol. Bull. 2003, Almaty: 165. (In Russian).*

Belyalov O.V., 2004c. Menetries's Warbler *Sylvia mystacea*. *Kazakhstan Ornithol. Bull. 2003, Almaty: 189. (In Russian).*

Belyalov O.V., Berezovikov N.N., 2004. Isabelline Red-tailed Shrike as breeding bird in Kazakhstan. *Kazakhstan Ornithol. Bull. 2003, Almaty: 182-183.*

Belyalov O,V., Ivashchenko A.A., 2002. Long-tailed Bunting. *Kazakhstan Ornithol. Bull. 2002, Almaty: 121. (In Russian).*

Belyalov O.V, Ivashchenko A.A., Annenkova S.Yu., Postnikov N.A., 2002. Red-breasted Goose. *Kazakhstan Ornithol. Bull. 2002, Almaty: 56. (In Russian).*

Belyalov O.V, Karpov F.F., 2002. Expedition. 21. Sorbulak. *Kazakhstan Ornithol. Bull. 2002, Almaty: 23-25. (In Russian).*

Belyalov O.V, Karpov F.F., 2002b. Yellow-eyed Stock Dove. *Kazakhstan Ornithol. Bull. 2002, Almaty: 88. (In Russian)*

Belyalov O.V, Karpov F.F., 2004a. Ornithological observatyons on Sorbulak lake in 2003. *Kazakhstan Ornithol. Bull. 2003, Almaty: 81-84. (In Russian).*

Belyalov O.V, Karpov F.F., 2004b. About record of Sociable Lapwing brood in Almaty region in 2003. *Kazakhstan Ornithol. Bull, 2003. Almaty: 152-153. (In Russian).*

Belyalov O.V., Karpov F.F., 2005. Ornithological observations on Sorbulak lake in 2004. *Kazakhstan Ornithol. Bull. 2004, Almaty: 58-63.*

Berezovikov N.N., 1980. About meeting of Ibisbill on Altai. *Ornithology, 15: 192-193. (In Russian).*

Berezovikov N.N., 1981. Nesting of Redwing and Song Thrush in Southern Altai. *Ornithology, 16: 152-153. (In Russian).*

Berezovikov N.N., 1986a. A modern condition of Great Bustard population in Eastern Kazakhstan. *Bustards and way of their preservation, M.: 48-52. (In Russian).*

Berezovikov N.N., 1986b. Occurrence of Grey Phalarope in Eastern Kazakhstan. *Ornithology, 21: 128. (In Russian).*

Berezovikov N.N., 1989a. Birds of Markakol' depression, *Alma-Ata: 1-199. (In Russian).*

Berezovikov N.N., 1989b. Grey Crane in a southeast of Southern Altai. *Communications Baltic Commission Study Bird Migration, 21: 105-108. (In Russian).*

Berezovikov N.N., 1991. Osprey. Pallas's Fish Eagle. White-tailed Eagle. *The Red Book of Kazakh SSR, Alma-Ata, 1: 198-200, 212-217. (In Russian).*

Berezovikov N.N., 1992. Chukar on Southern Altai. *Condition and ways of savings genes fund of wild plants and animals in Altai territory, Barnaul: 7-9. (In Russian).*

Berezovikov N.N., 1999a. The new data on moving birds in south-east Kazakhstan. *Problems of protection and steady use of fauna biodiversity of Kazakhstan, Almaty: 54-55. (In Russian).*

Berezovikov N.N., 1999b. Black Brent in the Alakol' depression. *Casarca, 5: 342. (In Russian).*

Berezovikov N.N., 2001a. Addition and amplification to ornithofauna of Utva-Ilek territory. *Materials about bird distribution on Ural, nearby territory and in Western Siberia, Yekaterinburg: 17-20. (In Russian).*

Berezovikov N.N., 2001b. About finding of Whiskered Tern (*Chlidonias hybrida*) on lakes of Alakol' hollow. *Selevinia, 1-4: 200. (In Russian).*

Berezovikov N.N., 2002a. Expedition. 4. Utva-Ilek area. *Kazakhstan Ornithol. Bull. 2002, Almaty: 9-10. (In Russian).*

Berezovikov N.N., 2002b. Expedition. 27. Alakol' depression. *Kazakhstan Ornithol. Bull. 2002, Almaty: 28-29. (In Russian).*

Berezovikov N.N., 2002c. Wood Warbler. *Kazakhstan Ornithol. Bull. 2002, Almaty: 107. (In Russian).*

Berezovikov N.N., 2002d. Pallas's Fish Eagle. *Kazakhstan Ornithol. Bull. 2002, Almaty: 65. (In Russian).*

Berezovikov N.N., 2002e. Goosander. *Kazakhstan Ornithol. Bull. 2002, Almaty: 96. (In Russian).*

Berezovikov N.N., 2002f. Common Curlew. *Kazakhstan Ornithol. Bull. 2002, Almaty: 100. (In Russian).*

Berezovikov N.N., 2002g. Moustached Warbler. *Kazakhstan Ornithol. Bull. 2002, Almaty: 106. (In Russian).*

Berezovikov N.N., 2002h. Richard's Pipit. *Kazakhstan Ornithol. Bull. 2002, Almaty: 104. (In Russian).*

Berezovikov N.N., 2002i. White-winged Woodpecker. *Kazakhstan Ornithol. Bull, 2002. Almaty: 101. (In Russian).*

Berezovikov N.N., 2004. Great Tit *Parus major*. *Kazakhstan Ornithol. Bull, 2003. Almaty: 193. (In Russian).*

Berezovikov N.N., 2004a. About breeding of Little Gull in Tentek delta. *Kazakhstan Ornithol. Bull. 2003, Almaty: 180. (In Russian).*

Berezovikov N.N., 2004b. The first record of White's Thrush in Alakol' depression. *Kazakhstan Ornithol. Bull. 2003, Almaty: 185. (In Russian).*

Berezovikov N.N., 2004c. To ornithofauna of Kungey Alatau (North Tien Shan). *Kazakhstan Ornithol. Bull. 2003, Almaty: 215-222. (In Russian).*

Berezovikov N.N., 2004d. Autumn record of Water Rail in Almaty. *Kazakhstan Ornithol. Bull. 2003, Almaty: 177. (In Russian).*

Berezovikov N.N., Belyalov O.V., 1999. Nesting of Whooper Swan in the Central Tien Shan. *Casarca, 5: 214-215. (In Russian).*

Berezovikov N.N., Belyalov O.V., Karpov F.F., 2002. Eastern Rock Nuthatch. *Kazakhstan Ornithol. Bull. 2002, Almaty: 115. (In Russian).*

Berezovikov N.N., Erokhov S.N., 1996/1997. Vagrant Blue Whistling Thrush (*Myophonus caeruleus* Scop.) in Taukum desert. *Selevinia, 1-4: 233-244. (In Russian).*

Berezovikov N.N., Erokhov S.N., 2002. Black-backed Gull. *Kazakhstan Ornithol. Bull. 2002, Almaty: 100-101. (In Russian).*

Berezovikov N.N., Erokhov S.N., 2004. Faunistic additions and elaborations to bird list of Alakol' depression. *Kazakhstan Ornithol. Bull. 2003, Almaty: 208-213. (In Russian).*

Berezovikov N.N., Gistsov A. P., 1993. On the avifauna of the north-eastern part of the Caspian depression. *Russ. Ornithol. J., 2(1): 89-90. (In Russian).*

Berezovikov N.N., Gistsov A. P., 1994. Fodder behaviour of Little (*Egretta garzetta* L.) and Great Egret (*E.alba* L.) in delta of Ural. *Selevinia, 3(2): 63-68. (In Russian).*

Berezovikov N.N., Gistsov A. P., 1998-1999. New data about migration of Black Stork (*Ciconia nigra*) in South and South-East Kazakhstan. *Selevinia, 1998-1999: 236. (In Russian).*

Berezovikov N.N., Gistsov A. P., 2001. Birds of Ural river delta. *Russ. Ornithol. J., 153: 635-649. (In Russian).*

Berezovikov N.N., Gubin B.M., Gul' I.P., Erokhov S.N., Karpov F.F., Kovalenko A.V., 1999. Birds of the Taukum desert, *Kiev: 1-116. (In Russian).*

Berezovikov N.N., Khrokov V.V., Karpov F.F., Kovalenko A.V., 1997. Avia-faunistic population of steppe landscapes of Utva-Ilek territory. *Steppe of Eurasia. Materials of the international symposium, Orenburg: 122. (In Russian).*

Berezovikov N.N., Khrokov V.V., Karpov F.F., Kovalenko A.V., 2000. Birds of Utva-Ilek territory. 1. Podicipediformes, Anseriformes. *Russ. Ornithol. J., 119: 12-23. (In Russian).*

Berezovikov N.N., Khrokov V.V., Karpov F.F., Kovalenko A.V., 2000a. Birds of Utva-Ilek territory. YI. Passeriformes, part one. *Russ. Ornithol. J., 126: 3-13. (In Russian).*

Berezovikov N.N., Khrokov V.V., Karpov F.F., Kovalenko A.V., 2000b. Birds of Utva-Ilek territory. YI. Passeriformes, part two. *Russ. Ornithol. J., 127: 3-22. (In Russian).*

Berezovikov N.N., Khrokov V.V., Kovalenko A.V., 1995. Ornitho-fauna of Aktau mountains (Western Kazakhstan region). *Fauna of Southern Ural and Northern Caspian Sea, Orenburg: 52-54. (In Russian).*

Berezovikov N.N., Khrokov V.V., Kovalenko A.V., Karpov F.F., 1992. Rare and disappearing birds of Utva-Ilek territory. *Rare species of plants and animals of Orenburg area, Orenburg: 25-27. (In Russian).*

Berezovikov N.N., Kovalenko A.V., 2001. The birds of steppe and agricultural landscapes of village Shortandy vicinity. *Materials to bird distribution on Ural, in Priural'e and Western Siberia, Yekaterinburgh: 20-40. (In Russian).*

Berezovikov N.N., Kovshar A.F., 1991. About birds Semipalatinsk territory adjacent to Irtysh river. *News of AS KazSSR, ser. biol., 4: 45-49. (In Russian).*

Berezovikov N.N., Levin A.S., 2001. About breeding of Small Skylark (*Alauda gulgula*) in Tarbagatay and Zaysan Hollow. *Selevinia, 1-4: 195-197. (In Russian).*

Berezovikov N.N., Levin A.S., 2002a. Ornithological essay on Saikan and Kishkenetau (Saur range). *Selevinia, 1-4: 87-92. (In Russian).*

Berezovikov N.N., Levin A.S., 2002b. To the ornithofauna of the Eastern part of Dzhungarskiy Alatau Mts. *Selevinia, 1-4: 93-108. (In Russian).*

Berezovikov N.N., Levin A.S., 2002c. New data about distribution of Small Skylark (*Alauda gulgula*) in Kazakhstan. *Selevinia, 1-4: 308. (In Russian).*

Berezovikov N.N., Levin An.S., 2002a. Expedition. 28. Dzhungarskiy Alatau. 30. Tarbagatay. 31. Manrak. 32. Kazakhskiy small-hills territory. *Kazakhstan Ornithol. Bull. 2002, Almaty: 29-37. (In Russian).*

Berezovikov N.N., Levin An.S., 2002b. White-winged Lark. *Kazakhstan Ornithol. Bull. 2002, Almaty: 102-103. (In Russian).*

Berezovikov N.N., Levin An.S., 2002c. Corn Bunting. *Kazakhstan Ornithol. Bull. 2002, Almaty: 120. (In Russian).*

Berezovikov N.N., Levin A.S., 2002d. About first meeting of Yellow-eyed Stockdove in Tarbagatay. *Kazakhstan Ornithol. Bull. 2002, Almaty: 87. (In Russian).*

Berezovikov N.N., Levin A.S., 2004. Ornithological trip at Tarbagatay in 2004. *Kazakhstan Ornithol. Bull. 2003, Almaty: 80-83. (In Russian).*

Berezovikov N.N., Levin A.S., 2004b. Ornithological observations at Zaysan lake in June 2004. *Kazakhstan Ornithol. Bull. 2003, Almaty: 83-88. (In Russian).*

Berezovikov N.N., Levinskiy Yu.P., 2002. On nesting of Great Spotted Woodpecker in Alakol' depression. *Russ. Ornithol. J., 206: 1139-1140. (In Russian).*

Berezovikov N.N., Levinskiy Yu.P., 2002a. On nesting of Black Stork on Tentek river delta (Alakol' depression). *Kazakhstan Ornithol. Bull. 2002, Almaty: 54. (In Russian).*

Berezovikov N.N., Levinskyi Yu.P., 2004. Ornithological observations in Balkhash-Alakol' depression in 2003. *Kazakhstan Ornithol. Bull. 2003, Almaty: 69-74. (In Russian).*

Berezovikov N.N., Levinskyi Yu.P., 2005. Ornithological observation in Alakol' hollow in 2004. *Kazakhstan Ornithol. Bull. 2003, Almaty: 72-79. (In Russian).*

Berezovikov N.N., Lukhtanov A.G., Starikov S.V., 1992. Birds of Bukhtarma valley (Southern Altai). *Modern Ornithology, M.: 160-179. (In Russian).*

Berezovikov N.N., Panov A.V., 1999. About enlargement of breeding area of Striated Scops Owl (Otus brucei) in south-eastern Kazakhstan. *Serinus, 2: 40.*

Berezovikov N.N., Rubinich B., 2001. Ornithological findings in Eastern Kazakhstan. *Selevinia, 1-4: 57-65. (In Russian).*

Berezovikov N.N., Scherbakov B.V., 1990a. The pigeons (Columbae, Columbidae) in East Kazakhstan. *Zool. J., 69(1): 99-105. (In Russian).*

Berezovikov N.N., Scherbakov B.V., 1990b. Distribution of Rook in East Kazakhstan. *Vestnik Zool., 1: 75-76. (In Russian).*

Berezovikov N.N., Scherbakov B.V., 1995. About Black Vulture in East Kazakhstan. *Especially protected territories of Altai Region, tactics of preservation of species diversity and gene-fond, Barnaul: 7-8. (In Russian).*

Berezovikov N.N., Starikov S.V., 1991. Modern condition and tendencies of ornitho-fauna at Southern Altai. *Materials of 10-th All-Union ornithol. Conference, Minsk, 1: 37-38. (In Russian).*

Berezovikov N.N., Starikov S.V., Scherbakov B.V., 1995. Dalmatian and White Pelicans in Zaysan depression. *Selevinia, 1: 62-65. (In Russian).*

Berezovikov N.N., Starikov S.V., Vorobyev I.S., 1997. Southern Altai - new place of Short-toed Eagle nesting. *Problems of preservation of a biological diversity of Southern Siberia, Kemerovo: 27-28. (In Russian).*

Berezovikov N.N., Vorobyev I.S., 1997. The review terrestrial vertebrates of Narymskiy reservation. *Biological and landscape variety of Republic of Kazakhstan, Almaty: 76-78. (In Russian).*

Berezovikov N.N., Zhatkanbaev A.Dz., 1995. Nesting of Short-toed Eagle (*Circaetus gallicus*) in the lower current of Ile river. *Selevinia, 3 (2): 68. (In Russian).*

Berezovskiy V.G., 1991. The brief messages on Little Egret. At eastern coast of the Aral sea… *Rare birds and animals of Kazakhstan, Alma-Ata: 41. (In Russian).*

Bevza I.A., 2004. Bird observations in Karachingil hunting area in 2003. *Kazakhstan Ornithol. Bull. 2003, Almaty: 79-80. (In Russian).*

Bevza I.A., 2005. Bird observation in Karachengel in 2004. *Kazakhstan Ornithol. Bull. 2004, Almaty: 67-70. (In Russian).*

Bianki B.L., 1911. Birds. Colymbiformes and Procellariiformes. *Fauna of Russia and adjacent countries, St.-Petersbourg, 1(1): 1-384 (In Russian).*

Bibikov D.I., Korelov M.N., 1961. About ornitho-geographical characteristic of Tarbagatay. *Materials on terrestrial vertebrates of Kazakhstan, Alma-Ata: 12-39. (In Russian).*

Bidashko F.G., Djubanov A.A., 1999. Black-bellied Sandgrouse in the south of Western Kazakhstan region. *Problems of protection and steady use of a bio-diversity of Kazakhstan fauna, Almaty: 57-58. (In Russian).*

Birds of Kazakhstan, 1960, *Alma-Ata, 1: 1-470. (In Russian).*

Birds of Kazakhstan, 1962, *Alma-Ata, 2: 1-780. (In Russian).*

Birds of Kazakhstan, 1970, *Alma-Ata, 3: 1-646. (In Russian).*

Birds of Kazakhstan, 1972, *Alma-Ata, 4: 1-368. (In Russian).*

Birds of Kazakhstan, 1974, *Alma-Ata, 5: 1-480. (In Russian).*

Blagosklonov K.N., 1978. Collared Dove in the European part of Russia. *Geography and ecology of terrestrial vertebrates, Vladimir: 3-10. (In Russian).*

Blinova T.K., Blinov V.N., 1997. Birds of Southern Trans-Ural. Forest steppe and steppe. *Faunistical review and protection of birds, Novosibirsk 1: 1-296. (In Russian).*

Borodikhin I.F., 1968. Birds of Alma-Ata, *Alma-Ata: 1-121 . (In Russian).*

Borodikhin I.F., 1970. Family Hirundinidae. *Birds of Kazakhstan, Alma-Ata, 3: 161-193. (In Russian).*

Bostanzhoglo V.N., 1911. Ornithological fauna of the Aral-Caspian steppes. *Materials to knowledge of fauna and flora of Russian Empire. Section Zool., M., 11: 1-412. (In Russian).*

Bragin E.A., 1980. Sparrowhawk and Long-legged Buzzard - new breeding species in Naurzum Reserve. *Biology of birds of Naurzum Reserve, Alma-Ata: 165-166. (In Russian).*

Bragin E.A., 1991. Condition of some rare birds in a southern-east of the Kustanay area. *Materials of 10-th All-Union Ornithol. Conference, Minsk, 2 (1): 75-76. (In Russian).*

