New species of the genus *Epaphiopsis* Uéno, 1953 from China (Coleoptera, Carabidae)

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Summary. 15 new species of the genus *Epaphiopsis* Uéno are described from the southern part of Sichuan Province, China. 10 species belong to the subgenus *Epaphiama* Jeannel: *E. polita* sp.n., *E. similata* sp.n. and *E. intermedia* sp.n. from the mountains southwest of the Bijishan village; *E. laticolle* sp.n. and *E. inconspiqua* sp.n. from the vicinity of Mount Yuanbaoshan; *E. sinuata* sp.n. from the vicinity of Mount Ubaoshan near the Jimi village (all the above localities are situated in the basin of the Lianghegou River, south of the town of Ganluo); *E. dechangensis* sp.n. and *E. lunanshana* sp.n. from the Lunanshan Mountain Range, northeast of Dechang, south of the town of Xichang; *E. proxima* sp.n. from the mountains northwest of the town of Mianning, *E. nigra* sp.n. from the mountains west of the Liziping village, southwest of the town of Shimian. 5 species belong to the subgenus *Pseudepaphius* Uéno: *E. davidiani* sp.n. from the right bank of the Niuzhihe River near the Pouxion village, south of the town of Ganluo; *E. ubaoshana* sp.n. from the vicinity of Mount Ubaoshan, near the village of Jimi, south of the town of Ganluo; *E. korolevi* sp.n. from the eastern slope of the Lunanshan Mountain Range, northeast of Dechang, south of the town of Xichang; *E. robusta* sp.n. from the Xiling Snow Mountains, located not far from Chengdu City; *E. unisetosa* sp.n. from the basin of the Lianghegou River, southwest of the Jimi village, south of the town of Ganluo. A morphometric analysis of available *Epaphiopsis* species is carried out and new data on the distribution of *E. gonggaica* (Deuve) are given. Some species groups are considered and some new are proposed.

In recent years a number of new *Epaphiopsis* Uéno, 1953 species have been described from the mainland of China (Deuve, 1988, 1992, 1995, Uéno et Yu, 1997, Uéno, 1998). Some of these exhibit combinations of features that do not match perfectly the subgeneric diagnoses. Along with a restricted number of species known this hampers a better understanding of the taxonomy of the genus. The present paper focuses on new *Epaphiopsis* species and to a certain extent prepares the basis for a more natural arrangement of Chinese species in the future.

The measurements used here are the same as in our previous articles (e.g. Belousov & Kabak, 2000). The body length was measured without mandibles, the width of the pronotal base at the narrowest point, and both the discal and umbillicate formulae are given in percent of the length of elytra measured from the anterior termination of the basal border. Under 'material' section, the number of specimens studied is followed by the number of genitalic preparations given in parentheses.

Abbreviations used in the text are:

ZISP = Zoological Institute of Russian Academy of Sciences, St.-Petersburg;

IZK = Institute of zoology of Ministry of Science and Education of Kazakhstan, Almaty;

MPU = Pedagogical University of Moscow;

cAG = collection of A. Gitzen, Neuhofen;

cAK = collection of A. Koval, St. Petersburg;

cBK = collection of the authors, St. Petersburg;

cPM = collection of P. Moravec, Litomeřice;

cVZ = collection of V. Zieris, Pardubice;

AL = length of antennae;

EL = length of elytra;

EW = width of elytra;

EyL = length of eye;

HW = width of head;

L3 = length of antennomere 3;
PA = width of pronotum at anterior margin;
PB = width of pronotum at base;
PL = length of pronotum;
PW = width of pronotum;
TL = length of tempora (=gena);
x* = mean.

Genus *Epaphiopsis* Uéno, 1953

Epaphiopsis Uéno, 1953: 32, type species: *Epaphiopsis fukukii* Uéno, 1953.

The genus was thoroughly described by S.-I. Uéno (1953). So we give here only a brief description with special accent to some characters which will be in the focus of issues discussed in this article.

Mandibles tridentate, premolar however sometimes partly fused with remainder of mandibular tooth. Labial tooth variable, often bifid though not always well-defined and protruding. 6 submental setae. Submental suture rather distinct. Ligula sex- or octasetose. Genae glabrous or pubescent. Two basal segments of male protarsi very strongly dilated and provided with adhesive appendages beneath. Foretibiae grooved externally and glabrous on anterior surface.

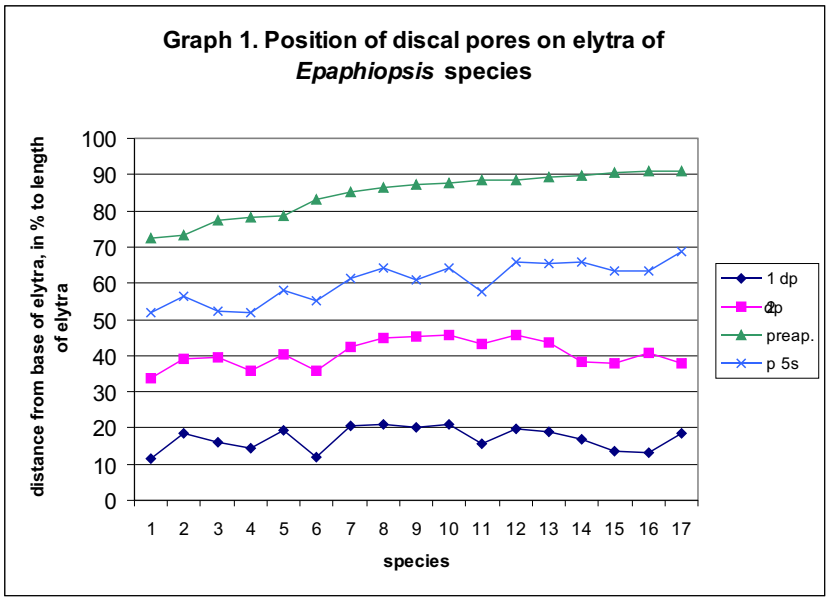
Elytral chaetotaxy: 2 discal setiferous pores in stria 3 and one in stria 5, in apical half of elytra. Exterior pore varying in position, often displaced on interspace 5. Preapical pore usually in stria 2 or in its sinuation, more or less strongly removed from elytral apex. Apical cross usually lacking. Umbilicate series perfectly aggregated and attached to marginal bead of elytra, divided into three usual groups, of which the humeral one is represented by 4 approximately equidistant pores.

Bearing in mind a great taxonomic importance of the elytral chaetotaxy, we would like to consider more thoroughly some aspects of this issue. In Table 1 are shown the correlations in the position of the two discal pores, preapical pore and setiferous pore in stria 5, calculated for all available species of *Epaphiopsis*.

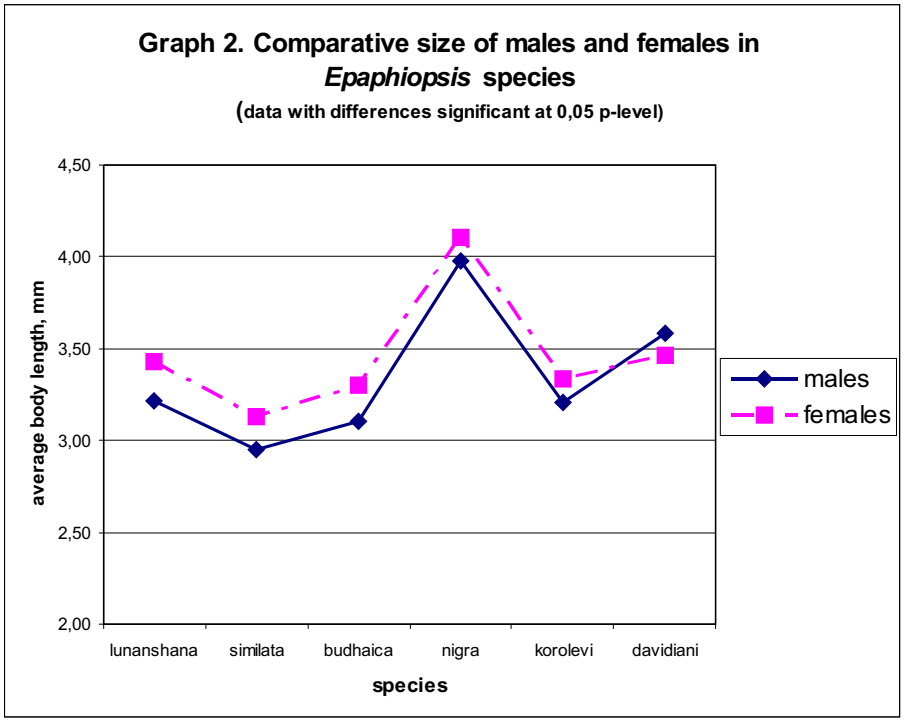
Table 1. Correlations in position of discal pores on elytra in *Epaphiopsis,* marked correlations are significant at $p < 0.05$.

	1st discal pore	2nd discal pore	preapical pore	pore in stria 5
1st discal pore (1 dp)	1,00			
2nd discal pore (2 dp)	**0,78**	1,00		
preapical pore (preap.)	0,22	**0,49**	1,00	
pore in stria 5 (p 5s)	**0,51**	**0,53**	**0,84**	1,00

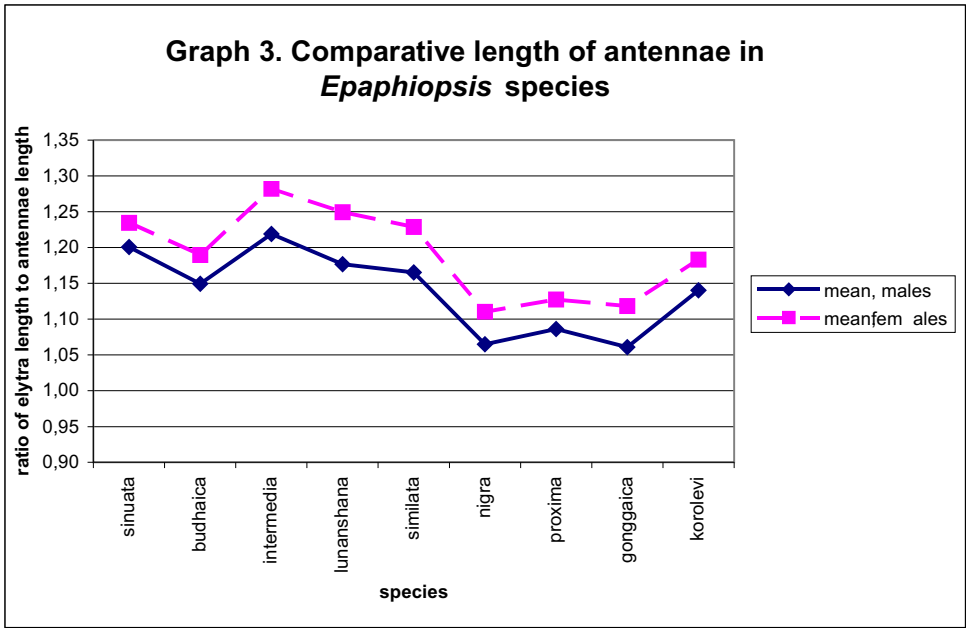
These data reveal that the position of the setiferous pore in stria 5 is strongly correlated with the positions of both the posterior discal pore and especially the preapical one. The data on the position of the discal pores adjusted for the range between the anterior discal pore and preapical one allow concluding that the pore in stria 5 is located approximately in the middle between the levels of the posterior discal pore and preapical one. Interspecifically, the preapical pore and the pore in stria 5 are much more varying in position than other discal pores (range is about 20% vs. approximately 10% in other pores). Being strongly correlated with each other they seem to represent only one character state. All these conclusions may be illustrated by Graph 1.



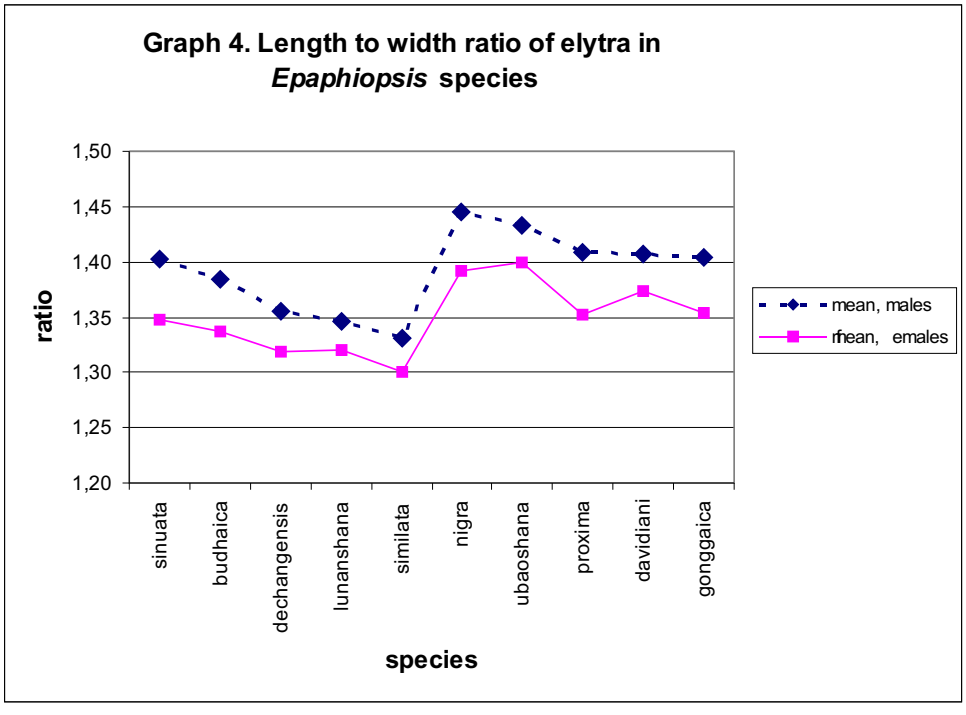
In order to correctly interpret interspecific morphometric differences, it is important to take into account sexual dimorphism in *Epaphiopsis* species. In Graph 2, the data are given on the relative body size of males and females for the species with sex differences significant at p-level <0.05. It is quite clear that the main pattern is directly opposite to that of most *Trechus* Clairv., in which males are usually larger than females.



Similarly to *Trechus* species, the males of *Epaphiopsis* have the eyes of larger size, in all the cases when differences observed were significant at 0.05 p-level, the ratios of the eye diameter to the length of the gena and antennomere 3 were by 0.05-0.10 larger in the males than in the females. Analogously, the males possess the somewhat longer antennae what is evident from the data given in Graph 3.



At last, the males of *Epaphiopsis* are distinct in having the more elongate elytra, as one can see from Graph 4.



The genus is split in several subgenera based mainly on the chaetotaxy of the pronotum as well as on the presence and position of the preapical pore. Recent new discoveries of the genus members in mainland China show that the above characters are of minor importance than it was generally believed. Their strict application to Chinese species may lead to unsatisfactory results. In this case, some closely related species forming a natural species group, might have to be assigned to different subgenera. For the moment, at least two such examples were recorded in the literature: *E. budhaica* (Deuve) with the anterior position of the preapical pore but doubtless closely related to some *Epaphiama* characterized by its normal position, and *E. gonggaica* (Deuve) that seems to be related to *E. perreaui* Deuve (Uéno, 1998) but possesses the preapical pore in "apical" position, often in the apical anastomosis of striae 2 and 3. We have found 3 more species that complicate still further this situation. On the other hand, we have discovered a species of *Epaphiopsis* with a single discal seta on the pronotum which fill to a certain extent the gap between *Epaphiopsis* s.str. and *Formosiellus* Uéno, 1989 on one side and the remaining subgenera on the other.

All these data incline us to refrain from making nomenclatural changes in waiting for additional discoveries. Therefore, the assignment to different subgenera in this paper follow tradition and do not pretend to be natural.

Subgenus *Epaphiama* Jeannel, 1962

Epaphiama Jeannel, 1962: 188, type species - *Epaphiama semenovi* Jeannel, 1962.

Epaphiama Jeannel was erected as a genus for a single species – *E. semenovi* Jeannel, 1962 based under others characters on the absence of the preapical pore of elytra and the presence of a setiferous pore in stria 5. Later, S.-I. Uéno (1978) found that all the specimens of the type series of *E. semenovi* possess the preapical seta located within the field of apical striole. The type species of the genus, therefore, is characterized by a complete state of the apical triangle. S.-I. Uéno proposed to consider *Epaphiama* as a subgenus of the genus *Epaphiopsis* Uéno, 1953, close to the third subgenus known at that time – *Pseudepaphius* Uéno, 1962. The new subgenus was distinguished from all the known *Pseudepaphius* by the posterior position of the preapical pore on the elytra (apical anastomosis may be present or not), cryptozoic appearance and other features of minor importance. Further discoveries, however, have shown that the semiendogean way of life is characteristic of only the northernmost members of *Epaphiama* and can not be regarded as a diagnostic feature of the subgenus. Thus, only one character, the position of the preapical pore, may be used as a diagnostic feature for discriminating *Epaphiama* from *Pseudepaphius*.