Bragin E.A., 1997. Problems of preservation of bird fauna in Naurzum Reserve. *News of a science of Kazakhstan. Nature-Reserved fund of Kazakhstan, Almaty: 45-47. (In Russian).*

Bragin E.A., 1999. Condition of rare birds in Northern Turgay district and Naurzum Reserve. *Theoretical aspects of bird preservation in Middle Asia and Kazakhstan, M.: 85-92. (In Russian).*

Bragin E.A., 2000. New Shrike species in Naurzum fauna. *Materials on distribution of birds in Ural, Priural'e and Western Siberia, Yekaterinburg, 5: 48. (in Russian).*

Bragin E.A., 2002a. Current status of cranes in Kustanay Region, Kazakhstan. *Cranes of Euroasia (distribution, number, biology), M.: 168-174. (in Russian).*

Bragin E.A., 2002b. About nest of Hobby on ground. *Selevinia, 1-4: 309. (in Russian).*

Bragin E.A., 2004. Ornithological study in Kustanay region in 2003. *Kazakhstan Ornithol. Bull. 2003, Almaty: 41-46. (In Russian).*

Bragin E.A., 2005. Ornithological study in Kustanay region in 2004 year. *Kazakhstan Ornithol. Bull. 2004, Almaty: 20-25. (In Russian).*

Bragin E.A., Bragina T.M., 1999. Breeding bird fauna of Naurzum Reserve. *Territorial aspects of protection of birds in Central Asia and Kazakhstan, M., 8-15. (In Russian).*

Bragin E.A., Bragina T.M., 2002. Fauna of the Naurzum Reserve. Fishes, amphibians, reptiles, birds, mammals (annotated list), *Kustanay: 1-56. (In Russian).*

Burczak-Abramovicz N.I., 1966. Materialy do ornitologii Stepu Turgajskiego (Poludniowy Kazachstan, ZSRR). *Przeglad Zool., 10 (3): 310-318.*

Buturlin S.A., Dementiev G.P., 1934. Birds of USSR, *M.-L., 1: 1-255. (In Russian).*

Buturlin S.A., Dementiev G.P., 1935. Birds of USSR, *M.-L., 2: 1-278. (In Russian).*

Buturlin S.A., Dementiev G.P., 1936. Birds of USSR, *M.-L., 3: 1-256. (In Russian).*

Buturlin S.A., Dementiev G.P., 1937. Birds of USSR, *M.-L., 4: 1-334. (In Russian).*

Byers C., Olsson U., Curson J., 1996. Buntings and Sparrows. *A guide to the Buntings and North American Sparrows, Hong Kong: 1-334.*

Chalikova E.S., 2001. About successful breeding of mixed pair Great (*Parus major*) and Grey (*Parus bokharensis*) Tit in foothills of Talasskiy Alatau. *Selevinia, 1-4: 204. (In Russian).*

Chalikova E.S., 2002. Expedition. 16. Aksu-Dzhabagly. *Kazakhstan Ornithol. Bull. 2002, Almaty: 20. (In Russian).*

Chalikova E.S., 2004. Interesting bird records in Aksu-Dzhabagly reserve. *Kazakhstan Ornithol. Bull. 2003, Almaty: 53-55. (In Russian).*

Chalikova E.S., 2004a. Some results of expedition in Western Tien Shan in 2003. *Kazakhstan Ornithol. Bull. 2003, Almaty: 93-97. (In Russian).*

Chalikova E.S., 2004b. About colony of Rook in foothills of Karzhantau ridge. *Kazakhstan Ornithol. Bull. 2003, Almaty: 183. (In Russian).*

Chelzov A.M., 1957. About a pulsation of distribution of some birds in area Turgay hollow in connection with fluctuations of a level of lakes. *Materials to confer. on questions of a land zoo-geography, Lvov: 160-161. (In Russian).*

Chelzov-Bebutov A.M., 1958. About a distribution pulsation of some bird species in area Turgay depression. *Problems of zoo-geography of a land, Lvov: 325-334. (In Russian).*

Chelzov-Bebutov A.M., 1960. Fluctuations of distribution of Bearded Tit in area of Turgay hollow. *Protection of a nature and planting, M., 4: 117-120. (In Russian).*

Chelzov-Bebutov A.M., 1978a. A note about the population and bird fauna of not well known areas of Northern Kazakhstan. *Biology of birds in Kazakhstan. Proc. Inst. Zool. AS KazSSR, Alma-Ata, 38: 120-126. (In Russian).*

Chelzov-Bebutov A.M., 1978b. About northern limit of Desert Warbler and Rufous Bush Robin distribution in Aral Karakum. *Biology of birds in Kazakhstan. Proc. Inst. Zool. AS KazSSR, Alma-Ata, 38: 155-156. (In Russian).*

Cramp S., Simmons K. E. (ed)., 1982. The Birds of the Western Palearctic, *Oxford, 1: 1-722.*

Cramp S. (ed)., 1985. The Birds of the Western Palearctic, *Oxford, 4: 1-1064.*

Cramp S. (ed)., 1992. The Birds of the Western Palearctic, *Oxford, 6: 1-960.*

Davygora A.V., Kornev S.V., Gavluyk E.V., Korshikov L.V., 1992. Modern condition and problems of protection rare waterfowl of a steppe zone of Southern Ural. *Rare species of plants and animals of Orenburg area, Orenburg: 33-40. (In Russian).*

Debelo P.V., 1991. Modern numbers of rare birds of the Ural area. *Materials of 10-th All-Union Ornithol. Conference, Minsk, 2 (1): 182-183. (In Russian).*

Debelo P.V., 1995. Dynamics of Demoiselle Crane area in Northern Caspian Sea. *Fauna of Southern Ural and Northern Caspian Sea, Orenburg: 61-63. (In Russian).*

Debelo P.V., Moroz V.V., Shevchenko V.L., 1999. Rare birds of Volga-Ural territory. *Problems of protection and steady use of a bio-diversity of fauna of Kazakhstan, Almaty: 61-62. (In Russian).*

Dementiev G.P., 1951. Order Accipitres or Falconiformes. *Birds of the Soviet Union, M., 1: 70-341. (In Russian).*

Dementiev G.P., Gladkov N.A. (eds), 1951. *Birds of Soviet Union, M., 1: 1-652. (In Russian).*

Dementiev G.P., Gladkov N.A. (eds), 1951. *Birds of Soviet Union, M., 2: 1-480. (In Russian).*

Dementiev G.P., Gladkov N.A. (eds), 1951. *Birds of Soviet Union, M., 3: 1-680. (In Russian).*

Dementiev G.P., Gladkov N.A. (eds), 1952. *Birds of Soviet Union, M., 4: 1-640. (In Russian).*

Dementiev G.P., Gladkov N.A. (eds), 1954. *Birds of Soviet Union, M., 5: 1-803. (In Russian).*

Dementiev G.P., Gladkov N.A. (eds), 1954. *Birds of Soviet Union, M., 6: 1-792. (In Russian).*

Derevjagin P. Ya., 1955. About breeding of Siberian Goldfinch in Almaty. *Zool. J., 34 (2): 470-471. (In Russian).*

Djubanov A.A., Troshchenko B.V., 1978. About strugglers of *Neophron percnopterus* in Northern Caspian area. *Vestnik Zool., 3: 88. (In Russian).*

Dolgushin I.A., 1939. To ornitho-fauna of lower current of Chu river. *Izvestia of Kazakh Branch AS USSR, sector zool., 1: 43-70. (In Russian).*

Dolgushin I.A., 1948a. The list of birds of Kazakhstan. *Izvestia AS KazSSR, sector parasithol., 5: 133-156. (In Russian).*

Dolgushin I.A., 1948b. About bird fauna of Mangyshlak peninsula. *Izvestia AS KazSSR, sector zool., 8: 131-160. (In Russian).*

Dolgushin I.A., 1948c. Additions to the list of birds of Kazakhstan. *Izvestia AS KazSSR, sector zool., 8: 220. (In Russian).*

Dolgushin I.A., 1951. About bird fauna of Karatau. *Izvestia AS KazSSR, sector zool., 10: 72-117. (In Russian).*

Dolgushin I.A., 1960. Birds of Kazakhstan, *Alma-Ata, 1: 1-470. (In Russian).*

Dolgushin I.A., 1962a. Order Limicolae. *Birds of Kazakhstan, Alma-Ata, 2: 40-245. (In Russian).*

Dolgushin I.A., 1962b. Order Lariformes. *Birds of Kazakhstan, Alma-Ata, 2: 246-327. (In Russian).*

Dolgushin I.A., 1962c. Order Columbae. *Birds of Kazakhstan, Alma-Ata, 2: 328-369. (In Russian).*

Dolgushin I.A., 2002. The materials to avifauna of Saur, Manrak and Chilicty valley. *Selevinia, 1-4: 61-72.*

Drobovzev V.I., Vilkov V.S., 1997a. Interesting birds in the Northern Kazakhstan region. *Materials to distribution of birds on Ural, in Priural'e and Western Siberia, Yekaterinburgh: 61-62. (In Russian).*

Drobovzev V.I., Vilkov V.S., 1997b. Ornitho-fauna of Anseriformes of the Northern Kazakhstan region. *Materials to distribution of birds on Ural, in Priural'e and Western Siberia, Ekaterinburgh: 57-61. (In Russian).*

Drobovzev V.I., Vilkov V.S., Sinizyn V.V., 1998. Ciconiiformes and Cranes in the Northern Kazakhstan region. *Materials to distribution of birds on Ural, in Priural'e and Western Siberia, Yekaterinburgh: 24-26. (In Russian).*

Drobovzev V.I., Koshelev A.I, 1980. White-headed Duck. *Nature, 9: 102-104. (In Russian).*

Dubinin N.P., Toropanova T.A., 1956. Birds of woods of Ural river valley, *M., (2-3): 1-37. (In Russian).*

Dubrovsky Yu.A., 1961. Note about distribution of some birds in the Aktyubinsk steppes. *Proc. Inst. Zool. AS KazSSR, Alma-Ata, 15: 192-197. (In Russian).*

Dunajewski A., 1937. Bemerkungen uber einige mittelasiatische Vogel. *Acta ornithologica Musei zoologici Polonici, 2(6): 69-86.*

Duysebaeva T.N, 2002. Black Lark. *Kazakhstan Ornithol. Bull. 2002, Almaty: 103. (In Russian).*

Dvoryanov V.N., 2002. Godlewski's Bunting. *Kazakhstan Ornithol. Bull. 2002, Almaty: 120. (In Russian).*

Dzhanyspaev A.D., 2001. Some observations on Woodcock (*Scolopax rusticola* L.) in Almatinskiy Reserve (Zailiyskiy Alatau). *Selevinia, 1-4: 191-193. (In Russian).*

Dzhanyspaev A.D., 2002a. First nest of Ibisbill on Issyk river. *Kazakhstan Ornithol. Bull. 2002, Almaty: 84. (In Russian).*

Dzhanyspaev A.D., 2002b. About nests of Grasshopper Warbler in Zailiyskiy Alatau. *Kazakhstan Ornithol. Bull. 2002, Almaty: 125. (In Russian).*

Dzhanyspaev A.D., 2002c. Great Rose Finch. *Kazakhstan Ornithol. Bull. 2002, Almaty: 90. (In Russian).*

Dzhanyspaev A.D., 2004a. Some results on birdwatching in Almaty region. *Kazakhstan Ornithol. Bull. 2003, Almaty: 117-119. (In Russian).*

Dzhanyspaev A.D., 2004b. Eurasian Curlew *Numenius arquata*. *Kazakhstan Ornithol. Bull. 2003, Almaty: 170. (In Russian).*

Dzhanyspaev A.D., 2004c. Snowfinch *Montifringilla nivalis*. *Kazakhstan Ornithol. Bull. 2003, Almaty: 197. (In Russian).*

Dzhanyspaev A.D., Belyalov O.V., 1991. The brief messages about Himalayan Griffon in Zailiyskiy Alatau … *Rare birds and animals of Kazakhstan, Alma-Ata: 113-114. (In Russian).*

Dzhanyspaev A.D., Belyalov O.V., 1997. Spring ornitho-fauna of southern part of Almaty state Reserve. *Biological and landscape diversity of Republic of Kazakhstan, Almaty: 87-88. (In Russian).*

Dzhanyspaev A.D., Kovalenko A.V., Belyalov O.V., 2004. White-throated Robin *Irania gutturalis*. *Kazakhstan Ornithol. Bull. 2003, Almaty: 191. (In Russian).*

Dzhubanov A.A., 1971. About settling of Red-headed Bunting (*Emberiza bruniceps* Brandt) in Northern Caspian territory. *Materials on flora and vegetation of Northern Caspian territory, L., 5: 2. (In Russian).*

Dyakin G.Yu., 1991. The brief messages about Glossy Ibis. On Ustyurt… *Rare birds and animals of Kazakhstan, Alma-Ata: 49. (In Russian).*

Egorov V.A., 1999. Night Heron and Mynah - new species of the Eastern Kazakhstan region. *Problems of protection and steady use of a bio-diversity of fauna of Kazakhstan, Almaty: 63-64. (In Russian).*

Egorov V.A., 2001. Materials to ornithofauna of Sibinslikh lakes and Kok-tau mountains (Kalbinskiy Altai). *Selevinia, 1-4: 66-76. (In Russian).*

Egorov V.A., Borisov A.I., 1979. The new data about bird breeding in Kalbinskoye upland. *Nature and economy of Eastern Kazakhstan, Alma-Ata: 131-139. (In Russian).*

Egorov V.A., Samusev I.F., Berezovikov N.N., 2001. Water birds of Kalbinskiy Altai (Eastern Kazakhstan). *Russ. Ornithol. J., 165: 935-951. (In Russian).*

Erjanov N.T., Kapitonov V.I., Berber A.P., Osipova S.A., 2004. Sparrowhawk in Kazakh upland. *Fauna of Kazakhstan and contiguous countries on century boundary, Almaty: 104-106. (In Russian).*

Erokhov S.N., 1991. The brief messages on Squacco Heron. On Sorbulak lake… *Rare birds and animals of Kazakhstan, Alma-Ata: 40. (In Russian).*

Erokhov S.N., 1997. Occurrence of Brent Goose (Branta bernicla) in south-eastern Kazakhstan in the winter period. *Casarca, 3: 160. (In Russian).*

Erokhov S.N., 1999. Preliminary results of numbers monitoring of geese during autumn migration through the Kustanay region (Northern Kazakhstan). *Problems of protection and steady use of fauna bio-diversity of Kazakhstan, Almaty: 64-65. (In Russian).*

Erokhov S.N., 2002a. Expedition. 3. Atyrau area. *Kazakhstan Ornithol. Bull. 2002, Almaty: 9. (In Russian).*

Erokhov S.N., 2002b. Bean Goose. *Kazakhstan Ornithol. Bull. 2002, Almaty: 94-95. (In Russian).*

Erokhov S.N., 2002c. Expedition. 19. Chushkakol. *Kazakhstan Ornithol. Bull. 2002, Almaty: 22. (In Russian).*

Erokhov S.N., 2002d. Velvet Scoter. *Kazakhstan Ornithol. Bull. 2002, Almaty: 58. (In Russian).*

Erokhov S.N., 2002e. Pygmy Cormorant. *Kazakhstan Ornithol. Bull. 2002, Almaty: 94. (In Russian).*

Erokhov S.N., 2002f. Some observations on birds in tower Assa river. *Kazakhstan Ornithol. Bull. 2002, Almaty: 100. (In Russian).*

Erokhov S.N., 2004. Bird observation on north part of Aral Sea. *Kazakhstan Ornithol. Bull. 2003, Almaty: 40-41. (In Russian).*

Erokhov S.N., Belyalov O.V., 2004. Count of wintering birds on reservoirs of Southern Kazakhstan in December 2003. *Kazakhstan Ornithol. Bull. 2003, Almaty: 109-111. (In Russian).*

Erokhov S.N., Belyalov O.V., Karpov F.F., 2005. Numbers of waterfowl on winter in Almaty and Southern Kazakhstan region in 2004. *Kazakhstan Ornithol. Bull. 2004, Almaty: 49-51. (In Russian).*

Erokhov S.N., Berezovikov N.N., 2000. The first occurrence of Barnacle Goose in Kazakhstan. *Casarca, 6: 367-369. (In Russian).*

Erokhov S.N., Berezovikov N.N., 2001. Summer ornitho-fauna of lakes of Kurgaldzhin Reserve. *Materials to bird distribution on Ural, in Priural'e and Western Siberia, Ekaterinburgh: 70-84. (In Russian).*

Erokhov S.N., Berezovikov N.N., 2002. Expedition. 6. Kustanay area. *Kazakhstan Ornithol. Bull. 2002, Almaty: 11-13. (In Russian).*

Erokhov S.N., Gavrilov E.I., Khrokov V.V, 1978. New waders in south-eastern Kazakhstan. *Izvestia AS KazSSR, ser. biol., 6: 22-24. (In Russian).*

Erokhov S.N., Gavrilov E.I., Salmina O.S., 1991. The brief messages on White Stork. On left shore of Ile river… *Rare birds and animals of Kazakhstan, Alma-Ata: 53. (In Russian).*

Eszhanov B., 1991. The brief messages about Glossy Ibis. On Balkhash lake… *Rare birds and animals of Kazakhstan, Alma-Ata: 50. (In Russian).*

Eversmann E., 1866. A natural history of birds of the Orenburg territory. *A natural history of the Orenburg territory, Kazan, 3: 1-270. (In Russian).*

Formozov A.N., 1959. About movement and fluctuation of distribution limits of mammals and birds. *Geography of the population of terrestrial animals and methods of its study, M.,: 172-196. (In Russian).*

Garbuzov V.K., 2005. About birds of Bolshie Barsuki sands, Mugodjary and Emba valley. *Kazakhstan Ornithol. Bull. 2004, Almaty: 207-210. (In Russian).*

Gavlyuk E.V., Davygora A.V., 1989. Occurrence of Yellow-breasted Bunting in Ural steppe. *Distribution and fauna of Ural birds, Orenburg: 10. (In Russian).*

Gavrilov A.E., 2005. Results of Chokpak ornithological station work. *Kazakhstan Ornithol. Bull. 2004, Almaty: 55-56. (In Russian).*