All members of the subgenus in question may be re-arranged into several groups according to both external and genitalic characters. For the time being, the *semenovi* group is considered here to include two northern species: *E. semenovi* Jeannel, 1962 from the Russian Far East and *E. jacobsoni* Sokolov & Shilenkov, 1987 from the Altai Mountains. Members of the group are characterized by the large size and microcavernicolous "duvalioid" appearance with elongate body, slender appendages and subcordiform pronotum (lateral sides are distinctly sinuate before hind angles). The aedeagi of these species are distinct in having heavily sclerotized scaly mats in the endophallus and more or less strongly attenuate apical lobe. For the time being, we prefer to not split this group into two different groups and to place *E. lamellata* Uéno & Yu, 1997 from Hubei near *E. jacobsoni* within their own group. Moreover, we do not think that the Altai species is much closer to the Hubei one than to the Far East species. All the three species share the same general pattern of the aedeagal structure with heavily sclerotized scaly patch in the endophallus armature. Additionally *E. semenovi* and *E. lamellata* have similarly shaped aedeagal apex, and the Chinese species differs drastically from both Russian species (and especially from *E. jacobsoni*) in its not "duvalioid" facies. At last, the zoogeographical connection between the Altai and Far East faunas is almost a commonplace and it seems much more promising to find traces of this connection along southern East Siberian Mountains than in central China. Nonetheless, this viewpoint does not exclude a possibility of the peripheral segregation of the Far East species. So it seems better to keep a separate group for large "duvalioid" species from Russia and to regard *E. lamellata* as allied

unspecialized species filling the gap between the *semenovi* group and other consubgeners from the mainland of China. In such a way we keep a general idea about relationships within the subgenus considered and avoid the situation when the number of groups is almost equal to the number of species.

The *brevis* group from Hokkaido seems to be closely related to the preceding one and also exhibits some adaptations to semiendogean habitats, including more or less strongly degenerated eyes in some taxa. The members of this group are not so large and elongate as the species of the *semenovi* group. Within the group, there are two types of male genitalia differing by the degree of apical attenuation of the median lobe. The endophallus armature is also represented by scaly patch but clearly less strongly sclerotized as in members of the previous group. It is noteworthy that the type of aedeagus is not correlated with external peculiarities reflecting the degree of subterranean adaptation (Uéno, 1978). So the division of this group into two subgroups may be made only on the basis of male genitalia (*brevis* and *oligops* groups, according to Uéno & Yu, 1997). The *Epaphiama* species discovered in the mainland of China in recent years including those described below, have not demonstrate any adaptations to subterranean way of life and are distinct in this respect from the groups considered above. These species are rather homogenous in their external characters or at least do not exhibit clearly defined patterns, but they may be assigned to different groups on the basis of genitalic characters.

Firstly, we should cite the *niba* species group, established by S.-I. Uéno (1998). The group is characterized by the specifically modified arcuate median lobe of the aedeagus with a very long scaly patch and plate in the endophallus armature (for details, see below). Until now this group seemed to be strongly separated from other species of the subgenus. But some new species described below bridge the gap between the *niba* group and other species of *Epaphiama* including *E. lamellata* Uéno & Yu and *E. gonggaica* (Deuve).

Secondly, we have to define the *laticolle* species group (see below) embracing species with small and slightly sclerotized saddle-like endophallus armature. Externally all the species of this group are typical unspecialized *Epaphiama* with the usual apical position of the preapical pore. This group is of great phylogenetic significance since it allows us to connect different groups of *Epaphiama* with each other. So the members of this group are very similar to the *similata* group defined below and through it may be connected to the species of the *niba* group on the one side and to *E. lamellata* on the other. But particularly important is that this group shows a certain resemblance in the structure of the aedeagus with the *gonggaica* group. For an in depth discussion on the systematic position of the *gonggaica* group, see "*E. gonggaica* group" section under "Subgenus *Epaphiama*".

The *niba* species group

This group was established by S.-I. Uéno (1998) for a complex of species characterized by the peculiar structure of the aedeagus: the median lobe is arcuate, thick at basal part, slender elsewhere, endophallus armature consisting of a long lamella overlapped by a long scaly patch. Since the first described species of the group, *E. budhaica* (Deuve, 1988), is aberrant in the position of the preapical pore, S.-I. Uéno (1998) proposed to name the group after *E. niba* Uéno.

Epaphiopsis (*Epaphiama*) *budhaica* (Deuve)

Epaphiama budhaica Deuve, 1988: 256, fig. 6 (type locality – Mont Emei).
Epaphiopsis (*Epaphiama*) *budhaica*: Uéno, 1998.
Pseudepaphius perreaui: Sciaky, 1995: 67, fig. 4.

The species was thoroughly described by Th. Deuve (1988) and S.-I. Uéno (1998). So we content ourselves with giving here only proportions calculated on the basis of material available for us.

Material: 14(7) ♂, 15(2) ♀ (ZISP, IZK, MPU, cAG, cAK, cBK, cPM, cVZ), China, S Sichuan, Emei Shan Mt., crest-line, H~2950 m, 20.05.2000 (Belousov & Korolev leg.).

19 specimens measured.

Body length 2.99-3.46 mm, males on average smaller, x*=3.10 mm vs. 3.30 mm in females.

Head very small (PW/HW: 1.35-1.45, in males on average bigger, x*=1.37 vs. x*=1.40 in females). Eyes medium-sized (EyL/L3: 1.10-1.41, x*=1.28), 1.53-2.60 (x*=2.03) times as long as temples. Antennae of medium length (EL/AL: 1.11-1.25, x*=1.15 in males vs. x*=1.19 in females), their third segment 1.50-1.83 (x*=1.69) times as long as wide, and 1.02-1.18 (x*=1.09) times as long as antennomere 2.

Pronotum transverse (PW/PL: 1.37-1.47, x*=1.41), moderately constricted toward base (PW/PB: 1.25-1.38, x*=1.32). Base of pronotum average (PB/PA: 1.00-1.14, x*=1.05).

Elytra very small (EW/PW: 1.28-1.40, x*=1.33; EW/HW: 1.78-1.97, in males smaller, x*=1.81 vs. x*=1.88 in females); very broad (EL/EW: 1.32-1.44, in males on average narrower, x*=1.38 vs. x*=1.34 in females). Anterior discal pore in usual position, posterior discal pore strongly shifted anteriad, preapical pore located far from elytral apex, discal formula 17-21 (19), 35-45 (40), 72-86 (79); formula for outer setiferous pore 51-65 (58). Formula of umbilicate series 7,13,18,25,56,63,79,88.

The *laticolle* species group

A group of medium-sized *Epaphiama* (body length 3.25-4 mm) characterized by arcuate aedeagus with small and feebly sclerotized saddle-like endophallus armature. Pronotum of all known species with large, more or less acute hind angles pointed apically. Basal margin of pronotum straight, only slightly emarginate on sides. Preapical pore located within the field of apical striole, usually adjoining stria 2. Apical anastomosis present or not.

For the time being, the group includes only 4 species, of which *E. polita* sp.n. is classified in this group with certain reservations. All known species are recorded from southern Sichuan.

Epaphiopsis (*Epaphiama*) *polita* Belousov & Kabak, sp.n.

Figs 1, 17.

Holotype: ♂ (ZISP), China, S Sichuan, 5 km SW Bijishan village, sources of Lianhegou (=Lianghegou) River, 2750 m, 19.06.2000 (Belousov & Kabak leg.) [28º 33' N / 102º 46' E].

Paratype: 1 ♂ (cBK), collected together with holotype.

2 specimens measured.

Description. Large-sized species, body length 3.66-3.80 mm. Habitus robust, dorsum evenly and moderately convex. Appendages thick. Color of dorsum dark brownish, with blackish disc of pronotum and elytra, suture and margins of the latter lighter. Legs and antennae uniformly yellowish. Surface slightly iridescent.

Head small (PW/HW: 1.34-1.36). Frontal furrows irregularly arcuate, becoming deeper both anteriad and posteriad. Eyes subconvex, of medium size (EyL/L3: 1.25-1.29). Genae moderately convex, with a few hairs. Supraorbital setae located on axis parallel to mid-line of body. Anterior supraorbital seta foveolate, with a small wrinkle mediad of it. Antennae of medium length (EL/AL: 1.19-1.22); their third segment 1.90-2.00 times as long as wide and 1.30-1.33 times as long as antennomere 2. Premolar on right mandible clearly separated from the remainder of mandibular tooth, the base of which is rather long.

Pronotum (Fig. 17) subconvex, of medium width (PW/PL: 1.33-1.38), its maximal width about mid-length; moderately constricted toward base (PW/PB: 1.31). Lateral sides evenly and broadly arcuate, deeply sinuate before hind angles; latter not large, rectangular or slightly acute, pointed apically. Anterior angles distinct. Base of pronotum relatively broad (PB/PA: 1.10-1.11). Basal margin rectilinear, emarginate on sides near hind angles. Anterior margin straight. Lateral margins averagely beaded and slightly reflexed, more strongly in posterior half. Prebasal transverse impression shallow, distinctly curved near basal foveae, consisting mostly of two irregular impressions on each side of pronotum. Apical transverse impression finely delimited, close to anterior margin. Except for the above

impressions, basal surface smooth. Basal foveae deep. Median line markedly impressed near base of pronotum. Discal foveae wanting.

Elytra oblong-ovate, small-sized (EW/PW: 1.45-1.46; EW/HW: 1.96-1.98); broad (EL/EW: 1.40-1.41) and subconvex. Shoulders moderately salient, basal border of elytra almost perpendicular to longitudinal axis of body, elytral apex very broadly arcuate, almost truncate. Lateral margins of elytra averagely reflexed, a little less than that of pronotum near hind angles. Elytral striae lightly but evenly impressed, outer striae beginning with stria 5 evanescent; all striae finely punctured. Stria 2 traceable to outer setiferous pore of apical triangle. Striae 2 and 3 without distinct junction on apical slope. Intervals flat. Scutellar striole sharply engraved, rather short. Apical striole of moderate length, weakly arcuate and slightly curved toward either stria 3 or 5 anteriorly. Anterior discal pore slightly, posterior one strongly shifted anteriad, preapical pore normal in position, located behind anterior termination of apical striole. Discal formula 18-19, 36-41, 90-92.. Discal pore of stria 5, as a rule, set on interspace 5, its formula 68-69. Formula of umbilicate series 6,11,16,22,61,67,82,87. Apical triangle subequilateral, barely elongate.

Microsculpture comprised of rough isodiametric meshes on head, fine irregular transverse meshes on pronotum and transverse lines on elytra, faint medially on disc of pronotum and head.

Foretibiae slightly grooved externally, glabrous on anterior surface.

Aedeagus (Fig. 1) comparatively large, weakly arcuate, with straight attenuated apex in lateral view. Basal orifice deeply emarginate. Viewed dorsally, apical lamella asymmetrical and triangular in shape. Sagittal aileron very large. Parameres narrow, left one much longer and provided with large ventral apophysis beneath, each paramere with 4 apical setae. Endophallus armature hyaline, rather long but feebly sclerotized.

Diagnosis. The new species seems to be rather strongly isolated within the subgenus. In attenuated lamella, its aedeagus resembles remotely to that of *E. lamellata* Uéno et Yu (Uéno & Yu, 1997). But its affinities with some of the new species described below appear to be more significant. In any case, the species is highly distinctive in having smooth dorsum with weakly striate elytra.

Distribution. This species is known only from the type locality situated 5 km southwest of the Bijishan village, in the sources of the Lianghegou River, south of the town of Ganluo, southern Sichuan.

Habitats. The species was collected in the forest litter at an 2750 m elevation.

Epaphiopsis (*Epaphiama*) *laticolle* Belousov et Kabak, sp.n.

Figs 2, 18.

Holotype: ♂ (ZISP), China, S Sichuan, NW of Mt. Yuanbaoshan, right bank of Lianhegou (=Lianghegou) Riv., 3850-3900 m, 22.06.2000 (Belousov & Kabak leg.) [28º 36’ N / 102 º 53’ E].

Paratypes: 2(2) ♂, 4 ♀ (ZISP, IZK, cAG, cBK), collected together with holotype. — 2(2) ♂ (cBK), China, S Sichuan, NW of Mt. Yuanbaoshan, right bank of Lianhegou River, 3550-3600 m, 20.06.2000 (Belousov & Kabak leg.) [28º 36’ N / 102º 52’ E]. — 1(1) ♂, 1 ♀ (cBK), China, S Sichuan, NE of Mt. Yuanbaoshan, Lianhegou River, 3300 m, 23.06.2000 (Belousov & Kabak leg.) [28º 36’ N / 102º 54’ E].

10 specimens measured.

Description. Large-sized species, body length 3.26-3.83 mm, males on average larger, x*=3.72 mm vs. x*=3.61 mm in females. Habitus robust, dorsum evenly and moderately convex. Appendages thick. Color of dorsum from reddish brown to blackish; pronotum on base and near apex; suture, margins, and sometimes base and apical slope of elytra lighter, reddish. Legs and antennae uniformly yellowish. Surface distinctly iridescent.

Head very small (PW/HW: 1.34-1.44, in males on average smaller, x*=1.42 vs. x*=1.38 in females), strongly convex in posterior part. Eyes subconvex, medium-sized (EyL/L3: 1.03-1.21, x*=1.14). Genae weakly convex, with a few distinct hairs. Frontal furrows rather regularly arcuate, moderately impressed, becoming deeper both anteriad and posteriad. Anterior supraorbital seta strongly foveolate and set clearly mediad of posterior one. Antennae of medium length (EL/AL: 1.15-1.22, x*=1.18), their third segment 2.00-2.21 (x*=2.10) times as long as wide and 1.12-1.28 (x*=1.18) times as long as antennomere 2.

Pronotum (Fig. 18) convex, transverse (PW/PL: 1.39-1.48, x*=1.44), its maximal width about mid-length; moderately constricted toward base (PW/PB: 1.29-1.35, x*=1.32). Lateral sides evenly and broadly arcuate, deeply sinuate before hind angles; latter rather large, mostly acute, rarely rectangular, produced distinctly outward, pointed apically. Anterior angles weakly salient. Base of pronotum relatively broad (PB/PA: 1.03-1.15, x*=1.10). Basal margin rectilinear or slightly bisinuate. Anterior margin barely concave. Lateral margins averagely beaded and slightly reflexed, more strongly posteriorly. Prebasal transverse impression rather shallow, distinctly curved near basal foveae, with one or few irregular impressions on each side of pronotum in addition to median line impression. Apical transverse impression shallow, distinct laterally, evanescent medially, set closely to anterior margin. Basal surface obliquely rugose. Basal foveae deep though not sharply outlined. Discal foveae lacking. Median line rather deep in middle, not reaching anterior margin of pronotum.

Elytra oblong-ovate, not large (EW/PW: 1.36-1.42, x*=1.38; EW/HW: 1.86-2.00, in males on average bigger, x*=1.95 vs. x*=1.92 in females); broad (EL/EW: 1.36-1.41, x*=1.39), moderately convex or even depressed along suture. Shoulders moderately salient, basal border of elytra almost perpendicular to longitudinal axis of body; elytral apex very broadly rounded, almost truncate. Lateral margins of elytra averagely reflexed, a little less than that of pronotum near hind angles. Elytral striae deep and rather evenly impressed, even outer striae distinct though becoming shallower anteriorly and posteriorly; all striae clearly punctured. Stria 4 usually joining stria 6 on apical slope of elytra. Intervals subconvex. Both scutellar and apical strioles sharply engraved, rather long. Anterior discal pore slightly, posterior one strongly shifted anteriad, preapical pore normal in position, located in stria 2, without connection with stria 3, at level near anterior termination of apical striole. Discal formula 18-23 (20), 42-50 (46), 86-91 (89). Outer discal pore usually in stria 5, its formula 63-69 (66). Formula of umbilicate series 6,11,16,21,58,64,80,88. Apical triangle elongate, its inner side almost parallel to elytral suture.

Microsculpture comprised of isodiametric meshes on head, irregular transverse meshes on pronotum and transverse lines on elytra, faint medially on disc of pronotum and head.

Aedeagus (Fig. 2) of medium size, moderately arcuate, with apical lamella distinctly attenuated downward and slightly hooked in lateral view, relatively long, parallel-sided and triangular at apex in dorsal view. Distal orifice ample, sides of basal orifice deeply emarginate. Sagittal aileron well developed. Parameres rather stout, left one a little longer, weakly deflexed, with ventral apophysis, each paramere bearing 4 apical setae. Endophallus armature small, saddle-like, placed approximately in middle of median lobe.

Diagnosis. The new species is relatively similar to the preceding species, but may be easily distinguished by its much deeper striation of elytra and rugose basal surface of pronotum. In both the above characters as well as in the structure of the male genitalia , *E. laticolle* sp.n. appears to be much closer to *E. inconspiqua* sp.n. and *E. dechangensis* sp.n. described below.

Distribution. This species is known only from the immediate vicinity of Mount Yuanbaoshan in the basin of the Lianghegou River, south of the town of Ganluo, southern Sichuan.

Habitats. *E. laticolle* sp.n. was collected in a wide belt of altitudes from 3300 m up to 3900 m, mostly in the forest litter. The species seems to be more seldom as compared with other sympatric members of the genus.

Epaphiopsis (*Epaphiama*) *inconspiqua* Belousov et Kabak, sp.n.

Fig. 3.

Holotype: ♂ (ZISP), China, S Sichuan, NW of Mt. Yuanbaoshan, right bank of Lianhegou (=Lianghegou) Riv., 3850-3900 m, 22.06.2000 (Belousov & Kabak leg.) [28º 36' N / 102 º 53' E].

Paratypes: 1(1) ♂, 2 ♀ (cBK), collected together with holotype.

4 specimens measured.

Description. Large-sized species, body length 3.48-3.78 mm, males larger, 3.61-3.78 mm vs. 3.48-3.58 mm in females. Habitus robust, dorsum subconvex. Appendages thick. Color of dorsum from reddish brown to blackish; pronotum on base and near apex, elytral suture, margins, and sometimes base and apical slope of elytra lighter, reddish. Legs and antennae uniformly yellowish. Surface distinctly iridescent.