Gavrilov A.E., 2005a. Results of ringing in 2004. *Kazakhstan Ornithol. Bull. 2004, Almaty: 187-190. (In Russian).*

Gavrilov A.E., Kolbintsev V.G., 2002a. Expedition. 17. Kyzylkol. *Kazakhstan Ornithol. Bull. 2002, Almaty: 20. (In Russian).*

Gavrilov A.E., Kolbintsev V.G., 2002b. Griffon Vulture. *Kazakhstan Ornithol. Bull. 2002, Almaty: 99. (In Russian).*

Gavrilov A.E., Kolbintsev V.G., 2004. Data on birds of Karatau and Western Tien Shan in 2003. *Kazakhstan Ornithol. Bull. 2003, Almaty: 97-99. (In Russian).*

Gavrilov A.E., Zhatkanbaev A.Dz., 1995. To distribution of Penduline Tit in Kazakhstan. *Ornithology, 26: 178. (In Russian).*

Gavrilov E.I., 1961. The new data on birds of Western Kazakhstan. *Materials on terrestrial vertebrates of Kazakhstan. Proc. Zool. Inst. AS KazSSR, 15: 46-49. (In Russian).*

Gavrilov E.I., 1974a. Family Oriolidae. *Birds of Kazakhstan, Alma-Ata, 5: 5-14. (In Russian).*

Gavrilov E.I., 1974b. Genus Rhodospiza. *Birds of Kazakhstan, Alma-Ata, 5: 271-277. (In Russian).*

Gavrilov E.I., 1974c. Occurrence of White's Thrush (*Zoothera dauma* Lath.) on breeding in Kazakhstan. *Vestnik Zool., 1: 84-85. (In Russian).*

Gavrilov E.I., 1981. Bird migration in lower current of Chu river in 1967. *Migration of birds in Asia, Ashghabad: 116-144. (In Russian).*

Gavrilov E.I., 1986. The brief message about Needle-tailed Swift. *Rare, disappearing and not well known birds of USSR, M.: 70. (In Russian).*

Gavrilov E.I., 1989. Common Quail – unique bird. *Hunt and hunting management, M., 9: 11. (In Russian).*

Gavrilov E.I., 1993a. The first occurrence of Siberian House Martin in Kazakhstan. *Fauna and biology of birds in Kazakhstan, Almaty: 187-188. (In Russian).*

Gavrilov E.I., 1993b. Variability of Swallow colour flying in foothills of Western Tien Shan. *Selevinia, 1: 56-67. (In Russian).*

Gavrilov E.I., 1993c. Order Pterocletiformes. *Birds of Russia and nearby regions, M.: 7-46. (In Russian).*

Gavrilov E.I., 2002. Birdwatching. *Kazakhstan Ornithol. Bull. 2002, Almaty: 43. (In Russian).*

Gavrilov E.I., 2004. Variability of Sparrowhawk wing-form and wing-length on autumn migration in foothills of Western Tien Shan. *Migration of birds in Asia, Almaty, 12: 117-125. (In Russian).*

Gavrilov E.I., Belyalov O.V., Dzhanyspaev A.D. 1993. The first occurrence of Black-backed Citrine Wagtail on breeding in Kazakhstan. *Selevinia, 1: 92-93. (In Russian).*

Gavrilov E.I., Berezovskiy V.G., Borodikhin I.F., Sema A.M., Rodionov E.F., 1976. Observations of autumn bird migration in Betpak-Dala. *Migration of birds in Asia, Alma-Ata: 234-243. (In Russian).*

Gavrilov E.I., Borodikhin I.F., Scherbakov B.V., 1982. Distribution of Laughing and Collared Doves in Kazakhstan. *Vestnik Zool., 4: 55-59. (In Russian).*

Gavrilov E.I., Davletbakov A., Dikhanbaev A., Kovalenko A.V., 2001. The first flock of White Stork in Southern Kazakhstan. *Selevinia, 1-4: 202. (In Russian).*

Gavrilov E., Erochov S., Griaznov A., Brokhovich S., Goloshchapov A., 1995. Number evaluation of migratory sparrows inhabiting south-eastern Kazakhstan and northern Kirgizstan. *Nestling mortality of Granivorous birds due to microorganisms and toxic substances: Synthesis, Warszawa: 365-380.*

Gavrilov E.I., Gavrilov A.E., Kovalenko A.V., Dikhanbaev A.N., Sarsekova K.A., 2002. Expedition. 15. Chokpak ornithological station. *Kazakhstan Ornithol. Bull. 2002, Almaty: 18-19. (In Russian).*

Gavrilov E.I., Grachev Yu.N., 2004. New sub-species of Oriental Turtle Dove for Kazakhstan and Middle Asia. *Migration of birds in Asia, Almaty, 12: 213-215.*

Gavrilov E.I., Gistsov A. P., 1985. Seasonal bird migration in foothills of Western Tien Shan, *Alma-Ata: 1-224. (In Russian).*

Gavrilov E.I., Kovshar A.F., 1967. The first nest of Red-breasted Rose Finch. *Bull. AS KazSSR, 9 (269): 70-71. (In Russian).*

Gavrilov E.I., Kovshar A.F., 1968. About biology of Rocky Rose Finch (*Pyrrhospiza punicea* Hodgs.). *News of ornithology of Kazakhstan. Proc. Zool. Inst. of AS KazSS, 29: 41-49. (In Russian).*

Gavrilov E.I., Naglov V.A., Fedosenko A.K., Shevchenko V.L., Tatarinova O.M., 1968. About ornitho-fauna of Volga-Ural territory. *News of ornithology of Kazakhstan. Proc. Zool. Inst. of AS KazSSR, 29: 153-207. (In Russian).*

Gavrilov E.I., Rodionov E.F., 1968. The first occurrence of Redstart on breeding in Tien Shan. *News of ornithology of Kazakhstan. Proc. Zool. Inst. of AS KazSSR, 29: 217. (In Russian).*

Gavrilov E.I., Savchenko A.P., 1991. About species independence of Pale Sand Martin (*Riparia diluta* Sharpe et Wyatt, 1893). *Bull. Mosk. Soc. of Nat. Invest., Biol. Section, 96(4): 34-44. (In Russian).*

Gavrin V.F., 1962. Order Striges. *Birds of Kazakhstan, Alma-Ata, 2: 708-779. (In Russian).*

Gaydenko N.P., 1981. To a question of raptor protection in forest steppe of Kustanay area. *Rational use and protection of natural resources of Northern and Central Kazakhstan, Alma-Ata: 179-180. (In Russian).*

Gistsov A. P., 1978. Winter structure of avia-fauna and its distribution on Barsa-Kelmes I. *Biology of birds in Kazakhstan. Proc. Zool. Inst., Alma-Ata, 38: 147-149. (In Russian).*

Gistsov A.P., Auezov E.M., 1991. Numbers and distribution of common and rare water birds on north-east Caspian shore. *Materials of 10-th All-Union ornithol. Conferences, Minsk, 1 (2): 147-148. (In Russian).*

Gistsov A. P., Berezovikov N.N., 1995. A modern fauna condition of the Ural river delta. *Fauna of Southern Ural and Northern Caspian Sea, Orenburg: 7-9. (In Russian).*

Gladkov N.A., Zaletaev V.C., 1956. About bird fauna of Mangyshlak and Mangistauskikh islands. *Proc. Biology Inst. of AS TurkSSR, 4: 120-164. (In Russian).*

Goloschapov A.B., 1993. About wintering of Black-headed Penduline Tit in south-eastern Kazakhstan. *Fauna and biology of birds in Kazakhstan, Almaty: 188. (In Russian).*

Gordienko N.S., 1983. To avia-fauna of Naurzum Reserve. *Ornithology, 18: 164-165. (In Russian).*

Gordienko N.S., 1986a. Birds and man: searches of the compromise. *Study of birds USSR, their protection and rational use, L., 1: 168-169. (In Russian).*

Gordienko N.S., 1986b. The brief messages about Steppe Eagle. In Naurzum steppe... *Rare animals of Kazakhstan, Alma-Ata: 128. (In Russian).*

Gordienko N.S., 1991. The brief messages on Squacco Heron. In Naurzum Reserve… *Rare birds and animals of Kazakhstan, Alma-Ata: 40. (In Russian).*

Gordienko N.S., Drobovzev V.I., Koshelev A.I., 1986. Biology of White-headed Duck in Northern Kazakhstan and in the south of Western Siberia. *Rare, disappearing and not well known birds of USSR, M.: 15. (In Russian).*

Gordienko N.S., Moiseev A.P., Smetana N.M., 1980. Additions to avia-fauna of Naurzum Reserve. *Biology of birds of Naurzum Reserve, Alma-Ata: 115-119. (In Russian).*

Grachev A.V., 2002a. Pheasant. *Kazakhstan Ornithol. Bull. 2002, Almaty: 99. (In Russian).*

Grachev A.V., 2002b. Great Bustard. *Kazakhstan Ornithol. Bull. 2002, Almaty: 76. (In Russian).*

Grachev A.V., Eszhanov B., 1999. About rare birds of the Aktyubinsk area. *Problems of protection and steady use of fauna biodiversity of Kazakhstan, Almaty: 59-60. (In Russian).*

Grachev V.A., 1953. Occurrence of Bar-headed Goose (*Eulabeia indica* Lath.) in Almatinskiy region. *Bull. AS KazSSR, ser. biol., 8: 150-151. (In Russian).*

Grachev V.A., 1954. Lesser Sand Plover on northern coast of the Aral Sea. *Nature, 7: 117-118. (In Russian).*

Grachev V.A., 1960. About wintering of Spanish Sparrow in Ile river delta. *Proc. Zool. Inst. of AS KazSSR, 3: 180. (In Russian).*

Grachev V.A., 1965. New occurrence of Ibisbill in Tien Shan. *News of ornithology. Materials of Fourth All-Union ornithol. Conference, Alma-Ata: 97-99. (In Russian).*

Grachev V.A., 1968. White-winged Tern on Alakol' lake. *News of ornithology of Kazakhstan. Proc. Zool. Inst. AS KazSSR, Alma-Ata, 29:220. (In Russian).*

Grachev V.A., 2001. Wintering birds in environs of Aral'sk town. *Selevinia, 1-4: 189-191. (In Russian).*

Grachev Yu.N., 1983. About Woodcock breeding in valley of middle current Chu. *Birds of Siberia, Gorno-Altaisk: 168. (In Russian).*

Gubin B.M., 1989a. Addition to ornitho-fauna of Aksu-Dzhabagly Reserve. *Ecological aspects of study, practical use and protection of birds in mountain eco-systems, Frunze: 23-25. (In Russian).*

Gubin B.M., 1989b. About new and rare breeding birds in Talasskiy Alatau (Western Tien Shan). *Ecological aspects of study, practical use and protection of birds in mountain eco-systems, Frunze: 25-27. (In Russian).*

Gubin B.M., 2002a. Expedition. 1. Mangyshlak and Ustyurt. *Kazakhstan Ornithol. Bull. 2002, Almaty: 7. (In Russian).*

Gubin B.M, 2002b. Coal Tit. *Kazakhstan Ornithol. Bull. 2002, Almaty: 114. (In Russian).*

Gubin B.M., 2002c. Record of Ibisbill on Zhenishke valley (Chilik river). *Kazakhstan Ornithol. Bull. 2002, Almaty: 82-84. (In Russian).*

Gubin B.M., 2002d. Crimson-winged Finch. *Kazakhstan Ornithol. Bull. 2002, Almaty: 119. (In Russian).*

Gubin B.M., 2002e. Dunnock. *Kazakhstan Ornithol. Bull. 2002, Almaty: 105. (In Russian).*

Gubin B.M, 2002f. Great Rose Finch. *Kazakhstan Ornithol. Bull. 2002, Almaty: 90. (In Russian).*

Gubin B.M., Gavrilov E.I., Khrokov V.V, 1977. Ornithological news in lower current of Ural river. *Migration of birds in Asia, Novosibirsk: 209-211. (In Russian).*

Gubin B.M., Karpov F.F, 1994. Features of breeding of mountain population of Upcher's Warbler in Malyy Karatau (Kazakhstan). *Bull. Mosk. Soc. of Nat. Invest., biol. section, 99(4): 37-46. (In Russian).*

Gubin B.M., Levin A.S., 1980. Seasonal bird migration on the middle current of Ural river (Kazakhstan). *Migration of birds in Asia, Dushanbe: 154-191. (In Russian).*

Gubin B.M., Levin A.S., 1982. About biology of new and rare breeding birds of northern current of Ural river. *Izvestia AS KazSSR, section biol., 5: 25-29. (In Russian).*

Gubin B.M., Sklyarenko S.L., 1990a. About biology of Upcher's Warbler in Eastern Kyzylkum. *Izvestia AS KazSSR, section biol., 4: 34-39. (In Russian).*

Gubin B.M., Sklyarenko S.L., 1990b. Blue-cheeked Bee-eater in the Kyzylkum. *Bull. Mosc. Soc. Nat. Invest., biol. section, 95(1): 70-75. (In Russian).*

Gubin B.M., Sklyarenko S.L., 1991. The brief messages on Blue Whistling Thrush. In Eastern Kyzylkum…. *Rare birds and animals of Kazakhstan, Alma-Ata: 254. (In Russian).*

Gusenko V.V., 2002. Great Rose Finch. *Kazakhstan Ornithol. Bull. 2002, Almaty: 90. (In Russian).*

Gvozdev E.V. (ed.), 1989. The book of genetic fund of Kazakh SSR fauna, *Alma-Ata: 1-214. (In Russian).*

Gyngazov A.M., Milovidov S.P., 1977. Ornitho-fauna of the Western Siberian plain, *Tomsk: 1-350. (In Russian).*

Hansson B., Gavrilov E., Gavrilov A., 2003. Hybridisation between great reed warblers Acrocephalus arundinaceus and clamorous reed warblers A. stentoreus: morphological and molecular evidence. *Avian Science, 3(2-3): 145-151.*

Hartert E., 1910. Die Vцgel der palearktischen Fauna, *Berlin, 1: 1-1090.*

Ivashchenko A.A., 2004. Motacilla citreola calcarata. *Kazakhstan Ornithol. Bull. 2003, Almaty: 181. (In Russian).*

Johansen Hans, 1955. Die Vogelfauna Westsibiriens. *J. fьr Ornithologie, 96 (1): 58-91.*

Kalabin S.Yu., 1984. Passage of Arctic Skua in Uzbekistan. *Migration birds in Asia, Tashkent, 9: 129. (In Russian).*

Kapitonov V.I., Lobachev Yu.S., Spivakova L.V., 2004. The Asiatic Dowitcher: first report about breeding in Kazakhstan. *Actual problems of ecology, Karaganda, 1: 145-146. (In Russian).*

Karpov F.F., 1991. About Stock Dove winters in Kazakhstan. *Ornithology, 25: 160-161. (In Russian).*

Karpov F.F., 1995. New about Stock Dove (*Columba oenas oenas* L.) wintering in south-eastern Kazakhstan. *Selevinia, 2: 84. (In Russian).*

Karpov F.F., 2002. Crimson-winged Finch. *Kazakhstan Ornithol. Bull. 2002, Almaty: 118-119. (In Russian).*

Karpov F.F., 2004. Ornithological observations in North-Eastern of Caspian Sea in October 2003. *Kazakhstan Ornithol. Bull. 2003, Almaty: 17-19. (In Russian).*

Karpov F.F., 2004a. Common Pheasant *Phasianus colchicus*. *Kazakhstan Ornithol. Bull. 2003, Almaty: 168-169. (In Russian).*

Karpov F.F., 2005. New birds of Almaty. *Kazakhstan Ornithol. Bull. 2004, Almaty: 195.*

Karpov F.F., Belyalov O.V., 2002a. Paradise Flycatcher. *Kazakhstan Ornithol. Bull. 2002, Almaty: 110. (In Russian).*

Karpov F.F., Belyalov O.V., 2002b. Crimson-winged Finch. *Kazakhstan Ornithol. Bull. 2002, Almaty: 119. (In Russian).*

Karpov F.F., Belyalov O.V., 2002c. White-throated Pied Wheatear. *Kazakhstan Ornithol. Bull. 2002, Almaty: 109. (In Russian).*

Karpov F.F., Belyalov O.V., 2005. About hybridization of Daurian and Grey Partridges in Almaty region. *Kazakhstan Ornithol. Bull. 2004, Almaty: 175-177. (In Russian).*

Karpov F.F., Belyalov O.V., Kovshar V.A., 2004. First record of the Lesser White-fronted Goose in South-Eastern Kazakhstan. *Kazakhstan Ornithol. Bull. 2003, Almaty: 135. (In Russian).*

Karpov F.F., Khrokov V.V., Besedin E.V., 2002a. Expedition. 8. Borovoye. *Kazakhstan Ornithol. Bull. 2002, Almaty: 14-15. (In Russian).*

Karpov F.F., Khrokov V.V., Besedin E.V., 2002b. Demoiselle Crane. *Kazakhstan Ornithol. Bull. 2002, Almaty: 74. (In Russian).*

Karpov F.F., Kovalenko A.V., Belyalov O.V., 2004. Paradise Flycatcher *Terpsiphone paradisi*. *Kazakhstan Ornithol. Bull. 2003, Almaty: 190. (In Russian).*

Karpov F.F., Panov A.V., 2004. Some results of trip on Ivanovskiy ridge (Western Altai). *Kazakhstan Ornithol. Bull. 2003, Almaty: 63-64. (In Russian).*

Karyakin I.V., Novikova L.M., Pajtnkov A.S., 2004. Results of Russian expedition on West of Kazakhstan in 2003. *Kazakhstan Ornithol. Bull. 2003, Almaty: 24-279. (In Russian).*

Kashkarov D.Yu., Ostapenko M.M., Tretyakov G.P., 1974. Addition to bird list of Kyzylkum desert. *Ecology and morphology of animals. Proceed. Samarkand State Univ., new series, 255: 84-94. (In Russian).*

Khakhlov V.A., 1928. Zaysan hollow and Tarbagatay. Zoo-geographical sketch. Birds. *Izvestia of Tomsk Univ., Tomsk, 1 (81): 1-157. (In Russian).*

Khakhlov V.A., Selevin V.A., 1928. The bird list of vicinities of Semipalatinsk. *Uragus, 7 (2): 19-34. (In Russian).*

Khrokov V.V, 1986. Great Bustard. The brief messages. At Kurgaldzhin lake… *Bustards and way of their preservation, M.: 63. (In Russian).*

Khrokov V.V, 1991. White-tailed Plover. *Red Book of Kazakh SSR. Animals, Alma-Ata, 1: 173-175. (In Russian).*

Khrokov V.V, Auezov E.M., Buketov M.E., 1997. Colonial breeding water birds of Turgay State Reserve. *Biological and landscape diversity of Republic of Kazakhstan, Almaty: 83-84. (In Russian).*

Khrokov V.V, Auezov E.M., Buketov M.E., Grachev A.V., 1990. New and rare birds on south of Turgay hollow. *Ornithology, 24: 164-165. (In Russian).*

Khrokov V.V, Berezovikov N.N., 1990. About owl fauna of upper Irtysh river. *Zoological problems of Altai Territory. Barnaul: 54-55. (In Russian).*

Khrokov V.V, Berezovikov N.N., Karpov F.F., Kovalenko A.V., 1993. Waders of Utva-Ilek territory. *Russ. Ornithol. J., 2 (2): 191-199. (In Russian).*

Khrokov V.V, Erokhov S.N., Lopatin V.V., Gavrilov E.I., Gavrilov A.E., Karpov F.F., 1993. Ornithological news in Alakol' hollow. *Fauna and biology of birds of Kazakhstan, Almaty: 194-196. (In Russian).*

Khrokov V.V, Gavrilov E.I., 1978. Migration of birds in lower current of Ural river. *Migration of birds in Asia, Alma-Ata: 70-101. (In Russian).*

Khrokov V.V, Gavrilov E.I., Erokhov S.N., 1980. Red-necked Stint - new species in bird fauna of Kazakhstan. *Izvestia AS KazSSR, ser. biol., 3: 82-83. (In Russian).*

Khrokov V.V, Gavrilov E.I., Erokhov S.N., Lopatin V.V., Gavrilov A.E., 1991. Ornithological news in lower current of Sarysu river. *Ornithology, 25: 176. (In Russian).*

Khrokov V.V, Kovshar A.F., 1993. About breeding of Black-winged Stilt in the Pavlodar area. *Selevinia, 1: 85-86. (In Russian).*

Khrokov V.V., Krivizkiy I.A., Volkov E.N., 1986. The Ruff in Kurgaldzhin Reserve. *Phenological investigations in state Reserves, Alma-Ata: 110-111. (In Russian).*

Khrokov V.V, Moiseev A.P., Moskalev A.G., 1977. About new and rare birds of Kurgaldzhin Reserve. *Migration of birds in Asia, Novosibirsk: 212-215. (In Russian).*

Khrokov V.V, Samusev I.F., 1990. About waders of Irtysh valley in vicinities of Ust'-Kamenogorsk. *Zoological problems of Altai Territory, Barnaul: 52-53. (In Russian).*

Khrokov V.V, Shcherbakov B.V., Zuliy V.A., Buketov M.E., 2004. Some bird observations in Karkaralinsk National Park in 2003. *Kazakhstan Ornithol. Bull. 2003, Almaty: 62. (In Russian).*

Klimov A.S., 1991. White-tailed Plover in Northeast Caspian. *Rare birds and animals of Kazakhstan, Alma-Ata: 172-174. (In Russian).*

Knistautas A.Yu., 2001. About meeting of Marbled Teal (*Anas angustirostris*) in Southern Kazakhstan. *Selevinia, 1-4: 203. (In Russian).*

Kolbintsev V.G., 1984. Tendency of Paradise Flycatcher settling in Western Tien Shan. *The 8 All-Union zoo-geographical Conference, M.: 74-75. (In Russian).*

Kolbintsev V.G., 1991a. Paradise Flycatcher in Malyy Karatau (Southern Kazakhstan). *Rare birds and animals of Kazakhstan, Alma-Ata: 223-246. (In Russian).*

Kolbintsev V.G., 1991b. Brief messages on Blue Whistling Thrush. In Small Karatau…. *Rare birds and animals of Kazakhstan, Alma-Ata: 256. (In Russian).*

Kolbintsev V.G., 1994. Winter occurrence of Snow Goose (*Chen caerulescens* L., 1758) on the south of Kazakhstan. *Selevinia, 2 (1): 72. (In Russian).*

Kolbintsev V.G., 1995. A new occurrence of Himalayan Treecreeper in the south of Kazakhstan. *Selevinia, 3 (3): 44. (In Russian).*

Kolbintsev V.G., 1997. Occurrence of rare bird species in foothills of Western Tien Shan. *Biological and landscape diversity of Kazakhstan Republic, Almaty: 142. (In Russian).*

Kolbintsev V.G., 1999. To bird fauna of western part of Talasskiy Alatau (Southern Kazakhstan). *Problems of protection and steady use of a bio-diversity of Kazakhstan fauna, Almaty: 73-74. (In Russian).*

Kolbintsev V.G., 2002. Crimson-winged Finch. *Kazakhstan Ornithol. Bull. 2002, Almaty: 118. (In Russian).*

Kolbintsev V.G., Chalikova E.S., 2002a. Expedition. 18. Karatau. *Kazakhstan Ornithol. Bull. 2002, Almaty: 21-22. (In Russian).*

Kolbintsev V.G., Chalikova E.S., 2002b. Blue Whistling Thrush. *Kazakhstan Ornithol. Bull. 2002, Almaty: 90. (In Russian).*

Korelov M.N., 1948. The new data on distribution of Red-necked Grebe in Kazakhstan. *Izvestia AS KazSSR, sector zool., 8: 122-127. (In Russian).*

Korelov M.N., 1956. Materials to aviafauna of Ketmen ridge (Tien San). *Proc. Inst. Zool., 6: 109-157. (In Russian).*

Korelov M.N., 1962. Order Falconiformes. *Birds of Kazakhstan, Alma-Ata, 2: 488-707. (In Russian).*

Korelov M.N., 1964. Changes of area limits of southern bird species in Northern Tien Shan. *Hunting birds of Kazakhstan (fauna, ecology and practical importance), Alma-Ata: 142-156. (In Russian).*

Korelov M.N., 1970a. Order Cuculi. *Birds of Kazakhstan, Alma-Ata, 3: 9-21. (In Russian).*

Korelov M.N., 1970b. Order Macrochires. *Birds of Kazakhstan, Alma-Ata, 3: 130-150. (In Russian).*

Korelov M.N., 1970c. Order Coraciae. *Birds of Kazakhstan, Alma-Ata, 3: 38-77. (In Russian).*

Korelov M.N., 1970d. Family Alaudidae. *Birds of Kazakhstan, Alma-Ata, 3: 194-285. (In Russian).*

Korelov M.N., Pfander P.V., 1983. About new southern breeding of Goshawk. *Ecology of predatory birds, M.: 65-66. (In Russian).*

Korelov M.N., Pfeffer R.G., Pfander P.V., 1986. Barbary Falcon in Kazakhstan. *Rare animals of Kazakhstan, Alma-Ata: 166-168. (In Russian).*

Kornev S.V., 1989. About Blue-cheeked Bee-eater near Orenburg. *Distribution and fauna of birds of Ural, Orenburg: 16. (In Russian).*

Koshkin A.V., 2002. Additions to the birds' fauna of Kurgaldzhin nature Reserve. *Selevinia, 1-4: 127-130. (In Russian).*

Koshkin A.V., 2003. News in ornithofauna of Kurgaldzhin nature Reserve. *Russ. Ornithol. J., 240: 175-177. (In Russian).*

Koshkin A.V., 2004. Ornithological observation in Kurgaldzhin Reserve in 2003. *Kazakhstan Ornithol. Bull. 2003, Almaty: 54-56. (In Russian).*

Kovalenko A., 1991. The brief messages about Blue Whistling Thrush. In Alma-Ata.... *Rare birds and animals of Kazakhstan, Alma-Ata: 258. (In Russian).*

Kovalenko A.V., 2002a. Pigmy Owl. *Kazakhstan Ornithol. Bull. 2002, Almaty: 101. (In Russian).*

Kovalenko A.V., 2002b. Rock Pipit. *Kazakhstan Ornithol. Bull. 2002, Almaty: 104. (In Russian).*

Kovalenko A.V., 2002c. Pallas's Warbler. *Kazakhstan Ornithol. Bull. 2002, Almaty: 108. (In Russian).*

Kovalenko A.V., 2002d. About summer record of Swinhoe's Snipe (Gallinago megala) in Zailiyskiy Alatau. *Russ. Ornithol. J., 175: 107. (In Russian).*

Kovalenko A.V., 2005. Ornithological observation in area of Baykonur cosmodrom. *Kazakhstan Ornithol. Bull. 2004, Almaty: 45-48. (In Russian).*

Kovalenko A.V., 2005a. Bird observation in north-eastern Caspian in Seal Island and Tub-Karagan Cape area. *Kazakhstan Ornithol. Bull. 2004, Almaty: 10-11. (In Russian).*

Kovalenko A.V., 2005b. Bird observations in south-eastern and southern Kazakhstan. *Kazakhstan Ornithol. Bull. 2004, Almaty: 64-66. (In Russian).*

Kovalenko A.V., 2005c. Some bird observations with group "Ornitholidays" in Almaty region. *Kazakhstan Ornithol. 2004, Almaty: 137-139. (In Russian).*

Kovalenko A.V., Gavrilov E.I., Belyalov O.V., Karpov F.F., Annenkova S.Yu., 2002. Ornithological observations on Kyzylkol lake (Southern Kazakhstan) during seasonal migration. *Russ. Ornithol. J., 11 (199): 879-887. (In Russian).*

Kovalenko A.V., Gavrilov E.I., Gavrilov A.E., 2002a. White Pelican. *Kazakhstan Ornithol. Bull. 2002, Almaty: 51. (In Russian).*

Kovalenko A.V., Gavrilov E.I., 2002b. Spoonbill. *Kazakhstan Ornithol. Bull. 2002, Almaty: 53. (In Russian).*

Kovalenko A.V., Kovshar V.A., 2004. Observations with birdwatcher in Almaty and Akmola regions. *Kazakhstan Ornithol. Bull. 2003, Almaty: 121-125. (In Russian).*

Kovalenko A.V., Sklyarenko S.L., 2002a. Expedition. 24. Syugaty, Boguty, Turaygyr. *Kazakhstan Ornithol. Bull. 2002, Almaty: 26. (In Russian).*

Kovalenko A.V., Sklyarenko S.L., 2002b. Orphean Warbler. *Kazakhstan Ornithol. Bull. 2002, Almaty: 107 (In Russian).*

Kovalenko A.V., Sklyarenko S.L., 2002c. Hume's Lesser Whitethroat. *Kazakhstan Ornithol. Bull. 2002, Almaty: 107. (In Russian).*

Kovalenko A.V., Sklyarenko S.L., 2002d. Pine Bunting. *Kazakhstan Ornithol. Bull. 2002, Almaty: 120. (In Russian).*

Kovshar A.F., 1966. Birds of Talasskiy Alatau, *Alma-Ata: 1-374. (In Russian).*

Kovshar A.F., 1970. Family Muscicapidae. *Birds of Kazakhstan, Alma-Ata, 3: 424-452. (In Russian).*

Kovshar A.F., 1972. Materials on birds breeding in Kungey Alatau. *Ornithology, 10: 343-345. (In Russian).*

Kovshar A.F., 1974. Relict Gull. *Birds of Kazakhstan, Alma-Ata, 5: 407-411. (In Russian).*

Kovshar A.F., 1977. About two reproductive cycles in White-winged Grosbeak. *Izvestia AS KazSSR, ser. biol., 2: 25-28. (In Russian).*

Kovshar A.F., 1980. About Ibisbill (*Ibidorhyncha struthersii* Vigors) biology. *Bull. Mosk. Soc. Nat. Invest., biol. section, 85(5): 25-33. (In Russian).*

Kovshar A.F., 1984. Mynah at northern limits of Central Asia. *8 All-Union zoo-geogr. Conf., M.: 72-74. (In Russian).*

Kovshar A.F., 1987. About southern breeding limits of Demoiselle Crane in Kazakhstan and Central Asia. *Communications Baltic Commission Study Bird Migration, 19: 88-90. (In Russian).*

Kovshar A.F., 1988a. About northern area limit of Desert Finch in Betpak-Dala desert. *Ornithology, 23: 211-212. (In Russian).*

Kovshar A.F., 1988b. Paradise Flycatcher record in Betpak-Dala desert. *Ornithology, 23: 212. (In Russian).*

Kovshar A.F., 1989a. Settling of Common Mynah in highland of Northern Tien Shan. *Ecological aspects of study, practical use and protection of birds in mountain eco-systems, Frunze: 46-47. (In Russian).*

Kovshar A.F., 1989b. Breeding of Common Crane in lower current of Chu river (Kazakhstan). *Communications Baltic Commission Study Bird Migration, 21: 109-110. (In Russian).*

Kovshar A.F., 1991a. Purple Gallinula. *Red Book of Kazakh SSR. Animals, Alma-Ata, 1: 165-167. (In Russian).*

Kovshar A.F., 1991b. Ibisbill. *Red Book of Kazakh SSR. Animals. Alma-Ata, 1: 178-181. (In Russian).*

Kovshar A.F., 1991c. Ibisbill in Kazakhstan. *Materials of 10-th All-Union ornithol. Conference, Minsk, 2 (1): 285-286. (In Russian).*

Kovshar A.F., 1991d. Brief messages about Egyptian Vulture. In East Betpak-Dala. *Rare birds and animals of Kazakhstan, Alma-Ata: 112. (In Russian).*

Kovshar A.F., 1994. To Mynah (*Acridotheres tristis* L., 1766) biology in Tien Shan highland. *Selevinia, 3: 68-75. (In Russian).*

Kovshar A.F., 1995. Migration of birds through Ustyurt and Mangyshlak in spring of 1990. *Selevinia, 3 (1): 56-62. (In Russian).*

Kovshar A.F., 1996a. Note about birds of the Kokchetav woods (Northern Kazakhstan). *Russian Ornith. J., 5 (1-2): 35-40. (In Russian).*

Kovshar A.F., 1996b. Common Crane. Demoiselle Crane. *Red Book of the Kazakhstan, Almaty: 162-165. (In Russian).*

Kovshar A.F., 1996c. The Ibisbill. *Birding, 28 (4): 320-323.*

Kovshar A.F., 2002. Birdwatching. *Kazakhstan Ornithol. Bull. 2002, Almaty: 44-45. (In Russian).*

Kovshar A.F., 2004. Ecologic and nature-protective aspects of Kazakhstan ornithology on the border of 20 and 21 centures. *Transactions of Institute of Zoology, ornithology, Almaty, 48: 17-37.*

Kovshar A.F., 2005a. Ornithological observation with group "Naturetrec" in Almaty region. *Kazakhstan Ornithol. Bull. 2004, Almaty: 129-130. (In Russian).*

Kovshar A.F., Berezovikov N.N., 1995. About biology of Lesser Skylark (*Alauda gulgula* Franklin, 1831) in a south-eastern Kazakhstan. *Selevinia, 3 (2): 63-68. (In Russian).*

Kovshar A.F., Berezovikov N.N., 2001. The trends of birds' distribution changes in Kazakhstan in the second half of XX century. *Selevinia, 1-2: 33-52. (In Russian).*

Kovshar A.F., Chalikova E.S., 1992. Long-term changes of bird fauna and population of Aksu-Dzhabagly Reserve. *Ornithological researches in Reserves, M.: 28-44. (In Russian).*

Kovshar A.F., Davygora A.V., 2004. Results of Russia-Kazakhstanishe expediion in Mugodjary and upper part Emba basin. *Kazakhstan Ornithol. Bull. 2003, Almaty: 32-34. (In Russian).*

Kovshar A.F., Gavrilov E.I. 1982. Regional sketches of a history of fauna study of birds USSR. Kazakhstan. *Birds of USSR. A history of study. Gaviiformes, Podicipediformes, Procellariiformes, M.: 113-128. (In Russian).*

Kovshar A.F., Gubin B.M., 1993a. Bar-headed Goose (*Eulabeia indica* Latham, 1979) in sources of Kegen river. *Selevinia, 1: 36. (In Russian).*

Kovshar A.F., Gubin B.M., 1993b. Breeding of Black-backed Citrine Wagtail in upper current of Karkara and Sholkudysu. *Selevinia, 1: 50. (In Russian).*

Kovshar A.F., Gubin B.M., Starikov S.S., 1988. To avia-fauna of Urdzhar-Emel territory (Alakol' hollow, Kazakhstan). *Izvestia AS KazSSR, ser. biol., 2: 33-40. (In Russian).*

Kovshar A.F., Lange M., Toropova V.I., 2002. The ornithological notes of Dzhungar-Ketmen zoological expedition "Kazakhstan-2002". *Selevinia, 1-4: 109-121.*

Kovshar A.F., Khrokov V.V, 1991. The birds of main landscapes of Pavlodar Trans-Irtysh'e. *Ornithological problems of Siberia, Barnaul: 89-91. (In Russian).*

Kovshar A.F., Khrokov V.V, 1993. About bird fauna of Pavlodar Trans-Irtysh'e. *Fauna and biology of Kazakhstan birds, Almaty: 133-144. (In Russian).*

Kovshar A.F., Korelov M.N., 1972. Family Sylviidae. *Birds of Kazakhstan, Alma-Ata, 4: 12-212. (In Russian).*

Kovshar A.F., Kovshar V.A., 2000. Birds of Kazakhstan and adjoining territories. Bibliographic index (1850-2000), *Almaty: 1-546. (In Russian).*

Kovshar A.F., Levin A.S., 1993. Birds of Betpak-Dala desert (summer aspect). *Fauna and biology of birds of Kazakhstan, Almaty: 104-132. (In Russian).*

Kovshar A.F., Levin A.S., Belyalov O.V., 2004. Birds of Betpak-Dala desert *Ornithology. Proc. Inst. Zool., 48: 85-125. (In Russian).*