Head very small (PW/HW: 1.34-1.44, x*=1.39), strongly convex in posterior part. Eyes subconvex, medium-sized (EyL/L3: 0.98-1.22, x*=1.05). Genae weakly convex, with a few distinct hairs. Frontal furrows rather regularly arcuate, moderately impressed, becoming deeper both anteriad and posteriad. Anterior supraorbital seta strongly foveolate and located clearly mediad of posterior one. Antennae of medium length (EL/AL: 1.15-1.21 in males and 1.15-1.17 in females), their third segment 1.91-2.13 (x*=2.05) times as long as wide and 1.17-1.24 (x*=1.20) times as long as antennomere 2. Premolar on right mandible well defined.

Pronotum convex, transverse (PW/PL: 1.38-1.45, x*=1.41), its maximal width about mid-length; moderately constricted toward base (PW/PB: 1.28-1.33, x*=1.30). Lateral sides evenly and broadly arcuate, deeply sinuate before hind angles; latter rather large, mostly acute, rarely rectangular, produced distinctly outward, pointed apically. Anterior angles weakly salient. Base of pronotum relatively broad (PB/PA: 1.13-1.15 in males and 1.11-1.12 in females). Basal margin rectilinear or slightly bisinuate. Anterior margin barely concave. Lateral margins averagely beaded and slightly reflexed, more strongly posteriorly. Basal transverse impression rather shallow, with one or few irregular impressions on each side of pronotum in addition to median line impression. Apical transverse impression shallow, distinct laterally, evanescent medially, set closely to anterior margin. Basal surface either smooth or with a few wrinkles. Basal foveae deep though not sharply outlined, basal transverse impression distinctly curved near these. Discal foveae lacking. Median line rather deep in middle, not reaching anterior margin of pronotum.

Elytra oblong-ovate, small (EW/PW: 1.44-1.45 in males and 1.38 in females; EW/HW: 2.00-2.03 in males and 1.85-1.98 in females); broad (EL/EW: 1.39-1.40 in males and 1.35-1.37 in females), averagely convex or even depressed along suture. Shoulders moderately salient, basal border of elytra almost perpendicular to longitudinal axis of body, elytral apex very broadly rounded, almost truncate. Lateral margins of elytra averagely reflexed, a little less than that of pronotum near hind angles. Elytral striae deep and rather evenly impressed, even outer striae distinct though becoming shallower anteriorly and posteriorly; all striae markedly punctured. Stria 4 usually joining stria 6 on apical slope of elytra. Intervals subconvex. Both scutellar and apical strioles sharply engraved, rather long. Anterior discal pore slightly, posterior one strongly shifted anteriad, preapical pore normal in position, located at level near anterior termination of apical striole, in sinuate part of stria 2, but the latter without connection with stria 3. Discal formula 18-20 (19), 41-46 (44), 86-92 (89). . Outer discal pore usually in stria 5, its formula 58-70 (65). Formula of umbilicate series 6,11,16,21,59,64,80,87. Apical triangle elongate, its inner side almost parallel to longitudinal axis of body.

Microsculpture comprised of isodiametric meshes on head, irregular transverse meshes on pronotum and transverse lines on elytra, faint medially on disc of pronotum and head.

Aedeagus (Fig. 3) relatively large, moderately and evenly arcuate, with distinctly hooked apex. Apical lamella short and triangular in dorsal aspect. Distal orifice ample, basal orifice with sides barely emarginate. Sagittal aileron small. Parameres slender, left one clearly longer, with long and narrow ventral apophysis, each paramere with 4 apical setae. Endophallus armature small, saddle-like, placed approximately in middle of median lobe.

Diagnosis. Doubtless the new species is most closely related to *E. laticolle* sp.n., sharing with it all the most important external and genitalic characters. Externally *E. inconspiqua* sp.n. differs by its somewhat smaller size, more convex and smaller pronotum, less strongly contrasting color of the appendages and dorsum, smaller eyes, more plane temples. But a reliable recognition of this species is possible only on the basis of the male genitalia. The aedeagus is considerably longer (Fig. 3 vs. Fig. 2), its apical half much more

slender in lateral view and not constricted in dorsal view, apex not attenuated downward, lamella without parallel-sided proximal portion, basal orifice without emargination. In addition, the sagittal aileron is considerably smaller, and the parameres are much more slender. Despite of clear differences in the aedeagal shape, the endophallus armature is principally of the same structure, only a bit longer, especially along the left wall of the aedeagus.

Distribution. This species is known only from the vicinity of Mount Yuanbaoshan in the basin of the Lianghegou River, south of the town of Ganluo, southern Sichuan. It is worth noting that this species was found sympatrically with high-altitude populations of *E. laticolle* sp.n.

Habitats. The species was collected in the forest litter at an elevation of 3850-3900 m a.s.l.

Epaphiopsis (*Epaphiama*) *dechangensis* Belousov et Kabak, sp.n.

Figs 4, 19.

Holotype: ♂ (ZISP), China, S Sichuan, S of Xichang, crest SE of Mt. "4282" (NE of Dechang), 3800-3900 m, 4.05.2001 (Belousov & Korolev leg.) [27º 32' N / 102º 22' E].

Paratypes: 4(4) ♂, 6 ♀ (cAG, cBK), collected together with holotype. — 1(1) ♂, 1(1) ♀ (cBK), China, S Sichuan, S of Xichang, E slope of Mt."4282" (NE of Dechang), 3800-3200 m, 5.05.2001 (Belousov & Korolev leg.).

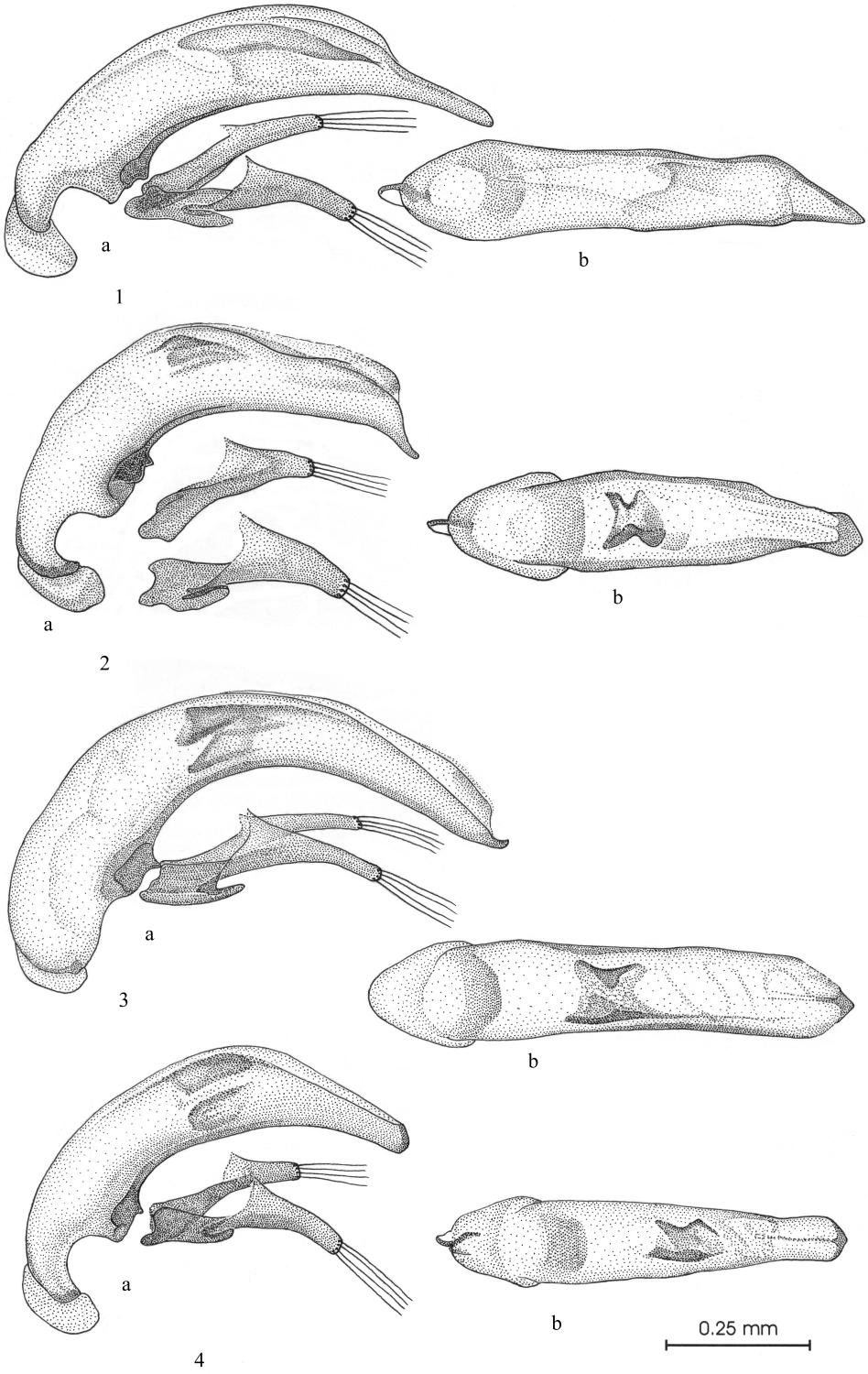
13 specimens measured.

Description. Large-sized species, body length 3.41-3.97 mm, males on average smaller, x*=3.69 mm vs. x*=3.75 mm in females. Habitus robust, broadly ovate, dorsum convex. Appendages thick. Color of upper-side reddish brown, posterior part of head and disc of elytra darkest; suture and margins of elytra lighter, reddish or sometimes yellowish. Legs and antennae uniformly yellowish. Surface distinctly iridescent.

Head very small (PW/HW: 1.42-1.50, x*=1.45). Eyes small and weakly convex (EyL/L3: 0.96-1.14, x*=1.04). Genae feebly convex, with a few hairs. Frontal furrows regularly arcuate. Antennae of medium length (EL/AL: 1.15-1.25, x*=1.19), their third segment 1.90-2.40 (x*=2.08) times as long as wide and 1.11-1.28 (x*=1.19) times as long as antennomere 2. Premolar on right mandible well separated from remainder of mandibular tooth.

Pronotum (Fig. 19) convex and transverse (PW/PL: 1.35-1.46, x*=1.41), its maximal width about mid-length; moderately constricted toward base (PW/PB: 1.29-1.39, x*=1.33 in males vs. x*=1.36 in females). Lateral sides evenly and broadly arcuate, clearly sinuate just before hind angles; latter rather large, rectangular to acutangular, produced outward and even a little backward, pointed apically. Anterior angles slightly salient. Base of pronotum relatively broad (PB/PA: 1.03-1.11, x*=1.07), basal margin almost straight or weakly bisinuate. Anterior margin rectilinear or barely concave. Marginal bead of pronotum rather narrow throughout, expanded only near hind angles. Basal transverse impression deep laterally, shallow medially, with a well-defined fovea each side of median line; angulate near basal foveae; latter large and deep. Apical transverse impression shallow, distinct laterally, evanescent medially, set closely to anterior margin. Basal surface slightly rugose. Median line distinct, well impressed in middle, deepest near base, not reaching anterior margin.

Elytra broadly ovate and moderately convex (EW/PW: 1.40-1.48, x*=1.45; EW/HW: 2.00-2.20, x*=2.12 in males vs. x*=2.09 in females; EL/EW: 1.30-1.38, in males on average longer, x*=1.36 vs. 1.32 in females). Elytra very wide at their base, a little attenuate in apical part. Shoulders strongly protruding, then sides broadly arcuate, elytral apex comparatively narrowly rounded. Lateral margins narrowly beaded and reflexed. All elytral striae deep and strongly punctured. Inner intervals rather narrow and subconvex. Apical striole average, usually directed to stria 3. Anterior discal pore slightly, posterior one strongly displaced anteriad, preapical pore in apical anastomosis of striae 2 and 3, always behind anterior termination of apical striole. Discal formula 15-19 (17), 35-43 (38), 89-91



Figs 1-4. Aedeagus of *Epaphiopsis* spp. a - lateral view; b - dorsal view. 1 - *E*. (*Epaphiama*) *polita* sp.n.; 2 - *E*. (*Epaphiama*) *laticolle* sp.n.; 3 – *E*. (*Epaphiama*) *inconspiqua* sp.n.; 4 - *E*. (*Epaphiama*) *dechangensis* sp.n.

(90). Outer discal pore usually in stria 5, its formula 61-68 (66). Formula of umbilicate series 7,11,16,21,60,66,80,88. Apical triangle moderately elongate, angulo-apical pore farther removed from suture than preapical one.

Microsculpture comprised of isodiametric meshes on head, irregular transverse meshes on pronotum and transverse lines on elytra, faint medially on disc of pronotum and head.

Aedeagus (Fig. 4), of medium size, stout and slightly arcuate, with almost straight and obtuse apex. In dorsal view, its apical portion narrowed and parallel-sided; apical lamella very short and triangular. Basal orifice deeply emarginate. Sagittal lobe large. Parameres average, the left distinctly longer and more strongly curved, provided with ventral apophysis, each paramere with 4 apical setae. Endophallus armature rather small, moderately sclerotized, saddle-shaped.

Diagnosis. Doubtless the new species is most closely related to *E. laticolle* sp.n. This viewpoint is especially ascertained by the similarity in the male genitalia: the dorsal projection of the median lobe is quite identical, with a characteristic apical constriction; the endophallus armature is of the same shape. Nonetheless the new species is readily distinguishable by its deeper striation of the elytra; more strongly produced hind angles of the pronotum; less strongly rugose base of the pronotum, narrower marginal gutter of the latter; and clearly attenuate apical portion of the elytra. The aedeagus is distinctive in its blunt apex in lateral projection (Fig. 4 vs. Fig. 2).

Distribution. This species is known only from the crest-line of a mountain ridge, situated near peak "4282" in the Lunanshan Mountain Range, northeast of Dechang, south of Xichang, southern Sichuan.

Habitats. The species occurs in the upper forest zone at elevations of 3200-3900 m a.s.l.

The *similata* species group

A group of small-sized *Epaphiama* closely related to the *niba* group. Body length 2.55-3.55 mm. Pronotum usually with rectangular hind angles. Preapical pore in position normal for most of *Epaphiama*. The group is well-defined by a rather long scaly patch in the endophallus armature which nonetheless never reaches the basal bulb of the aedeagus as in members of the *niba* group. Species of the group are not completely homogenous in the structure of the aedeagus. Thus, two species (*E. sinuata* and *E. similata* spp.n.) possess the slightly arcuate aedeagus with the apical lamella constricted at its base and rather short endophallus armature which is about half as long as the median lobe. Two other known species (*E. intermedia* and *E.lunanshana* spp.n.) have the aedeagus more strongly bent in apical third, with apical lamella triangular in dorsal view and endophallus armature much longer than half a length of the median lobe. Despite of these differences, all the parts of the endophallus armature are completely homologous and all species of the group are very similar externally. The second type of aedeagus may be considered as a step toward the type of aedeagus characteristic of the species of the *niba*-group. The first type suggests possible relationships with *E. lamellata* Uéno & Yu.

All the known species of the group are spread in southern Sichuan, sympatrically with members of the preceding group but mostly at lower elevations.

Epaphiopsis (*Epaphiama*) *similata* Belousov et Kabak, sp.n.

Figs 5, 20.

Holotype: ♂ (ZISP), China, S Sichuan, 5 km SW Bijishan village, sources of Lianhegou (=Lianghegou) River, 2750 m, 19.06.2000 (Belousov & Kabak leg.) [28º 33’ N / 102º 46’ E].

Paratypes: 3 (3) ♂, 2 ♀ (cAG, cBK), collected together with holotype. – 1 ♀ (cBK), China, Sichuan, right bank of Niuzhihe River, E of Pusiun (=Pouxion) village, 2500-2700 m, 17.06.2000 (Belousov & Kabak leg.) [28º 32’ N / 102º 42’ E]. — 1 (1) ♂, 1 ♀ (cBK), China, S Sichuan, NW of Mt. Yuanbaoshan, right bank of Lianhegou River, 3550-3600 m, 20.06.2000 (Belousov & Kabak leg.) [28º 36’ N / 102º 52’ E]. — 1 (1) ♂, 1 ♀ (cBK), China, S Sichuan, NE of Mt. Yuanbaoshan, Lianhegou River, 3500 m, 23.06.2000 (Belousov & Kabak leg.) [28º 36’ N / 102º 54’ E]. — 3 (3) ♂, 2 ♀ (IZK, MPU, cBK),

China, S Sichuan, right bank of Lianhegou River, NW of Mt. Ubaoshan, E of Jimi, 2800-3500 m, 30.06.2000 (Belousov & Kabak leg.).

16 specimens measured.

Description. Medium-sized species, body length 2.74-3.21 mm, males on average smaller, x*=2.95 mm vs. x*=3.13 mm in females. Habitus elongate oval, weakly depressed. Appendages rather thick. Color dark brownish to brownish testaceous, suture and margins of elytra lighter. Legs uniformly yellowish. Antennae vaguely obscured in middle. Surface iridescent.

Head very small, especially in females (PW/HW: 1.29-1.40, x*=1.38 in females vs. x*=1.35 in males). Eyes weakly convex, medium-sized (EyL/L3: 1.05-1.30, x*=1.19; EyL/TL: 1.36-2.40, x*=1.72). Genae subconvex, with a few very short and sparse hairs. Frontal furrows arcuate, strongly divergent posteriorly. Posterior supraorbital pores located laterad of anterior one. Antennae of medium length (EL/AL: 1.13-1.25, in males on average longer, x*=1.17 vs. x*=1.23 in females); third antennomere 1.67-2.00 (x*=1.79) times as long as wide and 1.08-1.25 (x*=1.16) times as long as antennomere 2; middle segments of antennae submoniliform. Premolar on right mandible well separated from remainder of mandibular tooth, the median denticle of which variable: distinct in some specimens, barely marked in others.