Kovshar A.F., Lopatin V.V., 1983. Dates of seasonal bird migration in sub-highland of Zailiyskiy Alatau. *Migration of birds in Asia, Alma-Ata, 8: 66-76. (In Russian).*

Kovshar A.F., Pfeffer R.G., 1988. Occurrence of breeding Greenfinch in Alma-Ata. *Ornithology, 23: 212. (In Russian).*

Kovshar A.F., Rodionov E.F., 1983. Breeding of Merlin in sub-highland of Zailiyskiy Alatau (Northern Tien Shan). *Ecology of predatory birds, M.: 64-65. (In Russian).*

Kovshar A.F., Sklyarenko S.L., 1989. Passerine birds. *Book of genetic fund of fauna Kazakh SSR, Alma-Ata: 93-133. (In Russian).*

Kovshar A.F., Zhuyko B.P., Pfeffer R.G., Belyalov O.V., 1978. Some ornithological records in Zailiyskiy Alatau. *Biology of birds in Kazakhstan. Proc. Inst. Zool. AS KazSSR, Alma-Ata, 38: 115-119. (In Russian).*

Kovshar V.A., 1999. Mallard as new breeding species of Aksu-Dzhabagly Reserve (Talasskiy Alatau). *Selevinia, 1996-1997: 246-247. (In Russian).*

Kovshar V.A., 2002a. Expedition. 20. Upper reach of Pskem river. *Kazakhstan Ornithol. Bull. 2002, Almaty: 22-23. (In Russian).*

Kovshar V.A., 2002b. Little Egret. *Kazakhstan Ornithol. Bull. 2002, Almaty: 53. (In Russian).*

Kovshar V.A., 2002c. Black Stork. *Kazakhstan Ornithol. Bull. 2002, Almaty: 53. (In Russian).*

Kovshar V.A., 2002d. Birdwatching. *Kazakhstan Ornithol. Bull. 2002, Almaty: 49. (In Russian).*

Kovshar V.A., 2002e. On birds of upper part of Pskem River basin. *Selevinia, 1-4: 135-149. (In Russian).*

Kovshar V.A., 2004. Ornithological observations in Bostandyk (Western Tien Shan) in 2003. *Kazakhstan Ornithol. Bull. 2003, Almaty: 101-104. (In Russian).*

Kovshar V.A., 2005b. Expedition in Tengiz-Kurgaldjin depression. *Kazakhstan Ornithol. Bull. 2004, Almaty: 33-35. (In Russian).*

Kozlova E.V., 1975. Birds of steppe and desert zones of Central Asia, *L.: 1-250. (In Russian).*

Krivenko V.G., Lysenko V.I., Filonov K.P., 1973. Expansion of breeding area of Mediterranean Gull (*Larus melanocephalus*). *Zool. J., 52 (4): 618-619. (In Russian).*

Krivizkiy I.A., Khrokov V.V, Volkov E.N., Zhuliy V.A., 1985. Birds of Kurgaldzhin Reserve, *Alma-Ata: 1-194. (In Russian).*

Kryukov A.P., 1995. Systematics of small Palearctic shrikes of the 'cristatus group'. *Shrikes (Laniidae) of the World: Biology and Conservation. Proc. of the First International Shrike Symposium, 11-15 January 1993. Proc. of the Western Foundation of Vertebrate Zoology, 6 (1): 22-25.*

Kubykin R.A., 1991. Brief messages on Blue Whistling Thrush. In upper reach of Charyn river…. *Rare birds and animals of Kazakhstan, Alma-Ata: 259. (In Russian).*

Kuzmina M.A., 1953. Materials on birds of Western Altai. *Proc. Inst. Zool., Alma-Ata, 2: 80-104. (In Russian).*

Kuzmina M.A., 1962. Order Galliformes. *Birds of Kazakhstan, Alma-Ata, 2: 389-487. (In Russian).*

Kuzmina M.A., 1970a. Genus Luscinia. *Birds of Kazakhstan, Alma-Ata, 3: 600-610. (In Russian).*

Kuzmina M.A., 1970b. Genus Tarsiger. *Birds of Kazakhstan, Alma-Ata, 3: 571-572. (In Russian).*

Kuzmina M.A., 1974. Family Emberizidae. *Birds of Kazakhstan, Alma-Ata, 5: 121-200. (In Russian).*

Kuzyakin A.P., 2005. Note about breeding birds at north shore of Aral Sea. *Kazakhstan Ornithol. Bull. 2004, Almaty: 205-207. (In Russian).*

Lapshin E.N., 2002. White-throated Robin. *Kazakhstan Ornithol. Bull. 2002, Almaty: 110. (In Russian).*

Lenkhold V., 1956. Siberian Accentor in vicinities of Karaganda. *Proc. Inst. Zool. AS KazSSR, 6: 202. (In Russian).*

Levin A.S., 1978. About migration of Red-breasted Goose by valley of Ural river. *Second All-Union Confer. on bird migration, Alma-Ata, 2: 88-89. (In Russian).*

Levin A.S., 1991. Pin-tailed Sandgrouse. *Red Book of Kazakh SSR. Animals, Alma-Ata. 1: 193-195. (In Russian).*

Levin A.S., 1999. Paradise Flycatcher near Almaty. *Selevinia, 1998-1999: 240. (In Russian).*

Levin A.S., 2002. Great Bustard. *Kazakhstan Ornithol. Bull. 2002, Almaty: 77. (In Russian).*

Levin A.S., Belyalov O.V., 1988. About joint living of Great Reed and Clamorous Reed Warblers in Betpak-Dala. *Ornithology, 23: 216-217. (In Russian).*

Levin An.S., Berezovikov N.N., 2002. Blue Rock Thrush. *Kazakhstan Ornithol. Bull. 2002, Almaty: 110. (In Russian).*

Levin A.S., Gubin B.M., 1978. Materials on Ciconiiformes biology in lower current of Ural river. *Biology of birds in Kazakhstan. Proc. Inst. Zool., Alma-Ata, 38: 77-83. (In Russian).*

Levin A.S., Gubin B.M., 1982. About nesting parasitism of Common Cuckoo in valley of middle current of Ural river. *Animals of Kazakhstan and problems of its conservation, Alma-Ata: 110-111. (In Russian).*

Levin A.S., Gubin B.M., 1985. Biology of birds of intro-regional wood, *Alma-Ata: 1-248. (In Russian).*

Levin A.S., Karyakiin I.V., 2005. Results of expedition on Mangyshlak and Ustyurt in 2004. *Kazakhstan Ornithol. Bull. 2004, Almaty: 14-19.*

Lindeman G.V., 1971. Birds of artificial wood plantings in clay semi-desert of Northern Caspian. *Animals of artif. wood plantings in clay semi-desert, M.: 120-151. (In Russian).*

Lindeman G.V., 1986. The brief messages about Little Bustard and Black-bellied Sandgrouse. *Rare animals of Kazakhstan, Alma-Ata: 81, 98. (In Russian).*

Lindeman G.V., 1991. The brief messages about Spoonbill. In western part of Volga-Ural territory… *Rare birds and animals of Kazakhstan, Alma-Ata: 42. (In Russian).*

Lindeman G.V., Zaletaev V.S., 1975. About periodic changes of Gull species in nesting colonies. *Colonial nesting of water birds and their protection, M.: 84. (In Russian).*

Lindeman G.V., Zaletaev V.S., 1977. To distribution of rare Gull species in Western Kazakhstan. *Rare and disappearing animals and birds of Kazakhstan, Alma-Ata: 199-201. (In Russian).*

Livron A.R., 1938. Birds of Naurzum steppe. *Proc. of Naurzum Reserve, M., 1: 29-126. (In Russian).*

Lobachev Yu.S., 1964. About Red-breasted Rose Finch in Talasskiy Alatau (Western Tien Shan). *Hunting birds of Kazakhstan. Proc. Inst. Zool. AS KazSSR, Alma-Ata, 24: 213-215. (In Russian).*

Lopatin V.V., Buketov M.E., Pridatko V.I., Sibgatullin R.R., Gabriel V.V., 1991. The brief messages about Pelicans. Dalmatian Pelican. On Chushkakol' lakes… *Rare birds and animals of Kazakhstan, Alma-Ata: 35. (In Russian).*

Lopatin V.V., Erokhov S.N., Gavrilov E.I., Buketov M.E., 1993. To modern distribution of Clamorous and Great Reed Warblers in Kazakhstan. *Fauna and biology of birds in Kazakhstan, Almaty: 191-192. (In Russian).*

Lopatin V.V., Pridatko V.I., Buketov M.E., Sibgatullin R.R., Grachev Yu.N., 1991. The brief messages about Pelicans. White Pelican. On Chushkakol' lakes… *Rare birds and animals of Kazakhstan, Alma-Ata: 30-31. (In Russian).*

Loskot V.M., 2001a. A new subspecies of Pale Sand Martin, *Riparia diluta* (Sharpe & Wyatt), from the Altai and Middle Siberia (Aves: Hirundinidae). *Zoosystematica Rossica, 9(2): 461-462.*

Loskot V.M., 2001b. Name-bearing types of subspecies of *Sylvia curruca* (L.) and *S.altaea* Hume in the collection of the Zoological Institute, St.Petersburgh (Aves: Sylviidae). *Zoosystematica Rossica, 10 (1): 219-229.*

Lyubushchenko S,Yu., Pirkhal A.B., Matyukhin A.V., Panov E.N., 1986. Structure of polimorph population and breeding of Black Wheatears in near Tashkent Karatau. *Study of birds of USSR, their protection and rational using, L., 2: 46-47.*

Mal'zeva S.M., 1983. Breeding of Booted Eagle in Karkaralinsk mountains (Central Kazakhstan). *Ecology of predatory birds, M.: 80-82. (In Russian).*

Matyukhin A.V., Matyukhin A.A., Shevchenko V.L., 1991. About new finds of Paddyfield Warbler in the Ural area. *Materials of 10-th All-Union Ornithol. Conference, Minsk, 2 (2): 64-65. (In Russian).*

Meklenburzev R.N., 1965. About intervention in Mynah (*Acridotheres tristis* L.) settling. *Zool. J., 44 (5): 463-464. (In Russian).*

Meklenburzev R.N., 1990. Family Stercorariidae. *Birds of Uzbekistan, Tashkent, 2: 126-127. (In Russian).*

Meklenburzev R.N., 1995. Family Sylviidae. *Birds of Uzbekistan, Tashkent, 3: 233-253. (In Russian).*

Menzbier M.A., 1895. Birds of Russia, *M., 1: 1-836. (In Russian).*

Menzbier M.A., 1895. Birds of Russia, *M., 2: 1-1120. (In Russian).*

Milovidov S.P., 1983. The Greenfinch in Tomskoye Priob'e. *Birds of Siberia, GornoAltaisk: 85-86. (In Russian).*

Mischenko V.P., Baydavletov R.Dz., 1987. Breeding of Blackbird and Redwing on Western Altai. *Izvestia AS KazSSR, ser. biol., 2: 34-36. (In Russian).*

Mitropol'skiy O.V., 1965. About the phenomenon of "relict" flight of birds and opportunity of its application to study of regional fauna history. *News of ornithology, Alma-Ata: 239-241. (In Russian).*

Mitropol'skiy O.V., 1968. Breeding of Finsch's Wheatear on Mangyshlak. *News of ornithology of Kazakhstan, Alma-Ata: 67-70. (In Russian).*

Mitropol'skiy O.V., 1978. Materials on Accentor (Prunellidae) migration in deserts of Central Asia and Kazakhstan. *Migration of birds in Asia, Tashkent: 168-169. (In Russian).*

Mitropol'skiy O.V., Fotteler E.R., Tretyakov G.P., 1987. Order Falconiformes. *Birds of Uzbekistan, Tashkent, 1: 123-246. (In Russian).*

Mitropol'skiy O.V., Fotteler E.R., Tretyakov G.P., 1990. Order Charadriiformes. *Birds of Uzbekistan, Tashkent, 2: 17-126. (In Russian).*

Mitropol'skiy O.V. (ed.), 1995. Birds of Uzbekistan, *Tashkent, 3: 1-276. (In Russian).*

Molodovskiy A.V., 2005. About meeting of the Cream-coloured Courser at Mangyshlak. *Kazakhstan Ornithol. Bull. 2004, Almaty: 178. (In Russian).*

Molodovskiy A.V., 2005a. About nesting of Caspian and Kentish Plovers on Mangyshlak. *Kazakhstan Ornithol. Bull. 2004, Almaty: 178. (In Russian).*

Moroz A., 1898. The bird list of Akmola area and adjacent districts of Tobolsk and Tomsk guberniy. *Notes of Western-Siberian department imperial Russian geograph. Soc., 24: 1-17. (In Russian).*

Moseykin V.N., 1991. Seldom breeding raptors of Volga-Ural territory. *Materials of 10-th All-Union ornithol. Conferences, Minsk, 2 (2): 93-94. (In Russian).*

Mukhina E.A., 1999. To ecology of Marbled Teal (*Marmaronetta angustirostris*) in south-western Uzbekistan. *Territorial aspects of protection of birds in Central Asia and Kazakhstan, M.: 99-103. (In Russian).*

Nankinov D., 1989. Gulls in Bulgaria. *Nature, Sofia, 2: 50-54.*

Nankinov D., 1997. The discussion on the origin of Snow Goose (*Anser caerulescens*) in Bulgaria. *Casarca, 3: 255-258.*

Neruchev V.V., 1968. New data on birds of lower current of Emba river and adjacent deserts. *Ornithology, 9: 137-141. (In Russian).*

Neruchev V.V., Shiryaev A.F., 1983. Predatory birds in deserts of north-east Caspian. *Ecology of predatory birds, M.: 132-134. (In Russian).*

Ostashchenko A.N., 2005. The first meeting of Chinese White-winged Heron (Ardeola bacchus) in Middle Asia. *Kazakhstan Ornithol. Bull. 2004, Almaty: 166-167. (In Russian).*

Panchenko S.G, 1968. The new data on ornitho-fauna of Semipalatinsk vicinities. *News of ornithology of Kazakhstan. Proc. Inst. Zool. AS KazSSR, Alma-Ata, 29: 208-211. (In Russian).*

Panov A, 2002a. Coal Tit. *Kazakhstan Ornithol. Bull. 2002, Almaty: 114. (In Russian).*

Panov A.V., 2002b. Long-tailed Bunting. *Kazakhstan Ornithol. Bull. 2002, Almaty: 121. (In Russian).*

Panov A.V., 2005. About winter record of nominative subspecies of Black-throated Accentor in Almaty region. *Kazakhstan Ornithol. Bull. 2004, Almaty: 183. (In Russian).*

Panov A.V., Korytko Yu.N., 2002. Siberian Accentor. *Kazakhstan Ornithol. Bull. 2002, Almaty: 106. (In Russian).*

Panov E.N., 1972. Interspecific crossing and the fate of interbred populations (*Lanius collurio* L., *L. phoenicuroides* Schalow taken as an example). *J. of General Biology, 33 (4): 409-427. (In Russian).*

Panov E.N., 1995. Superspecies of shrikes in the former USSR. *Shrikes (Laniidae) of the World: Biology and Conservation. Proc. of the First International Shrike Symposium, 11-15 January 1993. Proc. of the Western Foundation of Vertebrate Zoology, 6 (1): 26-33.*

Panov E.N., Ivanitski V.V., 1975. Inter-species territorial relations in mixed population of Finsch's Wheatear *Oenanthe finschii* and Pied Wheatear *O. pleschanka* on Mangyshlak Peninsula. *Zool. J., 54 (9): 1357-1370. (In Russian).*

Pavlova E.A., 1987. About geographical variability of Grey Partridge (Perdix perdix L.) in territory USSR. *Research on fauna and ecology of Palaearctic birds. Proc. Zool. Inst. AS USSR, L., 163: 53-70. (In Russian).*

Pererva V.I., 1979. Change of raptor distribution borders in Northern Kazakhstan. 7 *All-Union zoo-geograph. Confer., M.: 67-69. (In Russian).*

Peters J.L., 1967. Check-list of birds of the world, *Cambridge, 12: 1-495.*

Pfander P.V., 1983. New places of Steppe Eagle nesting in Kazakhstan. *Protection of predatory birds, M.: 151-152. (In Russian).*

Pfander P.V., 1986. The brief messages about Steppe Eagle. In foothills of Dzhungarskiy Alatau…. *Rare animals of Kazakhstan, Alma-Ata: 131. (In Russian).*

Pfander P.V., 1992. On the reasons of late reproduction of Hobbies in the south of the area. *Modern ornithology 1991, M.: 77-85. (In Russian).*

Pfander P.V., 1994. Again about "Altai Falcon". *Selevinia, 2 (3): 5-9. (In Russian).*

Pfander P., Schmygalev S., 2001. Umfangreiche Hybridisierung der Adler- *Buteo rufinus* Cretz. und Hochlandbussarde *B.hemilasius* Temm. et Schlegel. *Ornithol. Mitteilungen, 53 (10): 344-349.*

Pfeffer R.G., 1991a. The brief messages on White Stork. To the north of Merke… *Rare birds and animals of Kazakhstan, Alma-Ata: 52. (In Russian).*

Pfeffer R.G., 1991b. Gyrfalcon. Saker Falcon. Barbary Falcon. Peregrine Falcon. Merlin. *Red Book of Kazakh SSR. Animals, Alma-Ata, 1: 223-233. (In Russian).*

Plakhov K.N., 1999. Black-bellied Sandgrouse on Ustyurt and Mangyshlak. *Problems of protection and steady use of fauna bio-diversity of Kazakhstan, Almaty: 80-81. (In Russian).*

Plakhov K.N., 2002. Griffon Vulture. *Kazakhstan Ornithol. Bull. 2002, Almaty: 98. (In Russian).*

Pleske F.D., 1889. Scientific results of N.M. Przhevalsky travels on Central Asia. Dept. Zool. Birds. *St.Petersborough, 2 (1): 1-80. (In Russian).*

Polyakov G.I., 1912. Trip on lakes of Zaysan-nor and Marka-kul' in 1909, *M.: 1-384. (In Russian).*

Portenko L.A., 1960. Birds of USSR, *M. - L., 4: 1-415. (In Russian).*

Poslavskiy A.N. 1991a. The brief messages about Pelicans. Dalmatian Pelican. In eastern Aral Sea… *Rare birds and animals of Kazakhstan, Alma-Ata: 34. (In Russian).*

Poslavskiy A.N., 1991b. The brief messages on Little Egret. In lower current of Syrdarya… *Rare birds and animals of Kazakhstan, Alma-Ata: 41. (In Russian).*

Poslavskiy A.N., 1991c. The brief messages about White-headed Duck. In lower current of Syrdarya… *Rare birds and animals of Kazakhstan, Alma-Ata: 92. (In Russian).*

Poslavskiy A.N., Postnikov G.B., Samarin E.G., 1964. About bird wintering in Northern Caspian Sea and on Mangyshlak. *Hunting birds of Kazakhstan (fauna, ecology and practical importance). Proc. Inst. Zool. AS KazSSR, Alma-Ata, 24: 157-180. (In Russian).*

Potapov R.L., 1993. New subspecies of the Himalayan Snowcock, *Tetraogallus himalayensis sauricus* subsp. nova. *Russ. Ornithol. J., 2 (1): 3-5. (In Russian).*

Pridatko V.I., 1991. Red-breasted Goose. White-winged Scoter. White-headed Duck. *Red Book of Kazakh SSR. Animals, Alma-Ata, 1: 146-148, 152-157. (In Russian).*

Prokopov K.P., Starikov S.V., Brakash I.V., 2000. Vertabrates of Eastern Kazakhstan, *Ust'-Kamenogorsk: 1-206. (In Russian).*

Prokopov K.P., 2004. Records of some birds in Eastern Kazakhstan in 2003. *Kazakhstan Ornithol. Bull. 2003, Almaty: 64-66. (In Russian).*

Red Book of the Kazakh SSR, **1978.** Vertebrate animals, *Alma-Ata, 1: 1-206. (In Russian).*

Red Book of the Kazakh SSR, 1991. Animals, *Alma-Ata, 1: 1-560. (In Russian).*

Red Book of Kazakhstan, 1996. Animals. Vertebrates, *Almaty, 1 (1): 1-326. (In Russian).*

Ripley S.D., 1961. A synopsis of the birds of India and Pakistan, *Madras: 1-703.*

Rodionov E.F., Gavrilov E.I., 1993. Ornithological news in south-eastern Kazakhstan. *Fauna and biology of birds in Kazakhstan, Almaty: 193-194. (In Russian).*

Rusanov G.M., 1992. Rare birds of Ural delta. *Rare species of plants and animals of Orenburg area, Orenburg: 56-58. (In Russian).*

Rustamov E.A., 2004. Expedition on Ustyurt in 1989. *Kazakhstan Ornithol. Bull. 2003, Almaty: 223-227. (In Russian).*

Samusev I.F., 1958. About migration of water birds on Zaysan lake. *Scie. notes of Ust'-Kamenogorsk pedagogic Inst., 1: 145-148. (In Russian).*

Samusev I.F., 1975. Breeding of Pelecaniformes on Zaysan lake. *Colonial breeding of water birds and their protection, M.: 194-195. (In Russian).*

Samusev I.F., 1976. The brief messages about Henderson's Ground Jay in Zaysan depression. *Rare, disappearing and not well known birds of USSR, Ryazan: 203. (In Russian).*

Samusev I.F., 1977. About rare birds of Eastern Kazakhstan. *Rare and disappearing animals and birds of Kazakhstan, Alma-Ata: 219-222. (In Russian).*

Scherbakov B.V., 1974. Ornithological news of Western Altai. *Materials of 6th All-Union ornithol. conf., M., 1: 249-251. (In Russian).*

Scherbakov B.V., 1978a. The ecological information about breeding birds new to Western Altai and Kazakhstan. *Biology of birds in Kazakhstan. Proc. Inst. Zool. AS KazSSR, 38: 127-132. (In Russian).*

Scherbakov B.V., 1978b. About vagrants and settle of some birds in Kazakhstan Altai. *Migration of birds in Asia, Tashkent: 144-147. (In Russian).*

Scherbakov B.V., 1982. About some rare birds in Eastern Kazakhstan. *Fauna of Kazakhstan and problem of its protection, Alma-Ata: 201-203. (In Russian).*

Scherbakov B.V., 1986. Ornithological news in Eastern Kazakhstan. *Study of birds USSR, their protection and rational use, L., 2: 354-355. (In Russian).*

Scherbakov B.V., 1989a. Ornithological news in a mountain part of Eastern Kazakhstan. *Ecol. aspects of study, practical use and protection of birds in mountain eco-systems, Frunze: 113-115. (In Russian).*

Scherbakov B.V., 1989b. About breeding of two Bullfinch species in Southwest of Kazakhstan part of Altai. *Ecological aspects of study, practical use and protection of birds in mountain eco-systems, Frunze: 111-112. (In Russian).*

Scherbakov B.V., 1990a. About breeding of Great Grey Owl on Southern Altai. *Ornithology, 24: 166-167. (In Russian).*

Scherbakov B.V., 1990b. The comparative characteristic of Snipe habitat distribution in mountain-wood part of Western Altai. *Ornithology, 24: 167. (In Russian).*

Scherbakov B.V., 1991. Breeding of Pallas's Reed Bunting in Eastern Kazakhstan. *Materials 10-th All-Union ornithol. Conference, Minsk, 2 (2): 308-309. (In Russian).*

Scherbakov B.V., 1992a. Breeding of Upland Buzzard in Eastern Kazakhstan. *Modern Ornithology 1991, M.: 263-264. (In Russian).*

Scherbakov B.V., 1992b. About an island settlement of birds in Kazakhstan Altai. *Condition and ways of the savings of wild plants and animals gene-fund in Altai territory, Barnaul: 71-72. (In Russian).*

Scherbakov B.V., 1994. About breeding of White-winged Grosbeak (*Mycerobas carnipes*) in Saur. *Selevinia, 2 (2): 98. (In Russian).*

Scherbakov B.V., 1995a. Rare trade birds of the Eastern Kazakhstan region. *Materials of scientific - practical conference on conducting the hunting economy in new economic conditions, Almaty: 160-161. (In Russian).*

Scherbakov B.V., 1995b. A note about birds settle in Southwest Altai. *Urgent questions of biology, Barnaul: 191-193. (In Russian).*

Scherbakov B.V., 1999a. Ornithological news on Saur ridge (Eastern Kazakhstan). *Problems of protection and steady use of fauna bio-diversity of Kazakhstan, Almaty: 93. (In Russian).*

Scherbakov B.V., 1999b. Ornithological news of Eastern Kazakhstan. *Problems of protection and steady use of fauna bio-diversity of Kazakhstan, Almaty: 93-94. (In Russian).*

Scherbakov B.V., 1999c. Fauna of breeding birds of the Western-Altai Reserve. *Territorial aspects of protection of birds in Central Asia and Kazakhstan, M.: 16-19. (In Russian).*

Scherbakov B.V., 2001. About dynamic of birds' distribution on Western Altai. *Selevinia, 1-4: 53-56. (In Russian).*

Scherbakov B.V., 2002. Vertebrate fauna of Bukhtarma reservoir islands. *Selevinia, 1-4: 295-297. (In Russian).*

Scherbakov B.V., Berezovikov N.N., 1978. Terms of wader migration in Irtysh valley on Altai. *Migration of birds in Asia, Tashkent: 137-144. (In Russian).*

Scherbakov B.V., Berezovikov N.N., 2004. Birds of Manrak ridge. *Russ. Ornithol. J., 261: 435-461(In Russian).*

Scherbakov B.V., Kochnev A.G., 1983. About numbers and distribution of some predatory birds in Eastern Kazakhstan. *Ecology of predatory birds, M.: 156-158. (In Russian).*

Selevin V.A., 1927. Two new birds for Semipalatinsk territory. *Uragus, 2: 36. (In Russian).*

Selevin V.A., 1929. Ornithological collection of Semipalatinsk museum. *Semipalatinsk: 1-28. (In Russian).*

Selevin V., 1932. About moving southern Turtle Doves in Semirechye. *Hunter and fisherman of Siberia, 5-6: 56. (In Russian).*

Selevin V.A., 1935. The new data on bird distribution in Western Altai and its foothills. *Bull. of Central Asian State University, 13 (21): 115-126. (In Russian).*

Sema A.M., Gistsov A.P., 1984. Settling of Common Mynah in Kazakhstan. *Ornithology, 19: 211-212. (In Russian).*

Shevchenko V.V., 1948. Birds of Aksu-Dzhabagly State Reserve. *Proc. Aksu-Dzhabagly Reserve, 1: 36-71. (In Russian).*

Shevchenko V.L., Debelo P.V., Gavrilov E.I., Naglov V.A., Fedosenko A.K., 1993. About ornitho-fauna of Volga-Ural territory. *Fauna and biology of birds of Kazakhstan, Almaty: 7-103. (In Russian).*

Shevchenko V.L., Gavrilov E.I., Naglov V.A., Fedosenko A.K., Tatarinova O.M., 1978. About ornitho-fauna of Volga-Ural territory. *Biology of birds in Kazakhstan. Proc. Inst. Zool. AS KazSSR, 38: 99-114. (In Russian).*

Shevchenko V.L., Debelo P.V., Gavrilov E.I., Naglov V.A., Fedosenko A.K., 1993. About ornitho-fauna of Volga-Ural territory. *Fauna and biology of birds in Kazakhstan, Almaty: 7-103. (In Russian).*

Shirihai H., Gargalo G., Helbig A.J., 2001. Sylvia warblers. Identification, taxonomy and phylogeny of the genus Sylvia, *London: 1-576.*

Shnitnikov V.N., 1949. Birds of Semirechye, *M.-L.: 1-666. (In Russian).*

Shukurov E.D., 1988. Snow Pigeon in Tien Shan and Alay. *Ornithology, 23: 225-226. (In Russian).*

Shulpin L.M., 1956. Materials on bird fauna of Aksu-Dzhabagly Reserve (Talasskiy Alatau). *Proc. Inst. Zool., 6: 158-193. (In Russian).*

Shulpin L.M., 1961. Materials on bird fauna of Aksu-Dzhabagly Reserve (Talasskiy Alatau). *Materials on terrestrial vertebrates of Kazakhstan. Proc. Inst. Zool., 15: 147-160. (In Russian).*

Shuyskiy V.E., 2002. Crimson-winged Finch. *Kazakhstan Ornithol. Bull. 2002, Almaty: 119. (In Russian).*

Skalon N.N., Skalon I.A., 1970. Breeding of Pine Bunting in Tien Shan mountains. *Animals and flora of Almatinskiy Reserve, Alma-Ata: 135-137. (In Russian).*

Sklyarenko S.L., 1989. Results of experiments on attraction of birds in artificial nest-boxes in mountain systems of Kazakhstan. *Ecological aspects of study, practical use and protection of birds in mountain eco-systems, Frunze: 90-93. (In Russian).*

Sklyarenko S.L., 1991. About biology of Paradise Flycatcher in the south of Chimkent area. *Rare birds and animals of Kazakhstan, Alma-Ata: 247-250. (In Russian).*

Sklyarenko S.L., 1992. Biology and prospects of use of Tits in Tien Shan and Altai. *Abstract of doctoral thesis, Alma-Ata: 22. (In Russian).*

Sklyarenko S.L., 2002a. Birdwatching. *Kazakhstan Ornithol. Bull. 2002, Almaty: 46-47. (In Russian).*

Sklyarenko S.L., 2002b. Peregrine Falcon. *Kazakhstan Ornithol. Bull. 2002, Almaty: 68. (In Russian).*

Sklyarenko S.L., 2002c. Coal Tit. *Kazakhstan Ornithol. Bull. 2002, Almaty: 114. (In Russian).*

Sklyarenko S.L., 2002d. Crimson-winged Finch. *Kazakhstan Ornithol. Bull. 2002, Almaty: 119. (In Russian).*

Sklyarenko S.L., Belyalov O.V., 2004. The Himalayan Griffon *Gyps himalayensis*. *Kazakhstan Ornithol. Bull. 2003, Almaty: 142-146. (In Russian).*

Sklyarenko S.L., Katzner T., McGradi M., Kovalenko A.V., 2002. Black and Griffon Vulture to the Red Book. *Kazakhstan Ornithol. Bull. 2002, Almaty: 132-133. (In Russian).*

Sklyarenko S.L., Kovalenko A.V., Gavrilov E.I., 1999. Change of Steppe Eagle distribution in Kazakhstan. *Problems of protection and steady use of fauna bio-diversity of Kazakhstan, Almaty: 83-84. (In Russian).*

Sklyarenko S.L., Lopatin V.V., 1989. Formation of a contact zone between Great and Grey Tit in Semirechye. *Vestnik Zool., 6: 59-63. (In Russian).*

Slovzov I., 1881. Travelling notes during trip to the Kokchetav district, Akmola area in 1878. Birds. *Notes Western Siberia branch of Russian Geographical Soc., 2(3): 1-152. (In Russian).*

Smetana N.M., 1974. Ornithological news for woods of Naurzum Reserve. *Materials YI All-Union ornithol. Conf., M., 1: 238. (In Russian).*

Smirensky S.M., Mischenko A.L., 1981. System situation and history of area formation of Swallow (*Hirundo rustica*) in Amur-land. *Zool. J., 60 (10): 1533-1540. (In Russian).*

Solomatin A.O., 1986. The brief messages about Steppe Eagle. In Maraldinskaya hollow…. *Rare animals of Kazakhstan, Alma-Ata: 128. (In Russian).*

Solomatin A.O., 1986. The brief messages about Booted Eagle. In Bayanaul mounts…. *Rare animals of Kazakhstan, Alma-Ata: 114. (In Russian).*

Solomatin A.O., 1991. The brief messages about Red-breasted Goose. To the north of lower current Olenty river…. *Rare birds and animals of Kazakhstan, Alma-Ata: 89-90. (In Russian).*

Solomatin A.O., 1999a. Materials to ornitho-fauna of Pavlodar Priirtysh'ye. *Problems of protection and steady use of fauna bio-diversity of Kazakhstan, Almaty: 84-85. (In Russian).*

Solomatin A.O., 1999b. The new data on rare birds of the Pavlodar area. *Problems of protection and steady use of fauna bio-diversity of Kazakhstan, Almaty: 85-87. (In Russian).*

Spangenberg E.P., 1941. Bird of the lower current of Syrdarya river and adjacent areas. *Collection Proc. Zool. Museum Moscow Univ., 6: 77-140. (In Russian).*

Spangenberg E.P., 1959. About migration of Saxaul Sparrow (*Passer ammodendri* Gould.). *Migration of animals, M., 1: 147-148. (In Russian).*

Spangenberg E. P., Feigin G.A., 1936. The birds of lower Syrdarya and adjoined areas. *Archives du Musee Zoologique de l'Universite de Moscou, 3: 41-184. (In Russian).*

Starikov S.V., 1991. White-winged Scoter in the Kazakhstan part of Altai. *Materials 10-th All-Union ornithol. Conference, Minsk, 2(2): 228-229. (In Russian).*

Starikov S.V., 1997. The new data on distribution of Short-toed Eagle, Lammergeier and Booted Eagle in Eastern Kazakhstan. *Biological and landscape diversity variety of Kazakhstan Republic, Almaty: 81-82. (In Russian).*

Starikov S.V., 1999a. About winter avia-fauna of Eastern Kazakhstan. *Problems of protection and steady use of fauna bio-diversity of Kazakhstan, Almaty: 87. (In Russian).*

Starikov S.V., 1999b. Raven breeding in Tarbagatay and Zaysan hollow. *Problems of protection and steady use of fauna bio-diversity of Kazakhstan, Almaty: 87-88. (In Russian).*

Starikov S.V., 1999c. Notes on birds of Kazakhstan part of Ukok plateau and source of Bukhtarma river (south-eastern Altai). *Special protected territories of Altai country and nearby regions, Barnaul: 136-139. (In Russian).*

Starikov S.V., 2002. Materials about ornithofauna of the north-eastern part of the Alakol' depression. *Russ. Ornithol. J., 178: 187-213. (In Russian).*

Starikov S.V., 2005. Notes on birds in source of Kara-Kaba river (Southern Altai). *Kazakhstan Ornithol. Bull. 2004, Almaty: 104-107. (In Russian).*

Starikov S.V., 2005b. Bird observations in Kazakhstanishe part of Central Altai in 2004. *Kazakhstan Ornithol. Bull. 2004, Almaty: 112-116. (In Russian).*

Starikov S.V., Prokopov P.K., 2002. Expedition. 36. Southern Altai. *Kazakhstan Ornithol. Bull. 2002, Almaty: 39-41. (In Russian).*

Starikov S.V., Zikh A.A., 1990. The new information on birds of the Kazakhstan part of Altai. *Zoological problems of Altai Territory, Barnaul: 48-49. (In Russian).*

Stegman B.K., 1934. Birds of Kokchetav pine woods (on the data of the Karaganda zoological expedition of Academy of sciences in 1934). *Proc. Kazakhstan. Base AS USSR, 1: 5-34. (In Russian).*

Stegman B.K., 1954. About birds of a high-mountainous zone of Zailiyskiy Alatau. *Proc. L. Soc. Nat. Testers., sector zool., 72 (4): 255-275. (In Russian).*

Stepanov E.A., 1988. Breeding of Azure Tit and Fieldfare at environs of Karaganda. *Ornithology, 23: 223. (In Russian).*

Stepanyan L.S., 1975. Structure and distribution of bird fauna USSR. Not-Passerines, *M.: 1-371. (In Russian).*

Stepanyan L.S., 1978. Structure and distribution of bird fauna USSR. Passerines, *M.: 1-390. (In Russian).*

Stepanyan L.S., 1990. The abstract of ornithological fauna of USSR, *M.: 1-726. (In Russian).*

Sudilovskaya A.M., 1951. Order Steganopodes or Pelecaniformes. *Birds of the Soviet Union, M., 1: 13-69. (In Russian).*

Sudilovskaya A.M., 1978. Interesting receipts in ornithological department of the Zoological museum of Moscow State University for 1972-1975. *Birds and reptiles (research on fauna of the Soviet Union), M.: 178-187. (In Russian).*