Pronotum (Fig. 20) convex and transverse (PW/PL: 1.36-1.49, x*=1.43), moderately constricted toward base (PW/PB: 1.30-1.44, x*=1.35). Lateral sides gradually rounded, rather strongly sinuate before hind angles; latter large, acutangular or rectangular, pointed at apices, often produced outward and/or backward. Anterior angles marked. Base of pronotum of medium width (PB/PA: 0.96-1.13, x*=1.06). Basal margin rectilinear, barely emarginate on sides near hind angles. Anterior margin straight. Lateral margins of pronotum relatively widely beaded and reflexed, distinctly expanded just near hind angles. Basal transverse impression deep and angulate, removed from basal margin, with a few irregular foveae on each side of pronotum. Apical transverse impression shallow, especially medially, where surface is weakly punctate rugose. Basal foveae large and deep. Basal surface rather strongly rugose, especially so as compared with allied species. Median line distinct, deeper near base. Disc of pronotum sometimes with a fovea each side. Anterior lateral setae strongly before mid-length of pronotum.

Elytra ovate (EW/PW: 1.32-1.44, x*=1.37; EW/HW: 1.80-2.01, x*=1.84 in males vs. x*=1.90 in females), very broad (EL/EW: 1.25-1.36, x*=1.33 in males vs. x*=1.30 in females), slightly depressed on disc. Shoulders marked. Lateral margins moderately and regularly beaded and reflexed. All elytral striae complete and rather deep, distinctly but not roughly punctured. Striae 2 and 3 without distinct junction on apical slope. Intervals flat. Scutellar striole long and deep. Apical striole very long, well-engraved, joining stria (3x7) anteriorly. Anterior discal pore in usual position, posterior one strongly shifted anteriad, preapical pore located far from elytral apex, discal formula 17-23 (21), 34-48 (43), 82-90 (85). Outer discal pore normally on interspace 5, more rarely in stria 5, its formula 57-65 (61). Formula of umbilicate series 7,12,18,24,56,63,79,87. Apical triangle strongly elongate.

Microsculpture comprised of isodiametric meshes on head, irregular transverse meshes on pronotum and transverse lines on elytra, faint medially on disc of pronotum and head.

Aedeagus (Fig. 5) weakly S-shaped, with slightly attenuate and hooked apical portion, widest in apical third; apical lamella rather long, narrow, parallel-sided, and rounded apically in dorsal view. Distal orifice rather small, considerably shorter than half of median lobe. Sagittal aileron lacking. Parameres slender, the left one is longer and more strongly curved, its ventral apophysis small. Endophallus armature consisting of long scaly patches, the left being longer and its distal end curled inward.

Diagnosis. The new species shows a remote similarity to *E. lamellata* Uéno et Yu (Uéno & Yu, 1997), especially concerning the shape of the aedeagal lamella. We guess that this resemblance reflects real rather close relationships of the two species though within the subgenus *Epaphiama* they belong to different groups. Within its group, *E. similata* sp.n. is

distinct in having the wide ovate elytra with deep striae and strongly produced acute hind angles of pronotum. Its affinities with other allied taxa are discussed more thoroughly below.

Distribution. This species seems to be widespread in the basin of the Lianghegou River, south of the town of Ganluo, southern Sichuan. In all known localities, it co-exists with other congeners.

Habitats. The species occurs in the forest zone at elevations of 2500-3600 m a.s.l.

Epaphiopsis (*Epaphiama*) *sinuata* Belousov et Kabak, sp.n.

Figs 6, 21.

Holotype: ♂ (ZISP), China, S Sichuan, right tributary of Lianhegou (=Lianghegou) River, W of Mt. Ubaoshan, near Jimi, 2800-3500 m, 30.06.2000 (Belousov & Kabak leg.).

Paratypes: 8(8) ♂, 5 ♀ (ZISP, IZK, MPU, cAG, cAK, cBK, cPM, cVZ), collected together with holotype. — 3(3) ♂ (cBK), China, S Sichuan, 5 km SW Bijishan village, sources of Lianhegou River, 2750 m, 19.06.2000 (Belousov & Kabak leg.) [28º 33' N / 102º 46' E]. — 3(3) ♂, 1 ♀ (cBK), China, S Sichuan, NW of Mt. Yuanbaoshan, right bank of Lianhegou River, 3550-3600 m, 20.06.2000 (Belousov & Kabak leg.) [28º 36' N / 102º 52' E]. — 1(1) ♂ (cBK), China, S Sichuan, right tributary of Lianhegou River, W of Mt. Ubaoshan, near Jimi, H~3000 m, 28.06.2000 (Belousov & Kabak leg.).

22 specimens measured.

Description. Medium-sized species, body length 2.87-3.31 mm, males on average smaller, x*=3.09 mm vs. x*=3.16 mm in females. Habitus oblong-ovate, subconvex. Appendages rather thick. Color comparatively light though variable: brownish to testaceous, suture and margins of elytra lighter, disc of elytra as well as head strongly darkened in some specimens. Legs uniformly yellowish. Surface iridescent.

Head very small, especially in males (PW/HW: 1.31-1.47, x*=1.41 in males vs. x*=1.37 in females). Eyes weakly convex, of medium size (EyL/L3: 1.03-1.26, x*=1.13; EyL/TL: 1.47-2.00, x*=1.68). Genae subconvex, with a few very short hairs. Frontal furrows arcuate, strongly divergent posteriorly. Antennae of medium length (EL/AL: 1.15-1.25, in males on average longer, x*=1.20 vs. x*=1.23 in females); their third segment 1.64-2.00 (x*=1.84) times as long as wide and 1.09-1.29 (x*=1.19) times as long as antennomere 2. Middle segments of antennae submoniliform.

Pronotum (Fig. 21) convex and transverse (PW/PL: 1.35-1.44, in males on average narrower, x*=1.39 vs. x*=1.42 in females); moderately constricted toward base (PW/PB: 1.30-1.40, x*=1.35). Lateral sides gradually rounded, rather deeply sinuate before hind angles; latter not large, rather variable, from acutangular to obtusangular, pointed at apices, produced outward or not. Anterior angles marked. Base of pronotum of medium width (PB/PA: 1.00-1.14, x*=1.08). Basal margin rectilinear, barely emarginate on sides near hind angles. Anterior margin straight. Lateral margins of pronotum averagely or narrowly beaded and reflexed, distinctly expanded near hind angles. Basal transverse impression deep and angulate, removed from basal margin, with a few irregular foveae on each side of pronotum. Apical transverse impression shallow, especially medially, where surface is weakly punctate rugose. Basal foveae large and deep. Basal surface moderately rugose. Median line distinct, deeper near base. Disc of pronotum sometimes with a fovea each side. Anterior lateral setae strongly before mid-length of pronotum.

Elytra oblong-ovate, with broadly arcuate lateral sides, relatively narrow compared with head and pronotum (EW/PW: 1.26-1.44, in males on average narrower, x*=1.33 vs. x*=1.37 in females; EW/HW: 1.83-1.94, x*=1.87), moderately broad (EL/EW: 1.32-1.44, in males on average longer, x*=1.40 vs. x*=1.35 in females), subconvex on disc. Shoulders protruding. Lateral margins moderately to narrowly beaded and reflexed. Inner elytral striae continuous and rather deep, distinctly punctured, outer much shallower. Intervals flat. Scutellar striole long and deep. Apical striole very long, well-engraved. Anterior discal pore in usual position, posterior discal pore strongly shifted anteriad, preapical pore located comparatively far from elytral apex, discal formula 19-23 (21), 40-51 (45), 82-92 (87). Outer discal pore normally on interspace 5, more rarely in stria 5, its formula 58-71 (64). Formula of umbilicate series 7,12,18,24,57,64,79,87. Apical triangle elongate.

Microsculpture comprised of isodiametric meshes on head, irregular transverse meshes on pronotum and transverse lines on elytra, faint medially on disc of pronotum and head.

Aedeagus (Fig. 6) S-shaped, more or less tubiform, with attenuate and hooked apical portion; apical lamella very long, narrow, constricted at base and dilated distally in dorsal view. Distal orifice rather small, considerably shorter than half of median lobe. Sagittal aileron more or less reduced. Parameres slender, the left one is longer and more strongly bent, its ventral apophysis small. Endophallus armature consisting of long scaly patches, the left being longer and its distal end curled inward.

Diagnosis. The new species is most closely related to the preceding one differing by the more oblong elongate body with less strongly arcuate lateral sides of elytra, generally a bit lighter color of upper-side, smaller and more rectangular hind angles of pronotum due to less deeply sinuate lateral sides of the latter, narrower lateral gutter of pronotum, and shallower outer elytral striae. It is worth noting that all the above differences are more clearly expressed in the males. Their determination on the basis of external characters is quite reliable. On the contrary, the recognition of some females in the sample series made up of three similar species - *E. similata* sp.n., *E. sinuata* sp.n., and *E. intermedia* sp.n. - has required a linear discriminant analysis to be conducted. The co-existence of three closely related species in a comparatively vast geographic area turned out to be quite unexpected.

The aedeagus of *E. sinuata* sp.n. is longer, more slender than that of *E. similata* sp.n., its lamella clearly constricted at base (Fig. 6 vs. Fig. 5). From *E. lamellata* Uéno et Yu, 1997 with similar shape of lamella, the new species is easily distinguished by the considerably smaller size and S-shaped aedeagus.

Distribution. This species seems to be widespread in the basin of the Lianghegou River, south of the town of Ganluo, southern Sichuan. In all known localities, it co-exists with other congeners.

Habitats. The species occurs in the forest zone at elevations of 2750-3500 m a.s.l., all available series were collected from the forest litter.

Epaphiopsis (*Epaphiama*) *intermedia* Belousov et Kabak, sp.n.

Figs 7, 22.

Holotype: ♂ (ZISP), China, S Sichuan, 5 km SW Bijishan village, sources of Lianhegou (=Lianghegou) River, 2750 m, 19.06.2000 (Belousov & Kabak leg.) [28º 33’ N / 102º 46’ E].

Paratypes: 17(17) ♂, 15 ♀ (IZK, MPU, cAG, cAK, cBK, cPM, cVZ), collected with holotype. — 8(4) ♂, 7 ♀ (cBK), China, Sichuan, right bank of Niuzhihe River, E of Pusiun (=Pouxion) village, 2600-2700 m, 16.06.2000 (Belousov & Kabak leg.). — 7(2) ♂, 2 ♀ (cBK), China, Sichuan, right bank of Niuzhihe River, E of Pusiun village, 2500-2700 m, 17.06.2000 (Belousov & Kabak leg.) [28º 32’ N / 102º 42’ E]. — 7 (4) ♂, 7 ♀ (cBK), China, S Sichuan, NW of Mt. Yuanbaoshan, right bank of Lianhegou River, 3550-3600 m, 20.06.2000 (Belousov & Kabak leg.) [28º 36’ N / 102º 52’ E].

43 specimens measured.

Description. Small-sized species, body length 2.54-3.07 mm, males on average smaller, x*=2.83 mm vs. x*=2.90 mm in females. Habitus ovate, subconvex. Appendages rather thick. Color comparatively light though variable: from dark brownish to testaceous, suture and margins of elytra lighter, disc of elytra as well as head more or les darkened. Legs uniformly yellowish. Surface iridescent.

Head very small (PW/HW: 1.30-1.44, x*=1.38). Eyes weakly convex, medium-sized, strongly elongate in form (EyL/L3: 1.08-1.50, x*=1.25; EyL/TL: 1.70-2.38, x*=2.02). Genae short, subconvex, with a few very small hairs. Head rather narrow in posterior part, therefore, eyes and genae seem to be protruding. Frontal furrows arcuate, strongly divergent posteriorly. Antennae of medium length (EL/AL: 1.13-1.34, in males on average longer, x*=1.22 vs. x*=1.28 in females); their third segment 1.56-2.00 (x*=1.78) times as long as wide and 1.07-1.33 (x*=1.17) times as long as antennomere 2; middle antennomeres submoniliform. Premolar on right mandible well separated from remainder of mandibular tooth, the median denticle of which variable: distinct in some specimens, barely marked in others.

Pronotum (Fig. 22) convex and transverse (PW/PL: 1.33-1.44, x*=1.39), moderately constricted toward base (PW/PB: 1.26-1.42, x*=1.34). Lateral sides gradually rounded, briefly sinuate before hind angles; latter not large, usually subrectangular, pointed at apices, often clearly shifted anteriorly. Anterior angles marked. Base of pronotum of medium width (PB/PA: 1.02-1.14, x*=1.07). Basal margin rectilinear, barely emarginate on sides near hind angles. Anterior margin straight. Lateral margins of pronotum averagely beaded and reflexed, somewhat expanded near hind angles. Basal transverse impression deep and angulate, removed from basal margin, with a few irregular foveae. Apical transverse impression shallow, especially medially, feebly rugose in some specimens. Basal foveae large and deep. Basal surface distinctly rugose. Median line distinct, deeper near base. Anterior lateral setae in apical third of pronotum.

Elytra broadly ovate, rather small compared with head and pronotum (EW/PW: 1.33-1.46, x*=1.38; EW/HW: 1.80-2.07, x*=1.90 in males and x*=1.93 in females), very broad (EL/EW: 1.30-1.40, x*=1.35), weakly convex on disc. Shoulders protruding. Lateral margins moderately beaded and reflexed. Inner elytral striae continuous and rather deep, distinctly punctured, outer shallower but usually visible. Striae 2 and 3 without distinct junction near preapical pore. Inner intervals subconvex, outer flat. Scutellar striole long and deep. Apical striole very long, well-engraved, joining stria 3 anteriorly. Anterior discal pore in usual position, posterior one slightly shifted anteriad, preapical pore located comparatively far from elytral apex, discal formula 18-25 (21), 40-53 (46), 80-93 (88); outer discal pore normally on interspace 5, more rarely in stria 5, its formula 53-73 (64). Formula of umbilicate series 7,12,18,24,56,63,79,87. Apical triangle elongate.

Microsculpture comprised of isodiametric meshes on head, irregular transverse meshes on pronotum and transverse lines on elytra, faint medially on disc of pronotum and head.

Aedeagus (Fig. 7) rather small, characteristically deflexed in apical quarter, its lamella short and triangular in shape in dorsal view. Endophallus armature consisting of scaly patches, basically similar to those of preceding species. Sagittal aileron lacking. Parameres very slender, clearly constricted before attenuate apex, each with 4 apical setae. Left paramere distinctly longer, with ventral apophysis.

Variation. The species seems to be variable in shape and color, but this variation appears to be rather individual than geographic.

Diagnosis. Externally the new species is very similar to the two preceding species, especially to *E. sinuata* sp.n. Both these taxa share the similarly shaped pronotum with rather small, often rectangular hind angles, and the same, relatively light color pattern. *E. intermedia* sp.n. is nonetheless smaller (on average 2.85 mm vs. x*=3.11 mm in *E. sinuata* sp.n.), and has the deeper elytral striation. The aedeagal conformation does not support their affinities and shows that this species is more closely related to *E. lunanshana* sp.n. described below. For details, see the description of the latter.

Distribution. This species seems to be widespread in the basin of the Lianghegou River, south of the town of Ganluo, southern Sichuan. In all known localities, it co-exists with other congeners.

Habitats. The species was obtained from the forest litter at elevations of 2500-3600 m a.s.l. As compared with sympatric related species, the species seems to be associated with lower biotopes where it is more common.

Epaphiopsis (*Epaphiama*) *lunanshana* Belousov et Kabak, sp.n.

Figs 8, 23.

Holotype: ♂ (ZISP), China, S Sichuan, S of Xichang, E slope of Mt. "4282" (NE of Dechang), 3200-2800 m, 6.05.2001 (Belousov & Korolev leg.).

Paratypes: 7(3) ♂, 14(1) ♀ (cAG, cBK), collected together with holotype.

18 specimens measured.

Description. Medium-sized species, body length 2.92-3.53 mm, females on average larger, x*=3.43 mm vs. x*=3.22 in males. Habitus robust, broadly ovate, subconvex, elytral disc a little depressed. Appendages thick. Color of dorsum dark brownish to brownish testaceous, often with amber tinge, posterior part of head and disc of elytra darkest; suture and margins, sometimes also apical slope of elytra lighter, reddish to yellowish. Legs and antennae uniformly yellowish. Exceptionally, body completely uniformly testaceous. Surface distinctly iridescent.

Head small (PW/HW: 1.36-1.44, x*=1.40). Eyes subconvex, medium-sized, markedly longer than antennomere 3 and almost twice as long as genae (EyL /L3: 1.03-1.44, x*=1.19; EL/LT: 1.57-2.40, x*=1.98). Genae feebly convex, with a few hairs. Frontal furrows regularly arcuate. Antennae of medium length (EL/AL: 1.16-1.29, in males on average longer, x*=1.18 vs. x*=1.25 in females), their third segment 1.79-2.17 (x*=1.95) times as long as wide and 1.05-1.29 (x*=1.16) times as long as antennomere 2. Premolar on right mandible well developed though partly fused with remainder of mandibular tooth, median denticle of the latter more or less reduced.

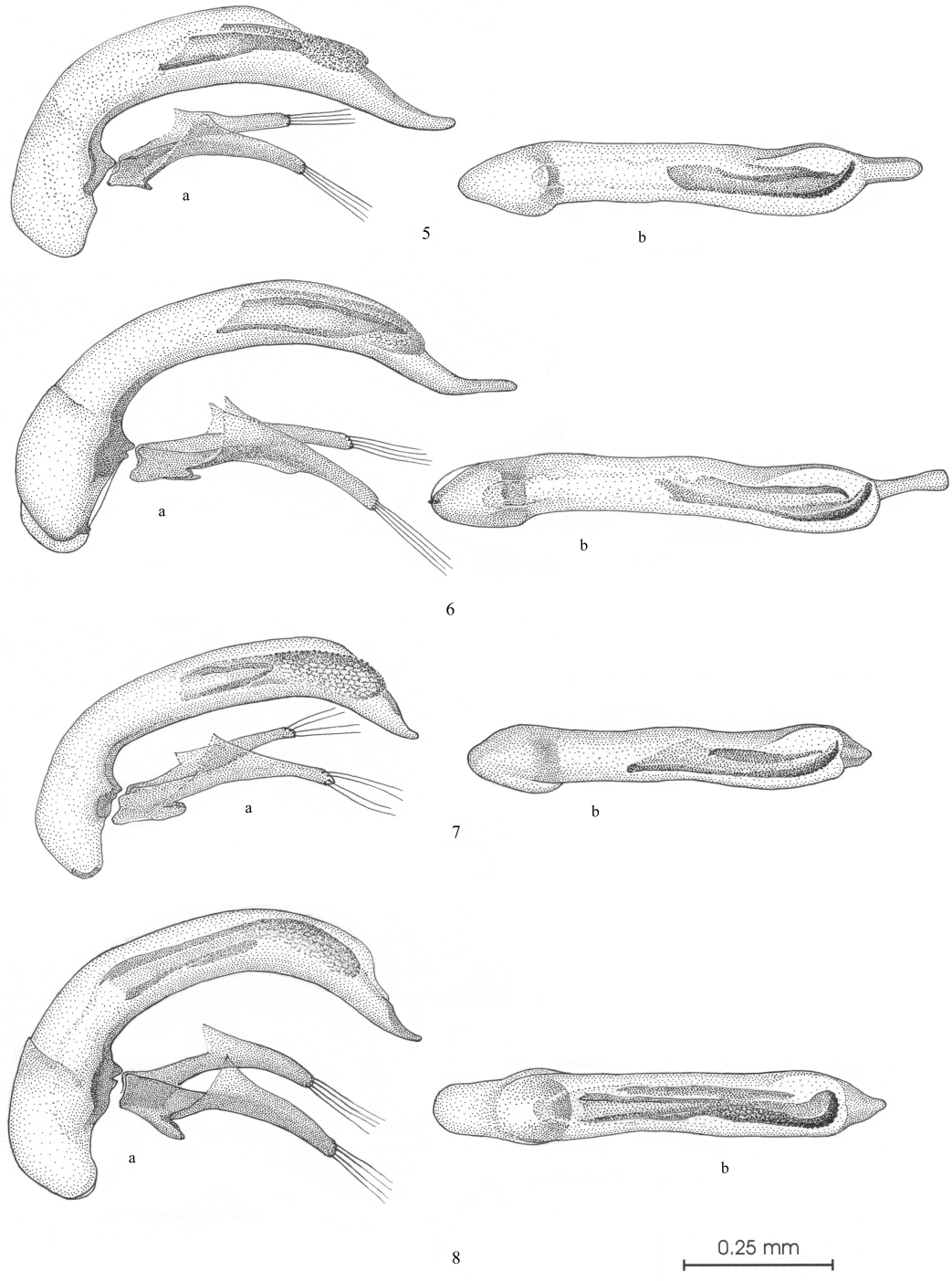
Pronotum (Fig. 23) convex and transverse (PW/PL: 1.35-1.42, in males x*=1.41 vs. x*=1.38 in females), moderately constricted toward base (PW/PB: 1.29-1.37, x*=1.32). Maximal width of pronotum about mid-length. Lateral sides evenly and broadly arcuate, briefly sinuate just before hind angles; latter subrectangular, blunt or pointed apically. Anterior angles rounded but slightly salient. Base of pronotum relatively broad (PB/PA: 1.04-1.13, x*=1.08), basal margin weakly bisinuate, a little oblique on sides. Anterior margin straight or barely concave. Lateral margins beaded and moderately reflexed, this bead rather narrow throughout, expanded only near hind angles. Basal transverse impression deep laterally, shallow medially, with a few irregular foveae on each side, angulate near basal foveae; latter large and deep. Apical transverse impression shallow, distinct laterally, evanescent medially, set closely to anterior margin. Basal surface moderately rugose. Median line distinct, well impressed in middle, deepest near base, not reaching anterior margin.

Elytra broadly ovate and moderately convex, small-sized but proportionally broad, especially at their base, a little attenuated in apical part. Elytra narrower in males (EW/PW: 1.39-1.50, x*=1.42 in males vs. x*=1.46 in females; EW/HW: 1.91-2.09, x*=1.98 in males vs. x*=2.04 in females; EL/EW: 1.29-1.36, x*=1.35 in males vs. x*=1.32 in females). Shoulders strongly protruding, then sides broadly arcuate and comparatively narrowly rounded at apical part of elytra. Lateral margins narrowly beaded and reflexed. All elytral striae deep and coarsely punctured. Interspaces of subequal width. Inner intervals rather narrow and subconvex. Apical striole average, usually directed to stria 3. Anterior discal pore in usual position, posterior discal pore slightly shifted anteriad, preapical pore located comparatively far from elytral apex, in apical sinuation of stria 2, always behind anterior termination of apical striole; striae 2 and 3 without clear connection near preapical pore. Discal formula 18-23 (20), 40-50 (45), 85-89 (87). Outer discal pore usually in stria 5, its formula 53-66 (61). Formula of umbilicate series 7,12,17,23,57,63,80,88.

Microsculpture comprised of isodiametric meshes on head, irregular transverse meshes on pronotum and transverse lines on elytra, faint medially on disc of pronotum and head. Extremely fine micropunctures disseminated throughout the body surface.

Aedeagus (Fig. 8) of medium size, slender, with characteristically deflexed and attenuated downward apical quarter, its lamella short and triangular in shape in dorsal projection. Endophallus armature consisting of scaly patches, basically similar to those of preceding species. Sagittal lobe lacking. Parameres slender, barely arcuate in apical half, each with 4 apical setae. Left paramere clearly longer, with distinct ventral apophysis.

Diagnosis. Doubtless the new species is most closely related to *E. intermedia* sp.n. that is proved by the structure of the male genitalia. *E. lunanshana* sp.n. is however distinctly larger (x*=3.34 mm vs. x*=2.85 mm in *E. intermedia* sp.n.), on average has the darker color of the dorsum and more depressed pronotum, especially in the area of the basal foveae. The aedeagus of *E. lunanshana* sp.n. is longer, more strongly deflexed in the apical third and has a considerably longer endophallus armature, almost reaching the basal bulb of the aedeagus (Fig. 8 vs. Fig. 7). Externally, *E. lunanshana* sp.n. is much more similar to



Figs 5-8. Aedeagus of *Epaphiopsis* spp. a - lateral view; b - dorsal view. 5 - *E*. (*Epaphiama*) *similata* sp.n.; 6 - *E*. (*Epaphiama*) *sinuata* sp.n.; 7 – *E*. (*Epaphiama*) *intermedia* sp.n.; 8 - *E*. (*Epaphiama*) *lunanshana* sp.n.

sympatric *E. dechangensis* sp.n. than to the above species but can be easily distinguished by its smaller size (x*=3.34 mm vs. x*=3.72 mm in *E. dechangensis* sp.n.), smaller and more obtusangular hind angles of the pronotum and by the base of the pronotum distinctly oblique on sides. The genitalic structure of male is different, without attenuated apical lamella (Fig. 8 vs. Fig. 4).

Distribution. This species is known only from the eastern slope of a mountain ridge, situated near peak "4282" in the Lunanshan Mountain Range, northeast of Dechang, south of Xichang, southern Sichuan.

Habitats. The species was found in the upper forest zone at elevations 2800-3200 m a.s.l., i.e. at lower elevations as compared with sympatric *E. dechangensis* sp.n.

The *gonggaica* species group

The group embraces presumably 4 known species with the following combination of features: the color of the body dark, with strong iridescent luster; antennae usually strongly obscured; pronotum discoid, with obtuse and blunt at apices hind angles; its lateral sides barely sinuate or straight, base more or less strongly emarginate on sides, basal transverse impression rather sharply engraved, at least, laterally; preapical pore of the elytra though varying in position tends to be located within the field of the apical striole as in members of the subgenus *Trechiama*.

The major problem associated with this group is the taxonomic position of *E. perreaui* (Deuve, 1988) which is unknown to the authors of the present article. S.-I. Uéno classified this species among members of the subgenus *Pseudepaphius* Uéno, 1962 based mostly on “the characteristic elytral chaetotaxy and aedeagal conformation” (Uéno, 1998). On the other hand, this author settled *E. gonggaica* (Deuve, 1992) close to *E. perreaui*, relying principally on the strong iridescence of the body surface and “other respects”. As a result of such an arrangement, *E. gonggaica* turned out to be within the subgenus *Pseudepaphius* despite of the state of the preapical seta proper to the members of the subgenus *Epaphiama* Jeannel, 1962. We have found a further two new species closely related to *E. gonggaica*. It is worth noting that all these species are characterized by the preapical pore in the position normal for the *Epaphiama* species (see Graph 5). All available data on the position of the preapical pore in different groups and/or subgenera of the genus *Epaphiopsis* are given in Graph 5. Data are sorted in ascending order for the respective means. Additionally, for species represented by more than two specimens, the confidence intervals at 95 % are given. The leftmost point on the graph for the *Epaphiama* line corresponds to *E. budhaica.* From the graph it becomes quite clear that *E. budhaica* is indeed an aberrant species within the subgenus *Epaphiama* in respect of the position of the preapical pore. The rightmost point of the *Pseudepaphius* line also deserves to be considered specially. It corresponds to *E. korolevi* sp.n. and is caused rather by the abbreviation of the hind part of the elytra than by the drift of the preapical pore toward the elytral apex. Of a great importance is the fact that even the general tendency (at least, insofar as it is known for available material) in the position of the preapical pore in the species of the *gonggaica* group seems to follow that of *Epaphiama* species (compare the *Epaphiama* and *Pseudepaphius* lines in Graph 5).

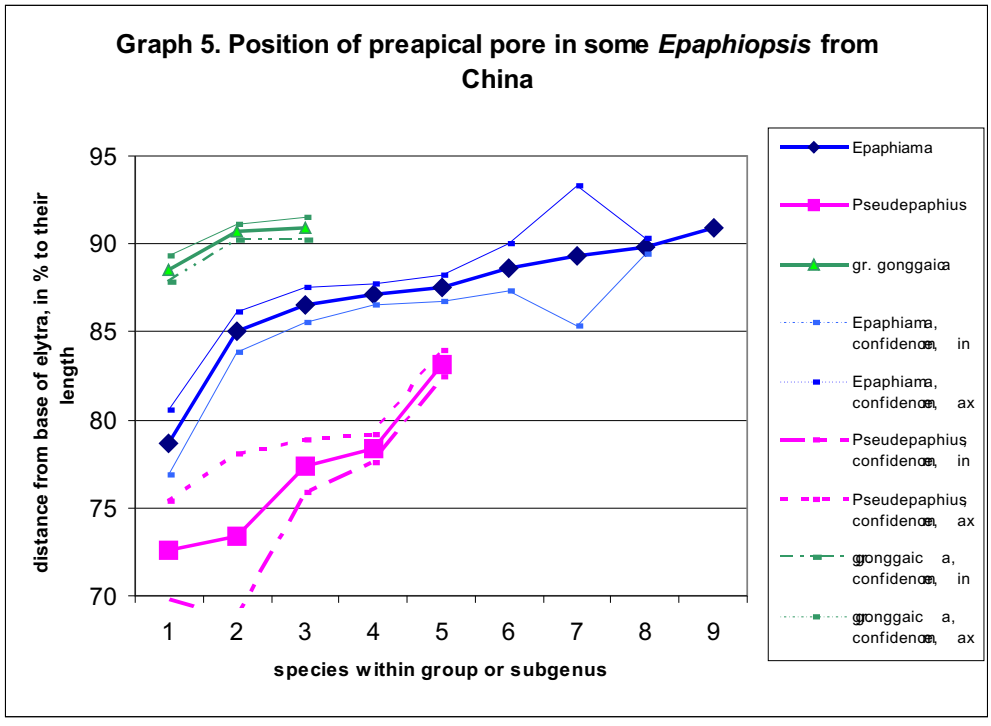
Externally the species of the *gonggaica* group appear to be isolated from both *Epaphiama* and *Pseudepaphius.* Nonetheless, in the pronotal shape, especially in rounded hind angles these species have remote resemblance to *Pseudepaphius* of the *tronquetiana* group (compare Figs 24-26 vs. Fig. 27).

The phylogenetic significance of the male genitalia in the generic classification of Trechini must be accepted with certain reservations. Firstly, many genera have several types of aedeagal conformation, of which the most archaic type is often proper to a whole scope of genera. Secondly, many similar modifications are observed within different genera and must be considered as a result of either convergence or parallelism. Nevertheless, comparing the aedeagal structure of *E. gonggaica* with other Chinese *Epaphiopsis* one can find a certain resemblance with *Epaphiama* species of the *laticolle* group. The members of both these

groups are characterized by the aedeagus with well developed sagittal aileron and small, weakly sclerotized saddle-like endophallus armature. In this connection, a certain similarity of the overall shape of the median lobe (especially evident in lateral view) of *E. dechangensis* and species of the *E. gonggaica* group is worth noting. The above general ideas about the phylogenetic significance of the male genitalia in the supraspecific classification of Trechini may be exemplified by a strong difference in the structure of the aedeagus between *E. gonggaica* and *E. proxima* sp.n. on the one side, and *E. nigra* sp.n. on the other, within the *gonggaica* species group. Of *Pseudepaphius* only *E. korolevi* sp.n. and *E. cavazzutii* (Deuve, 1995) have a remote resemblance with the members of the *gonggaica* species group in the structure of the male genitalia. . This similarity however may be due to the small size of the aedeagus followed by the weakness of the endophallus armature.

To summarize, from the phylogenetic viewpoint, the *gonggaica* group appears to be a strongly isolated species complex that does not exhibit close relationships with any of the species groups of Chinese *Epaphiopsis.* Nonetheless, from the taxonomic viewpoint, we prefer it to be included in the subgenus *Epaphiama* to preserve, at least for the moment, the subgeneric classification of *Epaphiopsis* which was so productive over a number of years.

Analogously to the *niba* group we prefer to name the group after the name of more typical species, *E. gonggaica,* though it was not the first species described of the group.



Epaphiopsis (*Epaphiama*) *gonggaica* (Deuve, 1992)

Figs 9, 24.

Epaphiama gonggaicus Deuve, 1992: 180 (type locality: Moxi).
Epaphiopsis (*Allepaphiama*) *gonggaica*: Sciaky, 1995: 65.
Epaphiopsis (*Pseudepaphius*) *gonggaica*: Uéno, 1998: 265.

Material examined: 44 (8) ♂, 35(1) ♀ (ZISP, IZK, MPU, cAG, cAK, cBK, cPM, cVZ), China, Sichuan, SSW of Shimian, SE slope of Mt. "4977", W of Lijipin (=Liziping), H~2700 m, 3.07.2000 (Belousov & Kabak leg.). — 1(1) ♂ (cBK), China, Sichuan, SSW of Shimian, SE slope of Mt. "4977", W of Lijipin, H~3000 m, 5.07.2000 (Belousov & Kabak leg.) [28° 59' N / 102° 10' E].

22 specimens measured.

Description. Medium-sized species, body length 3.12-3.68 mm, males on average smaller, x*=3.42 mm vs. x*=3.52 mm in females. Habitus elongate-oval, rather robust and moderately convex. Appendages of medium length. Color of dorsum reddish brown with darker head and disc of elytra, suture and margins of the latter are lightened. Legs and antennae uniformly yellowish, contrasting with relatively dark color of upper-side; antennae sometimes vaguely obscured in middle part. Surface of dorsum iridescent throughout.

Head very small (PW/HW: 1.45-1.53, x*=1.48). Eyes subconvex, medium-sized (EyL/L3: 0.92-1.19, x*=1.04; EyL/TL: 1.64-2.04, x*=1.83). Genae short and strongly convex. Frontal furrows regularly and moderately impressed, slightly angulate and approached in middle part. Antennae long and filiform (EL/AL: 1.02-1.15, in males on average longer, x*=1.06 vs. x*=1.12 in females); their third segment 1.82-2.27 (x*=2.02) times as long as wide and 1.12-1.36 (x*=1.22) times as long as antennomere 2; middle antennomeres clearly elongate. Premolar on right mandible strongly separated from remainder of mandibular tooth.

Pronotum (Fig. 24) discoid, very ample, widest a little before its mid-length (PW/PL: 1.30-1.43, x*=1.36), rather flat, moderately constricted toward base (PW/PB: 1.24-1.35, x*=1.28). Lateral sides broadly and regularly rounded, barely sinuate before hind angles; latter obtusangular, blunt at apices. Anterior angles weakly salient, broadly rounded. Base of pronotum broad (PB/PA: 1.09-1.25, x*=1.16). Basal margin rectilinear, rather deeply emarginate on sides near hind angles. Anterior margin concave or straight. Basal transverse impression almost rectilinear laterally, deep, sharply engraved, without bend near basal fovea, set closely to basal margin. Apical transverse impression shallow, close to anterior margin. Basal foveae shallow, of moderate size. Basal surface smooth or weakly rugose, apical surface mostly smooth. Median line distinct, deepest near mid-length, becoming shallower both anteriad and posteriad, not reaching anterior and posterior margins. Lateral margins moderately bordered and reflexed, distinctly expanded posteriorly. Anterior lateral seta strongly before mid-length of pronotum, posterior one in hind angles.