Survillo A.V., 1968. About breeding of Little Gull and White-winged Tern in Zaysan hollow. *News of ornithology of Kazakhstan. Proc. Inst. Zool. AS KazSSR, Alma-Ata, 29: 220-221. (In Russian).*

Survillo A.V., 1971. Birds of Zaysan hollow and their connection with arbo-viruses. *Abstract of doctoral thesis., Alma-Ata: 1-23. (In Russian).*

Sushkin P.P, 1908. Birds of Middle Kirghiz steppe. *Materials to knowledge of fauna and flora of Russian Empire, sector zool., M., 8: 1-812. (In Russian).*

Sushkin P.P, 1938. Birds of Soviet Altai, *M.-L., 2: 1-435. (In Russian).*

Svensson L., 2001. Identification of western and eastern Olivaceous, Booted and Sykes's Warblers. *Birding world, 14 (5): 192-219.*

Tatarinkova I.P., 1970. Ringing results of Great Black-backed and Herring Gulls on Murman. *Proc. of Kandalaksha State Reserve, 8: 149-181. (In Russian).*

Tatarinkova I.P., Karpovich V.N., Krasnov Yu.V., Shklayarevich F.N., 1983. Results of ringing and territorial connections of birds on Murman. *Communications Baltic Commission Study Bird Migration, 16: 38-54. (In Russian).*

Tolvanen P., Oien I.J., Litvin K., Aarvak T., Markkola J., 1998. New data on migration of Lesser White-fronted Goose from Taymyr peninsula. *Casarca, 4: 193-196.*

Vaitkyavichus A., 1968. Visual migration of waterfowl and other water birds in Lithuania. *Communications Baltic Commission Study Bird Migration, 5: 44-67. (In Russian).*

Varshavskiy S.N., 1957. Season movements and and migration of birds, mainly raptors, on territury adjoined to Aral Sea from north. *Transactions of 3 Baltic ornithol. Conference, Vilnyus: 69-84. (In Russian).*

Varshavskiy S.N., 1965. Landscapes and faunistic complexes of terrestrial vertebrates of Northern Aral Sea territory in connection with their importance in natural plague centre. *The report submitted on competition to a scientific degree of the doctor of biological sciences on set of published works, Saratov: 1- 76. (In Russian).*

Varshavskiy S.N., 1987. Migration of Swans in Northern Aral Sea and Northern Caspian Sea territories and some features per different years. *Ecology and migration of Swans in USSR, M.: 119-121. (In Russian).*

Varshavskiy S.N., Varshavskiy B.S.., Garbuzov V,K., 1977. Rare and disappearing birds of Northern Aral Sea territory. *Rare and disappearing animals and birds of Kazakhstan, Alma-Ata: 146-153. (In Russian).*

Varshavskiy S.N., Shilov M.N., 1956. Stray Nutcracker on Ustyurt. *Bull. Moscow Soc. Natur., sector biol., 61 (4): 84. (In Russian).*

Vaurie Ch., 1959. The birds of Palearctic fauna. Passeriformes, *London: 1-762.*

Vaurie Ch., 1965. The birds of Palearctic fauna. Non Passeriformes, *London: 1-763.*

Vilkov V.S., 2004. About record of Asiatic Dowitcher in Northern Kazakhstan. *Kazakhstan Ornithol. Bull. 2003, Almaty: 154. (In Russian).*

Vinogradov V.G., Auezov E.M., 1991a. Numbers and distribution of Pelicans in Central Kazakhstan. *Rare birds and animals of Kazakhstan, Alma-Ata: 7-18. (In Russian).*

Vinogradov V.G., Auezov E.M., 1991b. Numbers and distribution of Cormorant in Turgay depression on the data of August air-accounts. *Materials of 10-th All-Union Ornithol. Conf., Minsk, 2 (1): 111-112. (In Russian).*

Vinogradova I.Yu., 1997. Distribution and numbers of Black-bellied Sandgrouse on south-west Ustyurt and Mangyshlak. *Biological and landscape diversity of Kazakhstan Republic, Almaty: 137. (In Russian).*

Vinokurov A.A., 1982. Present status of the *Branta ruficollis* population and measures for its conservation. *Aquila, 89: 115-122.*

Vinokurov A.A., 2004. Steppe buzzard *Buteo buteo*. *Kazakhstan Ornithol. Bull. 2003, Almaty: 166. (In Russian).*

Vladimirskaya M.I., Mezhennyi A.A., 1952. Bird fauna birds of Kurgaldzhin lakes (Northern Kazakhstan). *Proc. Zool. Inst. AS USSR, 9 (4): 1199-1225. (In Russian).*

Voloshin I.F., 1949. Observations on Marsh Harrier, Imperial Eagle and Saker Falcon in Northern Kazakhstan. *Proc. Naurzum State Reserve, 2: 58-83. (In Russian).*

Vtorov P.P., 1967. Penduline Tit, Spanish and Saxaul Sparrows in Issyk-Kul' Hollow. *Ornithology, 8: 339-340. (In Russian).*

Yablonskiy N.I., 1904. Hunting and trade birds and animals of Southern Altai. *Nature and hunt, 1: 40-43. (In Russian).*

Yablonskiy N.I., 1907. Markakol' Lake. *Nature and hunt, 10, 11, 12: 1-13, 1-8, 1-10. (In Russian).*

Yanushevich A.I., Tyurin P.S., Yakovleva I.D., Kydyraliev A., Semenova N.I., 1960. Birds of Kirghizia, *Frunze, 2: 1-273. (In Russian).*

Yesou P., 2002. Systematics of Larus argentatus-cachinnans-fuscus complex revisited. *Dutch Birding, 24 (5): 271-298.*

Zaletaev V.S., 1968. Natural environment and birds in the Trans-caspian northern deserts, *M.: 1-255. (In Russian).*

Zarudnyy N.A., 1888. Ornithological fauna of Orenburg territory, *St.Peterburgh: 1-338. (In Russian).*

Zarudnyy N.A., 1896. Ornithological fauna of Trans-caspian territory, *M.: 1-555. (In Russian).*

Zarudnyy N.A., 1897. Additions to "Ornithological fauna of Orenburg territory". *Materials to knowledge of fauna and flora of Russian Empire, M., 3: 171-312. (In Russian).*

Zarudnyy N.A., 1910. Notes on ornithology of Turkestan. *Ornithol. Bull., 2: 99-117; 3: 171-178. (In Russian).*

Zarudny N.A., 1911. Notes on ornithology of Turkestan. *Ornithol. Bull., 2: 89-98. (In Russian).*

Zarudny N.A., 1912. Notes on ornithology of Turkestan. *Ornithol. Bull., 1: 16-30. (In Russian).*

Zarudnyy N.A., 1913. Notes on ornithology of Turkestan. *Ornithol. Bull., 3: 137-154; 4: 254-256. (In Russian).*

Zarudnyy N.A., 1915. Birds of Kyzylkum desert. *Materials to knowledge of fauna and flora of Russian Empire, sector zool., 14: 1-149. (In Russian).*

Zarudnyy N.A., Koreev B.P., 1906. Ornithological fauna of Semirechye territory. *Materials to knowledge of fauna and flora of Russian Empire, sector zool., 7: 146-247. (In Russian).*

Zaynutdinov R.I., 2002a. Bean Goose. *Kazakhstan Ornithol. Bull. 2002, Almaty: 95. (In Russian).*

Zaynutdinov R.I., 2002b. Goosander. *Kazakhstan Ornithol. Bull. 2002, Almaty: 95. (In Russian).*

Zhatkanbaev A., 1996. Finding of Arctic Loon (*Gavia arctica* L.) on wintering in the Ile delta (south-eastern Kazakhstan). *Pan-Asian Ornithol. Congr. And 12 BirdLife Asia Conf., Coimbatore, India. Abstracts: 112.*

Zhatkanbaev A. Zh., 1990. Modern aspects of rare raptor numbers in delta of Ile river. *Rare and not well known birds of Central Asia, Tashkent: 19-22. (In Russian).*

Zhatkanbaev A. Zh., 2002. Pelicans of the Ile River delta (biology, ecology, numbers, protection). *Thesis of Candidate dissertation, Almaty: 1-30. (In Russian).*

Zhdanko A.B., 2002. White's Thrush. *Kazakhstan Ornithol. Bull. 2002, Almaty: 112. (In Russian).*

Zhiriakov V.A., 1999a. Record of Falcated Duck (*Anas falcata* Georgi) in a south-eastern Kazakhstan. *Selevinia, 1998-1999: 239-240. (In Russian).*

Zhiriakov V.A., 1999b. Falcated Duck shot in the south-eastern Kazakhstan. *Casarca, 5: 263. (In Russian).*

Zhuyko B.P., 1980. White's Thrush in Kungey Alatau (Tien Shan). *Ornithology, 15: 196. (In Russian).*

Zhyrnov L.V., Vinokurov A.A., Bychkov V.A., 1978. Rare and threatened animals of the USSR. Mammals and Birds, *M.: 1-84. (In Russian).*

Zinchenko Yu.K., Starikov S.V., Shakula V.F., 1992. To fauna of rare and not well known birds of Markakol' depression. *Condition and ways of gene-fund savings of wild plants and animals in Altai territory, Barnaul: 23-25. (In Russian).*

Summary

Gavrilov E. I., Gavrilov A. E. **The Birds of Kazakhstan (abridged edition).**

In Kazakhstan 503 species of birds reliable recorded. Out of them 90 are sedentary, 313 breeding migrant, 68 occur during migration only, 29 accident and 3 with unknown status. For each English and Scientific names, status, distribution (on subspecies level), habitat, information about breeding and migration are given in species accounts. For each subspecies morphological peculiarities are given (per L.S.Stepanyan, 1990, mostly). In expected list 11 species (*Aquila pomarina*, *Phalacrocorax aristotelis*, *Ardeola bacchus*, *Calidris canutus*, *Calidris maritima*, *Larus argentatus*, *Larus vegae*, *Larus marinus*, *Muscicapa ruficauda*, *Emberiza spodocephala* and *Emberiza fucata*) mentioned, as they found nearby or Kazakhstan's border. Rejected list consist of 12 species (*Gavia adamsii*, *Puffinus puffinus*, *Morus bassanus*, *Threskiornis aethiopicus*, *Somateria spectabilis*, *Somateria molissima*, *Histrionicus histrionicus*, *Falco amurensis*, *Ninox scutulata*, *Acrocephalus paludicola*, *Phylloscopus subviridis* and *Parus cristatus*), which erroneously identified in field, not confirmed documentary or not recorded more than last 100 years. For some places frequently visited by foreign ornithologists and bird-watchers (Sorbulal Lake, Konshengel' village, Djelturanga village, Bolshoye Almatinskoye Lake, Syugatinskaya valley, Merke Gorge, Kurgaldjinskiy reserve, Kazakhstanishe Altai, Chokpak Ringing Station, Stone Lake, Berkara gorge, Kyzylkol' Lake and Griffon Vulture colony) interesting bird species are listed.

Резюме

Гаврилов Э.И., Гаврилов А.Э. **Птицы Казахстана (сокращенное издание).**

В Казахстане достоверно встречается 503 вида птиц, из которых 90 оседлых, 313 перелетных, 68 пролетных, 29 залетных и 3 с невыясненным статусом. В повидовых очерках для каждого указано английское и латинское названия, характер пребывания, распространение (на подвидовом уровне), сведения по гнездованию и сезонным миграциям. Для каждого подвида указаны морфологические отличия, преимущественно по Л.С.Степаняну (1990). В разделе «Ожидаемые виды» перечислены 11 видов (*Aquila pomarina*, *Phalacrocorax aristotelis*, *Ardeola bacchus*, *Calidris canutus*, *Calidris maritima*, *Larus argentatus*, *Larus vegae*, *Larus marinus*, *Muscicapa ruficauda*, *Emberiza spodocephala* и *Emberiza fucata*), которые встречены на смежной с Казахстаном территории. В разделе «Отвергнутые виды» перечислены 12 видов (*Gavia adamsii*, *Puffinus puffinus*, *Morus bassanus*, *Threskiornis aethiopicus*, *Somateria spectabilis*, *Somateria molissima*, *Histrionicus histrionicus*, *Falco amurensis*, *Ninox scutulata*, *Acrocephalus paludicola*, *Phylloscopus subviridis* и *Parus cristatus*), которые отмечены для Казахстана на основе ошибочных визуальных наблюдений, не подтвержденных документально, или не отмечавшихся более 100 лет. Для ряда мест, наиболее часто посещаемых зарубежными орнитологами и берд-вотчерами (озеро Сорбулак, Колченгель, Джельтуранга, Большое Алматинское озеро, Сюгатинская долина, ущелье Мерке, Кургальджинский заповедник, Казахстанский Алтай, Чокпакская станция по кольцеванию, Каменное озеро, ущелье Беркара, озеро Кзылколь и колония грифов в Каратау), перечислены наиболее интересные виды.

Тұжырым

Гаврилов Э.И., Гаврилов А.Э. **Қазақстан құстары (қысқаша шығармасы).**

Қазақстанда 503 түрлі құс анық кездеседі, олардың ішінде бір жерде туратын - 90 түр, ұшып кететің - 313 түр, ұшып кеткен-68, анда-санда ұшып келетін -29,және аңықталмаған статуспен −3 түр. Жеке түрдің жазбасында әғылинша және латын тілінде есімдер берілген, ұшып келу-кету дәрежесі, мекен жайы түрлесі боиынша, ұясалу және қоныс аудару мезгілі мәліметтер берілген. Әр бір түршесіне жеке морфологиялық ажырама көрсетілген. Көпшілік Степанян Л.С. қітапбымен бөинша қарастырылыған. Күтетін түрлер- бөлмесіне 11 түр саңалған, олар Қазақстан шекарасының жайында кездесілген. Жоқ деген түрлер бөлімісіде 12 түр саналған, олар Қазақстанда қате түрды байқалмаған, қағаз боиынша анықта алмаған, немесе 100 жылдан аса сипатталмаған. Кейбір жерлердың, шетел ғылымдары және құс зерттешілер көп барып туратын - Сорбулақ көл, Колшенғіл, Желтұранга, Үлкен Алматы көлі, Согаты дала, Мерке сайы, Қорғалжын қорығы, Қазақстан Алтай тау, сақина салу Шақпақ станциясы, Таскөл, Беркара сайы, Қызылкөл және тазқара құсының ұясалу жері Каратауда- өте қызықты турлер саңалған.

Appendix 1

Birds in Red Book of Kazakhstan and in IUCN Red Book

Species	Red Book of Kazakhstan, 1996	IUSN Red List, 2004 (www.redlist.org)
Bewick's Swan *(Cygnus bewickii)*	Restored	
Whooper Swan *(Cygnus cygnus)*	Reducing	
Swan Goose *(Cygnopsis cygnoides)*	Disappearing	Decreasing
Lesser White-fronted Goose *(Anser erythropus)*	Reducing	Decreasing
Red-breasted Goose *(Branta ruficollis)*	Reducing	Unknown
Baikal Teal *(Anas Formosa)*		Decreasing
Marbled Duck*(Anas angustirostris)*	Disappearing	Decreasing
Ferrugineus Duck *(Aythya nyroca)*	Rare	Near-Threatened
Velvet Scoter *(Melanitta fusca)*	Rare	
White-winged Scote *(Melanitta deglandi)*	Rare	
White-headed Duck *(Oxyura leucocephala)*	Disappearing	Endangering
Altai Snowcock *(Tetraogallus altaicus)*	Reducing	
Pygmy Cormorant *(Phalacrocorax pygmaeus)*		No status
White Pelican *(Pelecanus onocrotalus)*	Disappearing	
Dalmatian Pelican *(Pelecanus crispus)*	Reducing	Stable
Squacco Heron *(Ardeola ralloides)*	Reducing	
Little Egret *(Egretta garzetta)*	Rare	
Black Stork *(Ciconia nigra)*	Rare	
White Stork*(Ciconia ciconia)*	Disappearing	
Glossy Ibis *(Plegadis falcinellus)*	Reducing	
Eurasian Spoonbill *(Platalea leucorodia)*	Reducing	
Greater Flamingo *(Phoenicopterus roseus)*	Reducing	
Pallas's Fish Eagle *(Haliaeetus leucoryphus)*	Disappearing	Decreasing
White-tailed Fish Eagle *(Haliaeetus albicilla*)	Reducing	No status
Lammergeier *(Gypaetus barbatus)*	Rare	
Egyptian Vulture (Neophron percnopterus)	Rare	
Himalayan Griffon *(Gyps himalayensis)*	Uncertain	
Eurasian Black Vulture *(Aegypius monachus)*	Decreasing	
Short-toed Eagle *(Circaetus gallicus)*	Reducing	
Pallid Harrier *(Circus macrourus)*	Decreasing	
Spotted Eagle *(Aquila clanga)*	Decreasing	
Booted Eagle *(Hieraaetus pennatus)*	Rare	
Golden Eagle *(Aquila chrysaetos)*	Rare	
Steppe Eagle *(Aquila nipalensis)*	Restored	
Eastern Imperial Eagle *(Aquila heliaca)*	Rare	Decreasing
Osprey *(Pandion haliaetus)*	Disappearing	
Lesser Kestrel *(Falco naumanni)*	Decreasing	
Saker Falcon *(Falco cherrug)*	Disappearing	Critically Endangered
Gyr Falcon *(Falco rusticolus)*	Rare	
Peregrine Falcon *(Falco peregrinus)*	Disappearing	
Barbary Falcon *(Falco pelegrinoides)*	Disappearing	
Corn Crake *(Crex crex)*		Decreasing
Purple Swamp-hen *(Porphyrio porphyrio)*	Reducing	
Common Crane *(Grus grus)*	Rare	
Siberian Crane *(Grus leucogeranus)*	Disappearing	Decreasing
White-naped Crane *(Grus vipio)*		Decreasing