Elytra small compared with pronotum but rather large compared with head (EW/PW: 1.34-1.47, x*=1.37 in males vs. x*=1.43 in females; EW/HW: 1.96-2.16, x*=2.03 in males vs. x*=2.10 in females), broad, especially in females (EL/EW: 1.31-1.44, x*=1.35 in females vs. x*=1.40 in males), elongate-oval in shape, convex, with oblique shoulders. Lateral sides of elytra averagely beaded and reflexed, this bead widest in humeral area. Elytral striae 1-3 continuous and relatively deep, others shallow, visible only on disc of elytra, disappearing both anteriad and posteriad; exterior striae beginning with stria 6 indistinct; all striae punctured. Intervals weakly convex or flat. Apical striole well developed, almost straight anteriorly, with shallow impression near anterior termination. Both anterior and posterior discal pores strongly shifted anteriad; discal formula 11-15 (13), 32-49 (41), 88-94 (91). Hence, preapical pore rather variable in position, but usually set on interspace 2, a little behind anterior end of apical striole, without clear connection with stria 3. Discal pore of stria 5, as a rule, set on interspace 5, its formula 59-70 (63). Formula of umbilicate series 8,13,19,25,60,65,80,89. Apical triangle equilateral, its inner side approximately parallel to median axis of body, angulo-apical pore set in the middle between exterior pore and elytral suture.

Microsculpture comprised of isodiametric meshes on head, irregular transverse meshes on pronotum and transverse lines on elytra, faint medially on disc of pronotum and head.

Aedeagus (Fig. 9) rather small, arcuate, with straight and triangular in dorsal view apical lamella. Endophallus armature scapulate, saddle-like, slightly sclerotized, placed in apical third of aedeagus. Sagittal aileron well developed. Parameres narrow and arcuate, each with 4 apical setae, the left much longer, provided with ventral apophysis.

Variation. The only known male, collected 5.07.2000 at an elevation of 3000 m, is teneral, somewhat larger, lighter, with lateral margins of pronotum widely reflexed. Its aedeagal apex is a little thicker.

Distribution. Among allied species, *E. gonggaica* (Deuve) seems to be the most widespread and less specialized, and inhabits comparatively lower biotopes. The species was described from the massif of Mount Gongga Shan where it seems to be rather common. Later it was shown for the mountain Erlang Shan. The new record extends significantly southward the species range.

Habitats. The species was collected in the forest litter, at elevations of 2700-3000 m.

Epaphiopsis (*Epaphiama*) *proxima* Belousov & Kabak, sp. n.

Figs 10, 25.

Holotype: ♂ (ZISP), China, S Sichuan, NW Mianning, 8 km NW Lajiajia, upper forest zone, H~3000 m, 4.08.2002 (Belousov & Kabak leg.) [28º 50' N / 102 º 00' E].

Paratypes: — 18(4) ♂, 6 ♀ (IZK, MPU, cAG, cAK, cBK, cPM, cVZ), collected with holotype. — 2(2) ♂, 7 ♀ (cBK), China, S Sichuan, NW Mianning, 6 km NW Lajiajia, forest zone, H~2600-2800 m, 2-3.08.2002 (Belousov & Kabak leg.). — 4(2) ♂, 3 ♀ (cBK), China, S Sichuan, NW Mianning, 8 km NW Lajiajia, upper forest zone, H~3000-3400 m, 5.08.2002 (Belousov & Kabak leg.). — 5(2) ♂, 4 ♀ (cBK), China, S Sichuan, NW Mianning, 8 km NW Lajiajia, upper forest zone, H~3000 m, 5.08.2002 (Belousov & Kabak leg.). — 1(1) ♀ (cBK), China, S Sichuan, NW of Mianning, 10 km NNE of Eryizuxiang, forest 3300-3400m, 13.08.2002 (Belousov & Kabak leg .) [28º 46' N / 101º 58' E].

42 specimens measured.

Description. Medium-sized species, body length 3.18-3.75 mm, males on average smaller, x*=3.44 mm vs. x*=3.49 mm in females. Habitus elongate-oval, rather robust and moderately convex. Appendages of medium length. Color of dorsum reddish dark brown with darker head and disc of elytra, elytral suture and margins lightened. Legs uniformly yellowish, contrasting with dark color of upper-side. Antennae either vaguely obscured in middle part or strongly obscured beginning with antennomere 3. Surface of dorsum strongly iridescent, with slight metallic luster.

Head very small (PW/HW: 1.34-1.49, x*=1.42). Eyes medium-sized (EyL/L3: 0.92-1.17, x*=1.05; EyL/TL: 1.53-2.25, x*=1.87). Genae short and strongly convex. Frontal furrows regularly and moderately impressed, slightly angulate and approached in middle part. Antennae long and filiform (EL/AL: 1.05-1.17, in males on average longer, x*=1.09 vs. x*=1.13 in females); their third segment 1.83-2.36 (x*=2.07) times as long as wide and 1.07-1.36 (x*=1.19) times as long as antennomere 2; middle antennomeres clearly elongate. Premolar on right mandible strongly separated from remainder of mandibular tooth.

Pronotum (Fig. 25) discoid, very ample, widest a little before its mid-length (PW/PL: 1.30-1.45, x*=1.37), rather flat, slightly constricted toward base (PW/PB: 1.18-1.35, x*=1.24 in males vs. x*=1.27 in females). Lateral sides broadly rounded anteriorly, more or less straight posteriorly, without sinuation before obtusangular hind angles, the latter rounded at apices. Anterior angles barely salient, broadly rounded. Base of pronotum broad, especially in males (PB/PA: 1.07-1.25, x*=1.19 in males vs. x*=1.12 in females). Basal margin rectilinear, rather deeply emarginate on sides. Anterior margin concave or straight. Basal transverse impression deep and straight, sharply engraved, without bend near basal fovea, set closely to basal margin. Apical transverse impression finely engraved, close to anterior margin. Basal foveae moderately deep, rather small. Basal surface usually weakly rugose, apical surface mostly smooth. Median line distinct, deepest near mid-length, becoming shallower both anteriad and posteriad, not reaching anterior and posterior margins. Lateral margins moderately bordered and reflexed, distinctly expanded posteriorly. Anterior lateral seta situated markedly before mid-length of pronotum, posterior one in hind angles.

Elytra relatively small as compared with pronotum but rather large compared with head (EW/PW: 1.35-1.57, x*=1.41 in males vs. x*=1.48 in females; EW/HW: 1.94-2.21, x*=2.03 in males vs. x*=2.08 in females), broad, more elongate in males (EL/EW: 1.29-1.44, x*=1.41 in males vs. x*=1.35 in females), elongate-oval in shape, convex, with oblique shoulders. Lateral margins of elytra averagely beaded and reflexed, bead widest in humeral area. Elytral striae rather shallow, only striae 1-3 continuous and distinct, others

shallow, visible only on disc of elytra, disappearing both anteriad and posteriad; exterior striae beginning with stria 6 indistinct; all striae very finely punctured. Intervals flat. Apical striole well developed, almost straight anteriorly, without clear connection with stria 3. Both anterior and posterior discal pores strongly shifted anteriad; discal formula 10-17 (14), 29-44 (38), 87-93 (91). Discal pore of stria 5 usually set on interspace 5, its formula 54-70 (63). Formula of umbilicate series 8,13,19,25,58,65,80,89. Apical triangle elongate, equilateral, its inner side approximately parallel to median axis of body.

Microsculpture comprised of isodiametric meshes on head, irregular transverse meshes on pronotum and transverse lines on elytra, becoming shallower on disc of pronotum and head.

Aedeagus (Fig. 10), rather small, arcuate, with comparatively large, straight and strongly attenuate apical lamella. Sagittal lobe large. Endophallus armature scapulate, saddle-like, slightly sclerotized, placed in apical third of aedeagus. Parameres stout, each bearing 4 apical setae, the left much longer, provided with ventral apophysis.

Diagnosis. Doubtless the new species is most closely related to *E. gonggaica* (Deuve) sharing with it all the most important external and genitalic characters. Externally it differs mostly by the somewhat darker color, especially the antennae are clearly obscured at least in their middle part. Basal foveae of pronotum are a little deeper. Nonetheless, the reliable determination of the new species is possible only on the male genitalia: the aedeagal apex is longer and more robust in lateral projection, lamella narrower and more elongate in dorsal view, and parameres are much thicker and less arcuate (Fig. 10 vs. Fig. 9). The two considered species appear to represent two vicariant relatives.

Distribution. This species is known from southern parts of a mountain massif situated south of the Gongga Shan Mountains where it seems to be rather widespread.

Habitats. The species was encountered in a wide belt of altitudes at 2600-3400 m elevations, it abounded in the litter of both broadleaved forests and bamboos. A few specimens were obtained in the low alpine zone not far from the timber-line.

Epaphiopsis (*Epaphiama*) *nigra* Belousov & Kabak, sp.n.

Figs 11, 26.

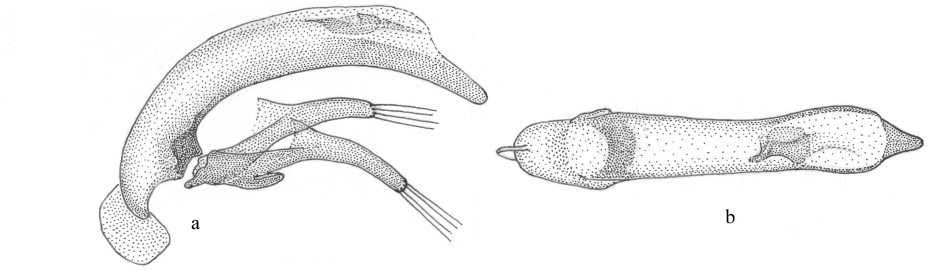
Holotype: ♂ (ZISP), China, Sichuan, SSW of Shimian, SE slope of Mt. "4977", W of Lijipin (=Liziping), 2700-3900 m, 4.07.2000 (Belousov & Kabak leg.) [ca. 28º 59' N / 102º 10' E].

Paratypes: 4(2) ♂, 11(1) ♀ (ZISP, IZK, MPU, cAG, cAK, cBK), collected together with holotype. — 3(2) ♂, 2 ♀ (cBK), China, Sichuan, SSW of Shimian, SE slope of Mt. "4977", W of Lijipin, H~2700 m, 3.07.2000 (Belousov & Kabak leg.).

20 specimens measured.

Description. Large-sized species, body length 3.75-4.27 mm, males on average smaller, x*=3.98 mm vs. x*=4.11 mm in females. Habitus elongate-oval, rather robust and moderately convex. Appendages relatively long. Color of dorsum pitchy blackish; elytral suture and margins, base of pronotum and head tinged with reddish. Legs uniformly yellowish, strongly contrasting with dark color of upper-side. Antennae strongly obscured beginning with antennomere 2 (more seldom with antennomere 1 or 3-4). In a few lightened specimens, dorsum of which is mostly reddish brown, antennae almost uniformly yellow. Surface of dorsum strongly iridescent, with unusually strong bronze metallic luster.

Head very small, especially in males (PW/HW: 1.34-1.47, x*=1.44 in males vs. x*=1.40 in females). Eyes small and moderately convex (EyL/L3: 0.93-1.08, x*=1.00; EyL/TL: 1.50-1.80, x*=1.68). Genae relatively convex, with a few short hairs. Frontal furrows regularly arcuate, rather deep. Both anterior and posterior supraorbital setiferous pores similarly foveolate. Antennae long and filiform (EL/AL: 1.01-1.17, in males longer, x*=1.06 vs. x*=1.11 in females); their third segment 2.00-2.45 (x*=2.29) times as long as wide and 1.18-1.51 (x*=1.33) times as long as antennomere 2; middle antennomeres distinctly elongate. Premolar on right mandible strongly separated from remainder of mandibular tooth, the base of which is very long.



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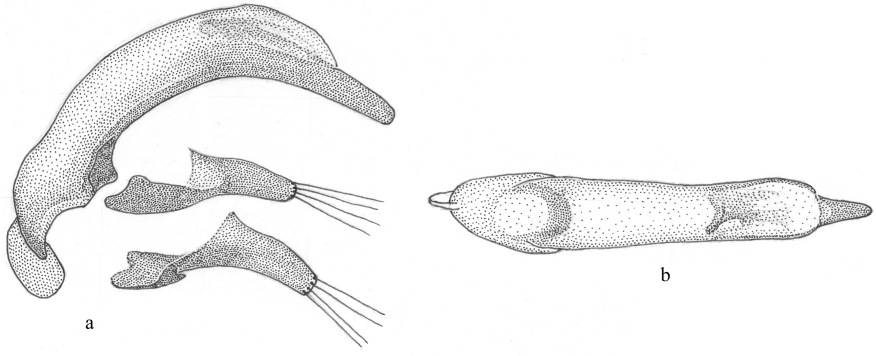

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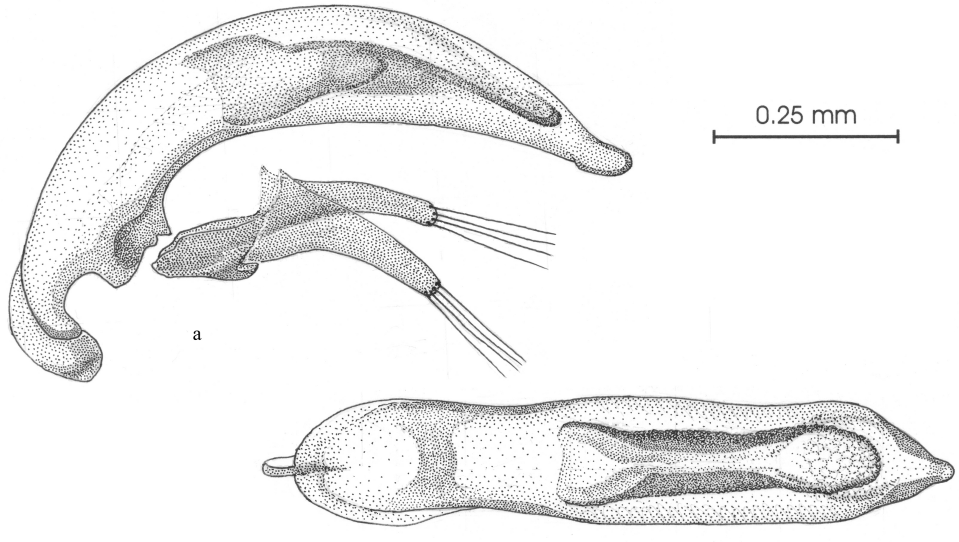

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Figs 9-11. Aedeagus of *Epaphiopsis* spp. a - lateral view; b - dorsal view. 9 – *E*. (*Epaphiama*) *gonggaica* (Deuve); 10 - *E*. (*Epaphiama*) *proxima* sp.n.; 11 – *E*. (*Epaphiama*) *nigra* sp.n.

Pronotum (Fig. 26) discoid, very ample, widest a little before its mid-length (PW/PL: 1.32-1.42, x*=1.37), rather flat, moderately constricted toward base (PW/PB: 1.25-1.38, x*=1.33). Lateral sides broadly rounded anteriorly, more or less straight posteriorly, with weak or no sinuation before obtusangular hind angles, which are rounded at apices. Anterior angles barely salient, broadly rounded. Base of pronotum moderately broad (PB/PA: 1.07-1.19, x*=1.14 in males vs. x*=1.11 in females). Basal margin rectilinear, deeply though rather briefly emarginate on sides near hind angles, so that the latter weakly produced backward in broadly rounded lobes. Anterior margin straight or weakly concave. Basal transverse impression deep and straight, sharply engraved, without bend near basal fovea, set closely to posterior margin. Apical transverse impression finely engraved, close to anterior margin. Basal foveae rather ample, but shallow. Basal surface smooth or weakly rugose, apical surface smooth. Median line distinct, deepest near mid-length, becoming shallower both anteriad and posteriad, not reaching both anterior and posterior margins. Lateral margins moderately bordered and reflexed, distinctly expanded posteriorly. Anterior lateral seta strongly before mid-length of pronotum, posterior one in hind angles.

Elytra relatively small as compared with pronotum but rather large compared with head (EW/PW: 1.37-1.51, x*=1.41 in males vs. x*=1.45 in females; EW/HW: 1.97-2.11, x*=2.03), broad (EL/EW: 1.35-1.48, in males narrower, x*=1.45 vs. x*=1.39 in females). Elytra elongate-oval in shape, convex, often depressed along suture, with oblique shoulders. Lateral margins of elytra averagely beaded and reflexed, this bead widest in humeral area. Elytral striae shallow, only striae 1-3 continuous and distinct, others visible only on disc, disappearing both anteriad and posteriad; exterior striae beginning with stria 6 indistinct; all striae barely punctured. Intervals completely flat. Apical striole well developed, of medium length, almost straight anteriorly, without clear connection with stria 3. Both anterior and posterior discal pores shifted anteriad and set in stria 3, discal formula 14-18 (16), 39-49 (43), 85-91 (89). Discal pore of stria 5 normally located on interspace 5, its formula 51-64 (57). Formula of umbilicate series 9,13,18,23,61,67,81,89. Apical triangle weakly elongate or equilateral, its inner side approximately parallel to elytral suture.

Microsculpture comprised of isodiametric meshes on head, irregular transverse meshes on pronotum and shallowly engraved transverse lines on elytra, faint medially.

Aedeagus (Fig. 11), arcuate, large compared with that of allied species. Basal orifice deeply emarginate. Apex button-shaped. Sagittal aileron well-developed. Parameres relatively long and narrow, each bearing 4 apical setae. Left paramere clearly longer, with ventral processus. Endophallus armature large, well-developed, in a curled ventral scaly patch, rounded apically and set symmetrically on ventral surface of aedeagus.

Diagnosis. The new species seems to be close to *Epaphiopsis perreaui* (Deuve, 1988) sharing with it a rather large size, strong metallic luster of surface, obscured antennae, large aedeagus, and some other characters. Their geographic distribution appears to support this viewpoint. *E. nigra* sp.n. differs from*E. perreaui*, first of all, by its discoid, button-shaped aedeagal apex (simple in *E. perreaui*), narrower parameres with 4 apical setae, and more deeply emarginate basal orifice. Externally the new species is easily distinguishable by preapical seta located a little behind anterior terminus of apical striole, i.e. in position usual for the *Epaphiama* species (in *Epaphiopsis perreaui* - “vers le quart postérieur de l’élytre”, i.e. in the position normal for *Pseudepaphius*). On the other side, the new species is rather similar to the two closely related species, considered above: *E. gonggaica* (Deuve) and *E. proxima* sp.n., differing from both in its larger size, darker color (especially concerning antennae), and in aedeagal conformation (Fig. 11 vs. Fig. 9 and 10).

Distribution. This species was encountered sympatrically with *E. proxima* sp.n. in the same mountain massif situated south of the Gongga Shan Mountains.

Habitats. Though *E. nigra* sp.n. was observed co-existing with *E. proxima* sp.n. in the same biotopes, it dominated at higher elevations.

subgenus *Pseudepaphius* Uéno, 1962

Pseudepaphius Uéno, 1962: 70, type species: *Epaphiopsis ishizuchiensis* Uéno, 1962.

The subgenus is characterized by the preapical pore of the elytra shifted anteriad. The habitus is always rather robust. The aedeagi of the subgenus members are relatively similar to each other: arcuate in shape, of medium size, with scaly patches in the endophallus. The most important modifications concern the shape of the apex which may be either simply attenuated or provided with a characteristic button similar to that of members of the subgenus *Epaphiopsis* s.str. The scaly patch in the endophallus varies considerably according to the species: small and barely distinguishable in some species and large and heavily sclerotized in others. The species of the group inhabit the litter in broadleaved forests and do not show adaptations to the semiendogean way of life. For the moment, only one species group can be readily recognized among members of the subgenus originated from mainland China. All other species seems to be isolated enough to be considered in their own groups. So it seems quite reasonable to wait for new discoveries allowing more natural re-arrangement in the future.

The *tronquetiana* species group

Robust species of medium size, body length 3.3-3.8 mm. Color usually rather dark, with blackish head and elytral disc and lightened margins and suture of elytra. Inner striae deeply engraved, outer evanescent, discal setiferous pores of elytra foveolate. Aedeagus with attenuated apical portion of median lobe and specifically modified apex (Figs 12-13).

Epaphiopsis (*Pseudepaphius*) *davidiani* Belousov et Kabak, sp. n.

Figs 12, 27.

Holotype: ♂ (ZISP), China, Sichuan, right bank of Niuzhihe River, E of Pusiun (=Pouxion) village, 2500-2700 m, 17.06.2000 (Belousov & Kabak leg.) [28º 32’ N / 102º 42’ E].

Paratypes: 19(5) ♂, 12(1) ♀ (ZISP, IZK, MPU, cAG, cAK, cBK, cPM, cVZ), collected together with holotype. — 12(3) ♂, 10 ♀ (cBK), China, Sichuan, right bank of Niuzhihe River, E of Pusiun (=Pouxion) village, 2600-2700 m, 16.06.2000 (Belousov & Kabak leg.).

40 specimens measured.

Description. Relatively large species, body length 3.29-3.79 mm, males on average larger, x*=3.59 mm vs. x*=3.46 mm in females. Habitus robust, convex and elongate. Appendages thick, of moderate length. Color variable: usually dark brownish, with blackish disc of head and elytra except for suture, margins and apex of elytra which are tinged with amber-reddish. Sometimes color of upper side lighter up to rather uniformly testaceous. Legs and antennae brown yellowish.

Head very small (PW/HW: 1.40-1.51, x*=1.45). Frons and occiput convex, transverse parietal impression rather deep. Eyes subconvex, of medium size, about as long as antennomere 3 (EyL/L3: 0.89-1.14, x*=1.03; EyL/TL: 1.24-1.64, x*=1.41). Genae very convex, with a few short hairs. Frontal furrows regularly arcuate, deep, strongly divergent in posterior part. Antennae of medium length (EL/AL: 1.17-1.28, x*=1.22); their third segment 1.75-2.27 (x*=2.01) times as long as wide, and 1.11-1.31 (x*=1.20) times as long as antennomere 2; middle antennomeres clearly longer than wide.

Pronotum (Fig. 27) convex, narrow and oblong (PW/PL: 1.20-1.30, x*=1.25), moderately constricted toward base (PW/PB: 1.34-1.48, x*=1.41). Lateral sides broadly rounded anteriorly, almost straight posteriorly, with no sinuation before hind angles. Latter obtusangular, rounded at apices, produced somewhat backward. Anterior angles salient. Base of pronotum markedly lobed (with deep lateral emarginations), of medium width (PB/PA: 0.95-1.11, x*=1.03). Anterior margin salient medially. Marginal bead of pronotum average, slightly expanded posteriorly. Basal transverse impression relatively deep, not sharply engraved, more distinct laterally, subangulate in basal foveae, with a deep small impression each side. Apical transverse impression distinct laterally; basal foveae small and shallow. Basal surface smooth or with a few wrinkles, apical one with a few punctures and

traces of wrinkles. Median line distinct, deepest near base. Anterior lateral seta in anterior third of pronotum, posterior one in hind angles.

Elytra oblong-ovate, strongly convex, in males larger (EW/PW: 1.34-1.47, x*=1.41 in males vs. x*=1.39 in females; EW/HW: 1.97-2.13, x*=2.05 in males vs. x*=2.01 in females; EL/EW: 1.34-1.45, x*=1.41 in males vs. x*=1.37 in females). Shoulders broadly rounded and slightly projecting. Marginal gutter of elytra average, barely wider than that of pronotum, narrowed before humeral group of umbilicate series. Elytral striae 1-3 continuous and deep, sharply engraved, clearly punctured, outer striae at most distinguishable only on disc. Intervals flat. Scutellar striole short and shallow. Apical striole long and deep, slightly arched, barely divergent anteriad and interrupted there, without distinct connection with discal striae. Both anterior and posterior discal pores weakly foveolate and strongly shifted anteriad; preapical pore on interspace 3, usually closer to stria 3 than to stria 2, strongly removed from elytral apex. Discal formula 13-17 (15), 30-40 (36), 73-84 (78). Exterior setiferous pore usually in site of stria 5, a little behind mid-length of elytra; its formula 48-56 (52). Formula of umbilicate series 8,13,19,25,57,63,78,87. Apical triangles elongate, their internal side divergent anteriad.

Microsculpture very faint, perceptible mostly in posterior part of head and comprised there of isodiametric meshes. That of pronotum and elytra almost completely reduced, consisting of transverse lines on elytra and strongly transverse meshes on pronotum. Surface seems mirror-like shining, with strong iridescent luster and micropunctures disseminated throughout.

Aedeagus (Fig. 12) of very characteristic shape, strongly deflexed at basal third, with "snake head" - shaped apex, rather strongly hooked upward in lateral view and triangular in dorsal view. Both distal and basal orifices large, the latter with sides deeply emarginate. Sagittal lobe of medium size. Parameres rather narrow, left one somewhat longer and provided with ventral apophysis, both parameres with 4 apical setae. Endophallus armature consisting of scaly patch in ventral position and proximal ring.

Diagnosis. The new species is rather close to *Epaphiopsis* (*Pseudepaphius*) *tronquetiana* (Deuve, 1995) from Guangxi. Both species are of the same rather large size, robust habitus and similar color, the lateral sides of the pronotum without distinct sinuation before obtuse hind angles, bead of pronotum narrow, elytra large and ovate, with shoulders broadly rounded but marked and so on. Nonetheless, the new species differs readily from *E. tronquetiana* by the median lobe of the aedeagus much more strongly deflexed at base and by its apex strongly hooked. Judging from the figures and original description by Th. Deuve, the new species is distinguishable as well by the less lobed base of the more narrow pronotum (PW/PL: 1.20-1.30, x*=1.25 vs. 1.33 in the species described by Th. Deuve) and especially by strongly differentiated striation of elytra: striae 1-3 on disc are sharply engraved and distinctly punctured, others very shallow and progressively evanescent toward sides of elytra.

Distribution. *E. davidiani* sp. n. is known only from a restricted area on the right bank of the Niuzhihe River near the village of Pouxion in southern Sichuan not far from the town of Ganluo.

Habitats. The species was found in the forest litter at elevations 2500-2700 m.

Derivatio nominis. It is a great pleasure for us to dedicate this species to our friend and colleague Dr. G.E. Davidian (St.-Petersburg), a specialist in the family Curculionidae for his many years' inappreciable assistance, especially in field trips.

Epaphiopsis (*Pseudepaphius*) *ubaoshana* Belousov et Kabak, sp. n.

Fig. 13.

Holotype: ♂ (ZISP), China, S Sichuan, right tributary of Lianhegou (=Lianghegou) River, W of Mt. Ubaoshan, near Jimi, 3000 m, 28.06.2000 (Belousov & Kabak leg.) [ca. 28º 44' N / 102º 54' E].

Paratypes: 6 (1) ♂, 2 ♀ (cAG, cBK), collected together with holotype.

8 specimens measured.

Description. Relatively large species, body length 3.53-3.70 (x*=3.61) mm. Habitus robust, convex and elongate. Appendages thick, of moderate length. Color variable: usually dark brownish, with blackish disc of head and elytra except for suture, margins and elytral apex which are tinged with amber-reddish. Sometimes color of upper-side lighter, up to uniformly testaceous. Legs and antennae brown yellowish.

Head very small (PW/HW: 1.43-1.51, x*=1.48). Frons and occiput convex, transverse parietal impression rather deep. Eyes subconvex, medium-sized, about as long as antennomere 3 (EyL/L3: 0.91-1.03, x*=0.99; EyL/TL: 1.26-1.50, x*=1.39). Genae very convex, with a few short hairs. Frontal furrows regularly arcuate, deep, strongly divergent in posterior part. Antennae of medium length (EL/AL: 1.21-1.27, x*=1.25); their third segment 1.92-2.13 (x*=1.98) times as long as wide, and 1.14-1.26 (x*=1.20) times as long as antennomere 2; middle antennomeres clearly longer than wide.

Pronotum convex, narrow and oblong (PW/PL: 1.22-1.32, x*=1.26), moderately constricted at base (PW/PB: 1.35-1.41, x*=1.38). Lateral sides broadly rounded anteriorly, almost straight posteriorly, with no sinuation before hind angles. Latter obtusangular, rounded at apices, produced slightly outward. Anterior angles salient. Base of pronotum markedly lobed, emarginate laterally, of medium width (PB/PA: 1.02-1.10, x*=1.07). Anterior margin salient medially. Marginal bead of pronotum average, slightly expanded posteriorly. Basal transverse impression relatively deep, not sharply engraved, more distinct laterally, angulate near basal foveae. Apical transverse impression distinct laterally, faint medially. Basal foveae small and shallow. Basal surface smooth or weakly rugose, apical one slightly punctured and barely rugose. Median line distinct, deepest near base. Anterior lateral seta in anterior third of pronotum, posterior one in hind angles.

Elytra oblong-ovate, strongly convex (EW/PW: 1.31-1.43, x*=1.36; EW/HW: 1.93-2.05, x*=2.01 in males vs. x*=1.96 in females; EL/EW: 1.41-1.46, x*=1.43 in males vs. 1.40 in females). Shoulders broadly rounded and slightly projecting. Marginal gutter of elytra average, barely wider than that of pronotum, narrowed before humeral group of umbilicate series. Elytral striae 1-3 continuous and deep, sharply engraved, distinctly punctured, outer striae at most distinguishable only on disc. Intervals flat. Scutellar striole short and faint. Apical striole long and deep, barely arched, slightly divergent anteriad and interrupted there, without distinct connection with discal striae. Both anterior and posterior discal pores weakly foveolate and strongly shifted anteriad; preapical pore on interspace 3, usually closer to stria 3 than to stria 2, strongly removed from elytral apex. Discal formula 15-18 (16), 36-41 (39), 74-79 (77). Exterior setiferous pore usually in site of stria 5, a little behind mid-length of elytra, its formula 50-55 (52). Formula of umbilicate series 8,13,19,25,57,63,79,87. Apical triangles elongate, their internal side divergent anteriad.

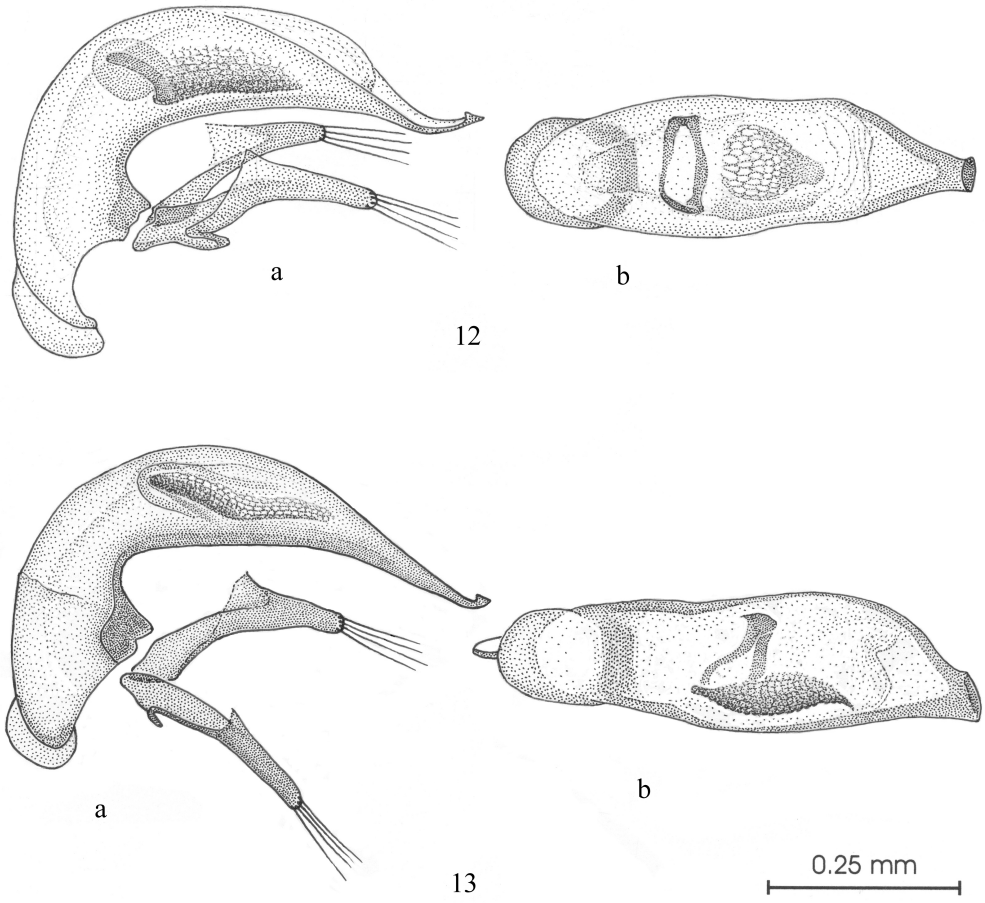
Microsculpture very shallow, perceptible mostly in posterior part of head and comprised there of isodiametric meshes. That of pronotum and elytra almost completely reduced, consisting of transverse lines on elytra and strongly transverse meshes on pronotum. Surface seems mirror-like shining, with strong iridescent luster and micropunctures disseminated throughout.

Aedeagus (Fig. 13) similar to that of *E. davidiani* sp.n., with apex less strongly hooked upward in lateral view and asymmetrically truncated in dorsal view, more or less strongly emarginate on right side. Both distal and basal orifices are large, the latter slightly emarginate. Sagittal aileron of medium size. Parameres rather narrow, especially in distal half; left one somewhat longer and provided with ventral apophysis, both parameres with 4 apical setae. Endophallus armature consisting of proximal ring and scaly patch located near left wall of median lobe.

Diagnosis. Doubtless the new species is most closely related to *E. davidiani* sp.n., but its aedeagus is somewhat longer, apex less strongly hooked upward in lateral view and asymmetrically obliquely truncated in dorsal view. The endophallus armature consists of a similar scaly patch but its location is quite different: near the left wall of the median lobe (Fig. 13 vs. Fig. 12). Externally these two species are very similar, except *E. ubaoshana* sp.n. has the more elongate elytra (EW/PW: x*=1.36 vs. x*=1.40; EW/HW: x*=2.00 vs. x*=2.03; EL/EW: x*=1.43 vs. x*=1.39 in *E. davidiani* sp.n.)

Distribution. This species is known only from the type locality situated on the right bank of the Lianghegou River, west of Mount Ubaoshan, near the village of Jimi.

Habitats. The species was found in the forest litter at an elevation of 3000 m.



Figs 12-13. Aedeagus of *Epaphiopsis* spp. a - lateral view; b - dorsal view.
12 - *E.* (*Pseudepaphius*) *davidiani* sp.n.; 13 - *E.* (*Pseudepaphius*) *ubaoshana* sp.n.