Hooded Crane *(Grus monacha)*		Decreasing
Demoiselle Crane *(Anthropoides virgo)*	Restored	
Little Bustard *(Tetrax tetrax)*	Reducing	Decreasing
Houbara Bustard *(Chlamydotis macqueenii)*	Reducing	Decreasing
Great Bustard *(Otis tarda)*	Disappearing	Decreasing
Ibisbill *(Ibidorhyncha struthersii)*	Rare	
Black-winged Pratincole *(Glareola nordmanni)*		No status
Sociable Lapwing *(Vanellus gregarius)*	Disappearing	Decreasing
Great Snipe *(Gallinago media)*		Decreasing
Asian Dowitcher *(Limnodromus semipalmatus)*	Uncertain	No status
Little Curlew *(Numenius minutus)*	Rare	
Slender-billed Curlew *(Numenius tenuirostris)*	Disappearing	Critically Endangered
Great Black-headed Gull *(Larus ichthyaetus)*	Reducing	
Relict Gull *(Larus relictus)*	Disappearing	Decreasing
Black-bellied Sandgrouse *(Pterocles orientalis)*	Rare	
Pin-tailed Sandgrouse *(Pterocles alchata)*	Rare	
Pallas's Sandgrouse *(Syrrhaptes paradoxus)*	Uncertain	
Yellow-eyed Stock Dove *(Columba eversmanni)*	Rare	Unknown
Eagle Owl *(Bubo bubo)*	Reducing	
Hodgson's Stonechat *(Saxicola insignis)*		Decreasing
Blue Whistling Thrush *(Myophonus caeruleus)*	Restored	
Aquatic Warbler *(Acrocephalus paludicola)*		Decreasing
Pander's Ground-jay *(Podoces panderi)*	Rare	
Great Rosefinch *(Carpodacus rubicilla)*	Uncertain	
Yellow-breasted Bunting *(Emberiza aureola)*		No status

Appendix 2

Coordinates of points mentioned in the book

A

Abakumovka 45°39'N 79°50'E
Aidarly 44°05'N 75°54'E
Airtau lake 53°10'N 68°19'E
Akchatau lake 45°58'N 61°35'E
Akespe station 46°46'N 50°28'E
Akkanskoye lake 54°02'N 69°18'E
Akkumsagiz sands 48°14'N 54°34'E
Aksay 51°06'N 65°18'E
Aksay ravine46°20'N 67°12'E
Aksu river 45°54'N 78°32'E
Aksuek 44°36'N 74°29'E
Aksu-Dzhabagly 42°25'N 70°28'E
Akterek 43°27'N 75°49'E
Aktogay 43°32'N 79°17'E
Aktau 43°65'N 51°20'E
Aktobe 50°28'N 57°17'E
Alakol' hollow 46°20'N 81°29'E
Alekseyevka 51°59'N 70°55'E
Alexander Bay 42°30'N 52°00'E
Almaty 43°14'N 76°51'E
Altai 49°18'N 85°13'E
Altayskiy Tarbagatai 48°09'N 86°05'E
Amankaragay 52°23'N 64°08'E
Arakaragay 53°20'N 64°20'E
Aral Sea 45°40'N 59°37'E
Aralsk 46°47'N 61°37'E
Araltobe Mount 46°30'N 81°06'E
Arkarly 48°00'N 77°57'E
Arkharly Mountains 46°20'N 79°30'E
Arys 42°25'N 68°48'E
Arys river 42°29'N 69°00'E
Aspara river 43°00'N 73°28'E
Astana 51°17'N 71°50'E
Aschitastysor lake 49°31'N 63°50'E
Atbasar 51°48'N 68°21'E
Atyrau 47°05'N 51°52'E
Ayaguz 47°57'N 80°23'E
Ayaguz river 47°34'N 79°34'E
Aynakol Lake 42°23'N 70°29'E
Ayryuk Mountain 49°00'N 58°43'E
Azutau ridge 48°37'N 85°48'E

B

Badam reservoir 42°13'N 69°16'E
Bala-Baldabrek river42°17'N 70°28'E
Baldabrek river 42°14'N 70°30'E
Balkhash-Alakol' hollow 46°30'N 80°00'E
Balkhash lake 46°40'N 76°04'E
Barsa-Kelmes Island 45°41'N 59°59'E
Bartagoy grove 43°19'N 78°29'E
Basaga 47°09'N 73°23'E
Bas-Gurly hollow 42°46'N 53°20'E
Batpakkol lake 51°25'N 62°39'E
Batyk 50°19'N 81°27'E
Bautino 44°34'N 50°15'E
Bautino Island 45°00'N 50°00'E
Bayanaul 50°47'N 75°41'E
Bayankol 42°35'N 79°58'E
Bayankol river 42°44'N 79°55'E
Baygakum 44°32'N 66°46'E
Baykonur 42°44'N 79°55'E
Baytal44°51'N 70°59'E
Bektau-Ata 48°41'N 75°33'E
Bel'agach steppe 50°46'N 80°40'E
Belaya Uba river 50°32'N 82°34'E
Beloubinskiye lake 50°33'N 82°16'E
Beloye lake 52°32'N 76°58'E
Beloye lake, Kokchetav 54°55'N 69°16'E
Berchogura 48°24'N 58°43'E
Berel' village 49°22'N 86°26'E
Berezovka 50°14'N 82°06'E
Besaryk river 43°41'N 67°46'E
Betpak-Dala 46°03'N 70°20'E
Big Almaty Lake 43°01'N 76°54'E
Bish-Tamak 50°05'N 57°35'E
Bitik village 50°08'N 50°29'E
Biylikol Lake 42°58'N 70°43'E
Bizhe River 44°39'N 78°05'E
Boguty Mountains 43°27'N 78°32'E
Bolshaya Almatinka river 43°20'N 76°53'E
Bolshiye Barsuki 47°13'N 59°50'E
Bolshoy Baskan river 44°45'N 79°16'E
Bolshoy Uzen river 49°47'N 49°18'E
Borolday Mountains 43°00'N 70°19'E
Borovoye lake 53°04'N 70°19'E
Budarino 50°51'N 51°06'E
Bukhtarma reservoir 49°31'N 86°31'E
Bukhtarma river 50°01'N 84°06'E

Buran 48^{0}02'N 85^{0}19'E
Burandysu 43^{0}31'N 78^{0}34'E
Bystrukha river 50^{0}19'N 83^{0}27'E
Byurtas 49^{0}23'N 75^{0}20'E

C
Caspian Sea 41^{0}37'N 51^{0}02'E
Chagan river 50^{0}56'N 51^{0}07'E
Chapaev 50^{0}20'N 51^{0}17'E
Chardara reservoir 41^{0}08'N 68^{0}10'E
Charskoye reservoir 49^{0}19'N 81^{0}39'E
Charyn river 43^{0}49'N 79^{0}18'E
Charyn grove43^{0}37'N 79^{0}22'E
Chelkar lake 50^{0}32'N 51^{0}39'E
Chelkar station 47^{0}50'N 59^{0}36'E
Chelkar-Nura plateau 48^{0}30'N 62^{0}40'E
Chelkar-Teniz lake 48^{0}06'N 63^{0}03'E
Chelkar-Teniz depression 48^{0}06'N 63^{0}03'E
Chemolgan valley 43^{0}03'N 76^{0}30'E
Chernaya Uba river 50^{0}38'N 81^{0}41'E
Chernoyarka 52^{0}30'N 76^{0}50'E
Chernyy Irtysh river 48^{0}58'N 85^{0}13'E
Chiili 44^{0}09'N 66^{0}44'E
Chilik 43^{0}35'N 78^{0}15'E
Chilik river 43^{0}22'N 78^{0}19'E
Chiliktinskaya valley47^{0}10'N 84^{0}40'E
Chimkent 42^{0}22'N 69^{0}15'E
Chingirlau river 51^{0}26'N 51^{0}55'E
Chingiztau Mountains 48^{0}30'N 79^{0}20' E
Chizhin-Balykty system 50^{0}48' N 49^{0}55' E
Chokpak Pass 42^{0}31' N 70^{0}38' E
Chubartau 48^{0}11' N 78^{0}38' E
Chu river 44^{0}52' N 70^{0}55' E
Chu-Iliyskiye Mountains 43^{0}40' N 74^{0}36' E
Chulak Mountains 43^{0}59' N 77^{0}57' E
Chulak-Espe45^{0}09' N 68^{0}09' E
Chulkudinskaya valley 42^{0}56' N 79^{0}37' E
Chulkudysu river 42^{0}59' N 79^{0}36' E
Chundzha 43^{0}54' N 79^{0}47' E
Chushkakol lakes 42^{0}59' N 68^{0}25' E

D
Danilka 49^{0}58' N 50^{0}27' E
Darbaza 41^{0}57' N 69^{0}09' E
Dar'inskiy 49^{0}06' N 72^{0}57' E
Dokuchaevka 51^{0}38' N 64^{0}13' E
Dokuchaevskoye plateau 52^{0}40' N 63^{0}40' E
Dolon 50^{0}39'N 79^{0}18'E
Dongulyukskoye reservoir 50^{0}05'N 50^{0}36'E
Donguztau 46^{0}29'N 56^{0}29'E
Dossor 47^{0}30'N 52^{0}58'E
Dubrava 53^{0}00'N 69^{0}26'E
Dzerzhinskoye 45^{0}48'N 81^{0}03'E
Dzhabagly 42^{0}25'N 70^{0}28'E
Dzhalanashkol lake 45^{0}33'N 82^{0}08'E
Dzhalganaty river 44^{0}05'N 67^{0}58'E
Dzhambulgora 44^{0}48'N 73^{0}05'E
Dzhambul Mountain 44^{0}48'N 73^{0}05'E
Dzhansugurov 45^{0}39'N 79^{0}50'E
Dzhanybek 49^{0}25'N 46^{0}48'E
Dzharyktau 49^{0}30'N 55^{0}50'E
Dzharkent 44^{0}16'N 80^{0}00'E
Dzhezkazgan 47^{0}46'N 67^{0}41'E
Dzhulek 44^{0}28'N 66^{0}43'E
Dzhungarian Gate 45^{0}15'N 82^{0}34'E
Dzhungarskiy Alatau 45^{0}18'N 80^{0}57'E
Dzhurum 49^{0}15'N 57^{0}35'E
Dzhusaly 45^{0}49'N 64^{0}08'E

E
Elchin-Buyiryuk Mountains 42^{0}41'N 80^{0}06'E
Emba river 48^{0}48'N 58^{0}08'E
Ermak 52^{0}03'N 76^{0}56'E

F
Furmanovo 49^{0}40'N 49^{0}26'E
Furmanovka 44^{0}16'N 72^{0}55'E

G
Galkino 52^{0}23'N 78^{0}33'E
Ganyushkino 46^{0}34'N 49^{0}12'E
Georgievka 43^{0}02'N 74^{0}43'E
Gorel'nik 43^{0}12'N 77^{0}06'E
Gor'kaya river 49^{0}18'N 50^{0}44'E
Granitogorsk 42^{0}43'N 73^{0}27'E

I
Ile river 44^{0}14'N 76^{0}48'E
Ilek river 50^{0}16'N 57^{0}17'E
Ilezkaya steppe 50^{0}50'N 54^{0}00'E
Iliysk 43^{0}59'N 76^{0}59'E
Inder 48^{0}27'N 51^{0}53'E
Irgiz river 49^{0}19'N 60^{0}19'E
Irtysh river 50^{0}24'N 81^{0}00'E
Irtysh-Karaganda channel 51^{0}58'N 76^{0}18'E
Ishim river 52^{0}29'N 66^{0}46'E
Issyk gorge 43^{0}15'N 72^{0}28'E
Issyk river 43^{0}21'N 72^{0}26'E
Ivanovskiy ridge 50^{0}15'N 83^{0}40'E

K

Kaindy river (Altai) 48^{0}49’ N 83^{0}34’ E
Kalbinskiy Altai 49^{0}19’N 83^{0}00’E
Kaldzhir river 48^{0}28’N 85^{0}13’E
Kalmykovo 49^{0}02’N 51^{0}49’E
Kamennoe lake 42^{0}51’N 70^{0}57’E
Kamyshlybash lake 46^{0}11’N 61^{0}56’E
Kamysh-Samarsky lakes 49^{0}13’N 50^{0}28’E
Kapal 45^{0}13’N 79^{0}05’E
Kapchagay 43^{0}51’N 77^{0}03’E
Kapchagay reservoir 43^{0}48’N 77^{0}43’E
Kara-Alakhinskoye upland 49^{0}23’N 86^{0}52’E
Karaaul 48^{0}56’N 79^{0}15’E
Karabuga river 47^{0}55’N 82^{0}51’E
Karabuta 46^{0}54’N 82^{0}40’E
Karabutak river 51^{0}08’N 53^{0}56’E
Karashengel 43^{0}43’N 77^{0}26’E
Kara-Irtysh river 47^{0}50’N 84^{0}41’E
Kara-Kaba river 48^{0}50’N 86^{0}17’E
Karaganda 49^{0}54’N 73^{0}10’E
Karakamysh lake 52^{0}56’N 65^{0}01’E
Kara-Kengir river 47^{0}01’N 68^{0}01’E
Karakol river 47^{0}00’N 82^{0}46’E
Karakum sands 47^{0}25’N 60^{0}34’E
Karaoy 44^{0}16’N 76^{0}10’E
Karzhantau mountains 42^{0}05’N 70^{0}11’E
Karasor lake 52^{0}52’N 74^{0}07’E
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Karatau ridge 44^{0}09’N 51^{0}58’E
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Zyryanovsk 49^{0}44'N 84^{0}15'E

Appendix 3

Results of ringing on Kyzylkol' Lake at 30-31 August and 1-2, 6-8 September 2005

Acrocephalus agricola **Paddyfield Warbler – 51**
Acrocephalus arundinaceus **Great Reed Warbler – 14**
Acrocephalus dumetorum **Blyth's Reed Warbler – 83**
Acrocephalus melanopogon **Moustached Warbler – 2**
Acrocephalus scirpaceus **Reed Warbler – 13**
Actitis hypoleucos **Common Sandpiper – 2**
Alcedo atthis **Common Kingfisher – 3**
Anthus trivialis **Tree Pipit – 2**
Arenaria interpres **Turnstone – 1**
Calidris alpina **Dunlin – 2**
Calidris ferruginea **Curlew Sandpiper – 8**
Calidris minuta **Little Stint – 82**
Calidris temminckii **Temminck's Stint – 1**
Carpodacus erythrinus **Common Rosefinch – 40**
Charadrius alexandrinus **Kentish Plover – 18**
Charadrius dubius **Little Ringed Plover – 1**
Charadrius hiaticula **Ringed Plover – 2**
Galerida cristata **Crested Lark – 2**
Hippolais caligata **Booted Warbler – 32**
Hippolais rama **Sykes' Warbler – 8**
Hirundo rustica **Barn Swallow – 1**
Lanius phoenicuroides **Turkestan Red-tailed Shrike – 9**
Locustella naevia **Grasshopper Warbler – 7**
Luscinia luscinia **Thrush Nightingale – 6**
Luscinia svecica **Bluethroat – 40**
Motacilla cinerea **Grey Wagtail – 2**
Motacilla citreola **Citrine Wagtail – 2**
Motacilla flava **Yellow Wagtail – 25**
Motacilla personata **Masked Wagtail – 1**
Oriolus oriolus **Golden Oriole – 1**
Passer hispaniolensis **Spanish Sparrow – 6**
Passer indicus **Indian Sparrow – 6**
Phalaropus lobatus **Red-necked Phalarope – 2**
Philomachus pugnax **Ruff – 5**
Phylloscopus collybitus **Common Chiffchaff – 30**
Phylloscopus trochiloides **Greenish Warbler – 3**
Pluvialis squatarola **Grey Plover – 1**
Porzana porzana **Spotted Crake – 2**
Porzana pusilla **Baillon's Crake – 1**
Remiz pendulinus **Penduline Tit – 2**
Riparia diluta **Pale Sand Martin – 7**
Sylvia borin **Garden Warbler – 1**
Sylvia communis **Common Whitethroat – 5**
Sylvia curruca **Lesser Whitethroat – 193**

At all for **7** days – **725** birds of **44** species

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Науч. зап. – Научные записки.

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Энтомол. обозр. – Энтомологическое обозрение.
Экол. насек. – Экология насекомых.

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Автореф. -	Автореферат
Акарол. -	Акарология
АН -	Академия наук
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Беспозв. -	Беспозвоночные
Бюлл. -	Бюллетень
Вестн.-	Вестник
Вопр. -	Вопросы
Вост. -	Восточный
Всес. -	Всесоюзный
Высш. -	Высший
Геогр. -	География, Географический
Гос. -	Государственный
Гельминт. -	Гельминтология
Дисс. -	Диссертация
Докл. -	Доклады
Докт. -	Докторский
Дальневост. -	Дальневосточный
Естествозн. -	Естествознание
Ежег. -	Ежегодник, Ежегодный
Журн. -	Журнал
Жив.-	Животный
Зап. -	Западный
Зап. -	Записки
Зоол. -	Зоология, Зоологический
Исслед.-	Исследования
Изв. -	Известия
Изуч. -	Изучение
Ин-т -	Институт
Конф. -	Конференция
Канд. -	Кандидатская
Мат-лы -	Материалы
Междунар. -	Международный
Микроб. -	Микробиология
Муз. -	Музей
Нац. -	Национальный
Науч.-практ. -	Научно-практическая
Насек. -	Насекомые
Обозр. -	Обозрение
Отд. -	Отделение
О-во -	Общество
Почв. -	Почвенный
Пед. -	Педагогический
Пробл. -	Проблемы
паразитол. -	Паразитология, Паразитологический
Раст. -	Растения
Русск. -	Русский
Респ. -	Республиканский
Совещ. -	Совещание
Сев -	Северный
Сер. -	Серия
Сиб. -	Сибирский
Симп. -	Симпозиум
с.-х. -	Сельскохозяйсвенный
Сообщ. -	Сообщение
Тр. -	Труды
Тез. -	Тезисы
Ун-т -	Университет
Фил. -	Филиал
Физиол. -	Физиология, Физиологический
Шк. -	Школа
Экол. -	Экология, Экологический
Энтомол. -	Энтомология, Энтомологический
Эпидемиол.-	Эпидемиология, Эпидемиологический
Юж. -	Южный

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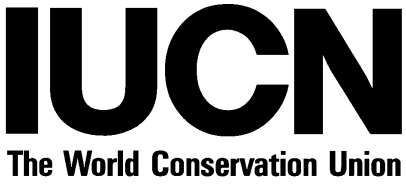

Tethys Ornithological Research II

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