Species out of species groups

All the following species, for the time being, are not arranged in the species groups, though *E. korolevi* sp.n. shows a certain resemblance with members of the *tronquetiana* group on the one side and with *E. cavazzutii* (Deuve), on the other. Only future discoveries along the pathway connecting the type locality of *E. cavazzutii* (Deuve) with that of *E. korolevi* sp.n. will allow recognizing natural species groups.

Epaphiopsis (*Pseudepaphius*) *korolevi* Belousov et Kabak, sp. n.

Figs 14, 28.

Holotype: ♂ (ZISP), China, S Sichuan, S of Xichang, E slope of Mt. "4282" (NE of Dechang), H~2800 m, 7.05.2001 (Belousov & Korolev leg.) [ca. 27º 32' N / 102º 22' E].

Paratypes: 7(2) ♂, 13 ♀ (MPU, cAG, cAK, cBK), collected together with holotype.

18 specimens measured.

Description. Medium-sized species of *Stevensius*-like appearance: convex pronotum, strongly constricted at base and ovoid very convex elytra; body length 3.07-3.48 mm, males on average smaller, x*=3.20 mm vs. x*=3.34 mm in females. Appendages of moderate length, legs rather thick. Color variable: usually dark brownish, with blackish disc of head and elytra except for suture, margins and apex of elytra which are tinged with amber-reddish. Sometimes color of upper side lighter, up to uniformly testaceous in one specimen. Legs and antennae uniformly brown yellowish.

Head small (PW/HW: 1.39-1.44, x*=1.41), subtriangular in shape (its lateral sides somewhat convergent anteriad). Frons and occiput convex, parietal transverse impression rather deep. Eyes convex, medium-sized, about as long as antennomere 3 (EyL/L3: 0.95-1.10, x*=1.00; EyL/TL: 1.12-1.38, x*=1.26). Genae very convex, with a few short hairs. Frontal furrows regularly arcuate, deep, strongly divergent in posterior part. Antennae of medium length (EL/AL: 1.12-1.21, in males longer, x*=1.14 vs. x*=1.18 in females); their third segment 1.72-2.13 (x*=1.93) times as long as wide, and 1.09-1.38 (x*=1.18) times as long as antennomere 2; middle antennomeres clearly longer than wide. Retinaculum on right mandible well-defined, remainder of mandibular tooth normally without median denticle.

Pronotum (Fig. 28) convex and very narrow (PW/PL: 1.18-1.30, in males somewhat broader, x*=1.25 vs. x*=1.22 in females), cordate, strongly constricted toward base (PW/PB: 1.41-1.49, x*=1.45). Lateral sides broadly rounded, briefly and deeply sinuate before hind angles; latter acute, pointed apically and produced outward. Anterior angles salient. Base of pronotum markedly lobed (with deep emarginations laterally), narrow (PB/PA: 0.97-1.05, x*=1.01). Anterior margin very strongly salient medially (Fig. 28). Marginal bead of pronotum average, slightly expanded posteriorly. Basal transverse impression relatively deep, not sharply engraved, more distinct laterally, angulate near basal foveae, with a deep small impression each side. Basal surface weakly rugose, apical one slightly punctured. Median line distinct, deeper near base. Small discal fovea on each side of pronotum. Anterior lateral seta set in anterior third of pronotum, posterior one in hind angles.

Elytra ovoid, convex and short (EW/PW: 1.36-1.45, x*=1.40; EW/HW: 1.92-2.06, in males x*=1.96 vs. x*=2.00 in females; EL/EW: 1.32-1.39, x*=1.35), widest about their mid-length, somewhat attenuated apically. Shoulders oblique and subangulate near level of anterior umbilicate pore. Marginal gutter of elytra rather wide, clearly wider than that of pronotum, strongly narrowed before humeral group of umbilicate series. Elytral striae 1-2 continuous and deep, sharply engraved, distinctly punctured, stria 3 more or less distinct only on disc, usually shortened both anteriorly and posteriorly, others evanescent. Intervals flat. Scutellar striole short and shallow. Apical striole long and deep, weakly arcuate, directed forward and slightly outward, abruptly interrupted anteriorly, without distinct connection with discal striae. Both anterior and posterior discal pores weakly foveolate and strongly shifted anteriad; preapical pore on interspace 3, usually closer to stria 3 than to stria 2, strongly removed from elytral apex. Discal formula 11-14 (12), 33-40 (36), 81-86 (83). Exterior setiferous pore usually in site of stria 5 (though the latter is completely reduced), a little behind mid-length of elytra; its formula 51-62 (55). Formula of umbilicate series 8,13,19,25,56,61,79,88. Apical triangles of elytra elongate, their internal sides divergent anteriad.

Microsculpture very weak, perceptible mostly in posterior part of head and comprised there of isodiametric meshes. That of pronotum and elytra almost completely reduced, consisting of transverse lines on elytra and strongly transverse meshes on pronotum. Surface seems mirror-like shining, with strong iridescent luster and micropunctures disseminated throughout.

Aedeagus (Fig. 14) very small, slightly S-shaped, apical lamella subtriangular. Sagittal lobe reduced. Parameres rather thick, each usually with 4 apical setae. Endophallus armature small, spatulate, feebly sclerotized.

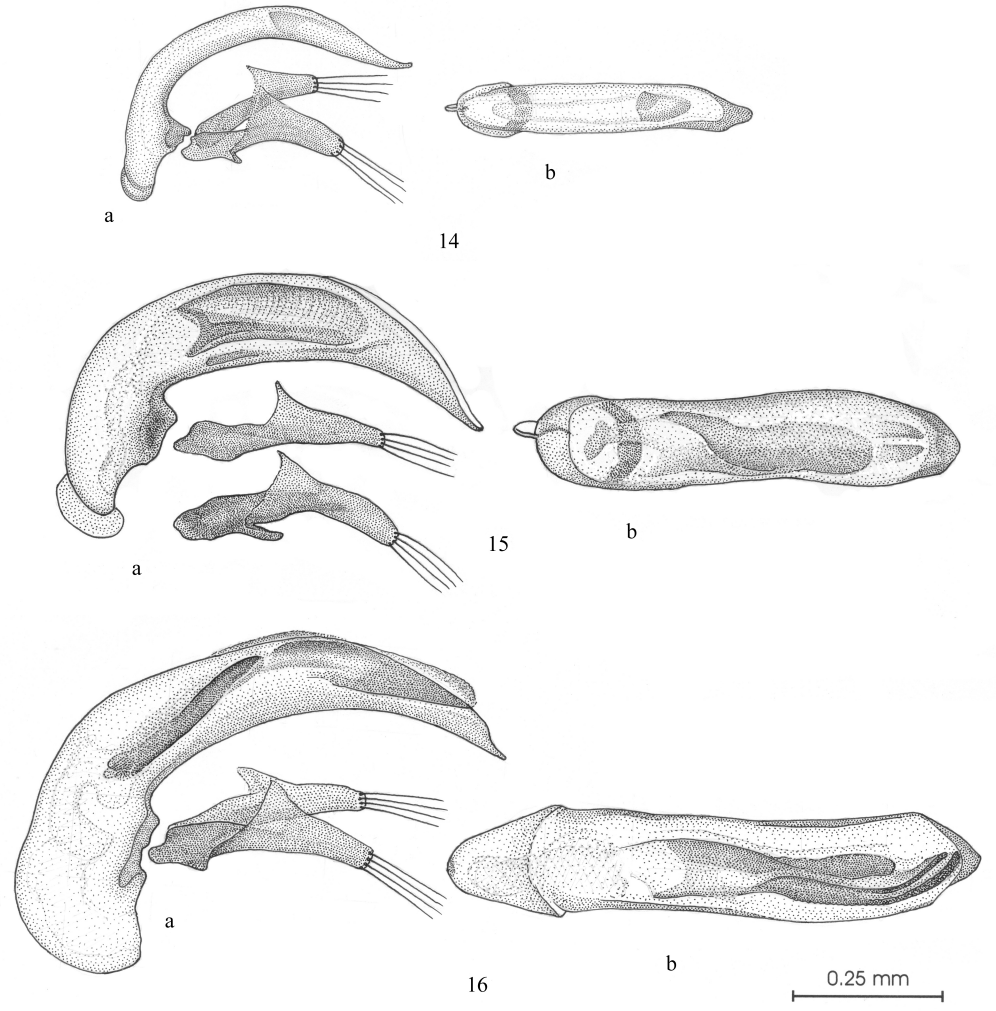
Diagnosis. In its *Stevensius*-like appearance (pronotum strongly narrowed at base, with lateral sides briefly and rather deeply sinuate before hind angles, ovoid and strongly convex elytra), the new species seems to be highly isolated within the subgenus

Pseudepaphius though its affinities with the above considered Chinese members of the subgenus *Pseudepaphius* are out of doubt. Apart from the features listed above, the new species is unique in having the short elytra with somewhat angulate shoulders and rather widely beaded lateral margins. In the structure of the aedeagus , the species resembles *E.* (*Pseudepaphius*) *cavazzuttii* (Deuve, 1995) from Guangxi, but is easily distinguished by the aedeagal apex distinctly hooked upward (attenuated downward in its counterpart). From the two allied species of *Pseudepaphius* described above (*E. davidiani* sp.n. and *E. ubaoshana* sp.n.), *E. korolevi* sp.n. is distinguished among other characters by the preapical pore less strongly removed from the elytral apex, though its position is still typical for *Pseudepaphius,* since it is located markedly before anterior termination of apical striole.

Distribution. The species was collected on the eastern slope of the Lunanshan Mountain Range, near peak "4282" (northeast of the town of Dechang), southern Sichuan.

Habitats. Among known sympatric species of the genus, *E. korolevi* sp.n. seems to be confined to lower elevations. It was found in the litter of bamboo bushes, near a mountain stream at an elevation of 2800 m a.s.l.

Derivatio nominis. We are pleased to name this species after our friend Dr. A.E. Korolev (St.-Petersburg) for his many years' invaluable help in our work.



Figs 14-16. Aedeagus of *Epaphiopsis* spp. a - lateral view; b - dorsal view.
14 – *E.* (*Pseudepaphius*) *korolevi* sp.n.; 15 – *E.* (*Pseudepaphius*) *robusta* sp.n.;
16 - *E. unisetosa* sp.n.

Epaphiopsis (*Pseudepaphius*) *robusta* Belousov et Kabak, sp.n.

Figs 15, 29.

Holotype: ♂ (ZISP), China, Sichuan, Xiling Mt., 1600-2400 m, litter and moss, 30.07-4.08.1996 (S. Kurbatov leg.).

Paratypes: 1(1) ♂, 2 ♀ (cBK), collected together with holotype. — 1(1) ♂ (cBK), China, C Sichuan, Xiling Snow Mts, 2100-3100 m, 1-3.08.1996 (S. Kasantsev leg.).

5 specimens measured.

Description. Large-sized species, body length 3.53-4.05 mm (males on average larger, x*=3.75 mm vs. x*=3.69 mm in females). Habitus robust and convex. Appendages rather long but thick. Color of dorsum amber reddish or brownish, nearly uniform; narrow suture and margins of elytra a little lighter in some specimens. Legs and antennae uniformly yellowish. Surface strongly iridescent.

Head proportionally small (PW/HW: 1.48-1.55, x*=1.52). Eyes convex, medium-sized, their diameter considerably larger than length of antennomere 3 (EyL/L3: 1.09-1.25, x*=1.15) and 2.19-2.60 (x*=2.43) times al long as temples. Antennae long and filiform, in males longer (EL/AL: 1.08-1.11, x*=1.09 in males vs. 1.15-1.25 in females); their third segment 1.93-2.55 (x*=2.11) times as long as wide, and 1.10-1.33 (x*=1.20) times as long as antennomere 2; middle antennomeres strongly elongate. Mandibles slender, right one with tridentate tooth, though premolar is partly fused, median denticle close to premolar and more or less reduced. Labial tooth vaguely defined, with distinct ventral groove.

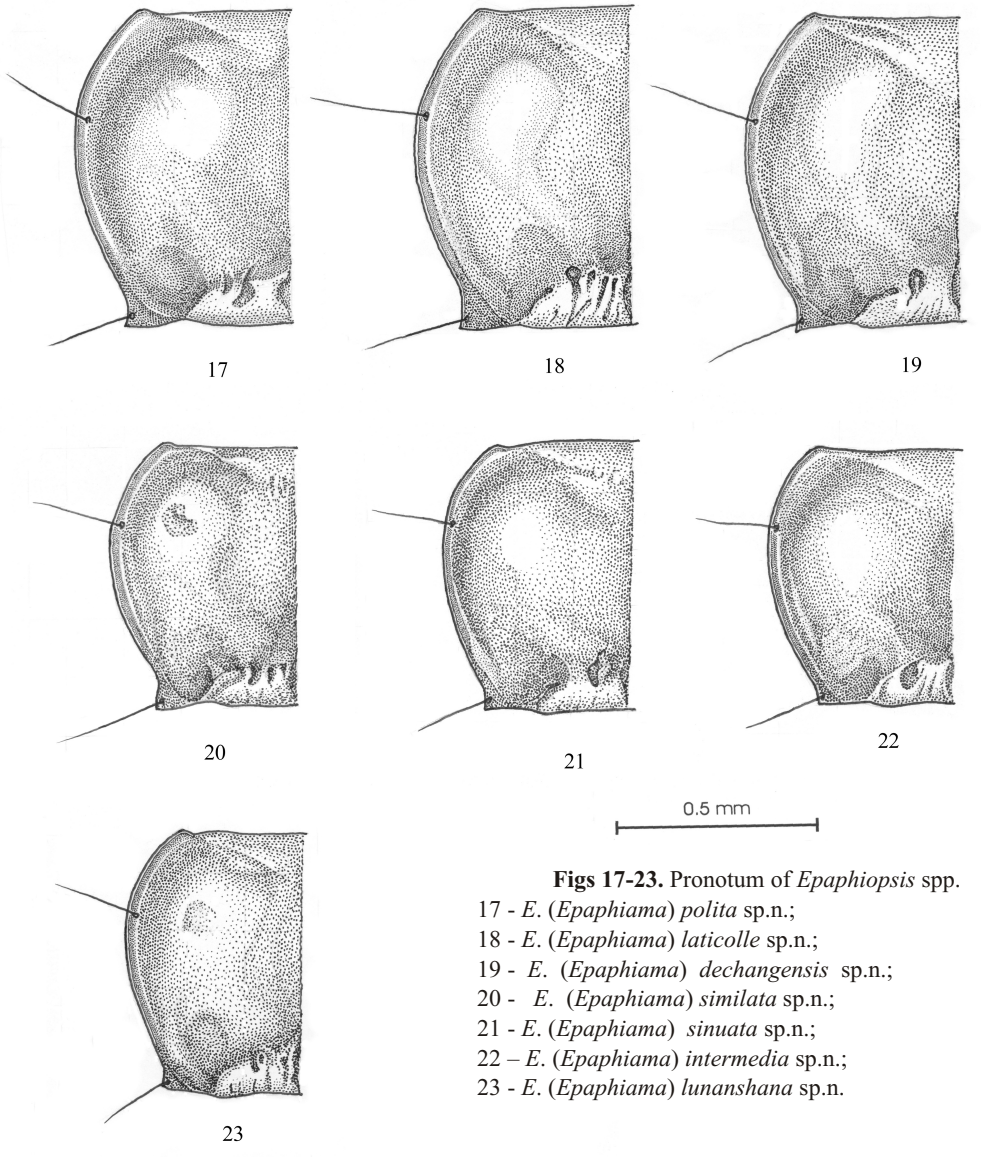
Pronotum (Fig. 29) convex and very ample, moderately transverse (PW/PL: 1.33-1.42, in males broader, 1.38-1.42, x*=1.39 vs. 1.33-1.38 in females), very slightly constricted toward base (PW/PB: 1.22-1.28, x*=1.25), its maximum width about mid-length. Disc of pronotum strongly convex, especially in posterior third, without clearly defined discal foveae. Lateral sides broadly and evenly rounded throughout, without sinuation before hind angles, at most, only briefly incised here. Hind angles very small, though marked, rectangular to obtusangular, blunt at apices. Anterior angles distinguished though not salient. Base of pronotum broad (PB/PA: 1.24-1.29, x*=1.26 in males and 1.21-1.23 in females). Basal margin straight or barely emarginate on sides. Anterior margin rectilinear. Lateral margins narrowly bordered. Marginal bead shallow, average anteriorly, strongly expanded in posterior half. Basal transverse impression deep, sharply engraved, set very closely to posterior margin of pronotum, nearly rectilinear, with one or two small foveae. Apical transverse impression finely delimited laterally, shallow medially, rather close to anterior margin. Basal foveae very small and shallow. Basal surface smooth except for the above mentioned foveae and basal impression of median line, latter distinct but not reaching anterior margin of pronotum. Posterior lateral seta just in hind angles, anterior one in anterior third, distinctly before level of pronotal maximum width.

Elytra ovate-oblong, not very large, compared with massive pronotum (EW/PW: 1.28-1.34, x*=1.29 in males, vs. 1.32-1.34 in females; EW/HW: 1.94-2.03, x*=1.99; EL/EW: 1.38-1.48, in males on average longer, x*=1.44 vs. 1.39-1.40 in females), broad at base and distinctly attenuate in apical half. Disc very convex. Shoulders protruding. Lateral margins of elytra rather narrowly beaded and moderately reflexed, the bead is considerably narrower than that of pronotum. 3-4 internal elytral striae continuous and more or less deep, al least on disc, outer striae shallower, stria 7 discernible as a row of isolated punctures in its middle part; all striae distinctly punctured. Intervals mostly flat, only 2-3 internal intervals subconvex in anterior half. All interspaces except the first, approximately of same width. Apical striole rather long, sharply engraved, straight, subparallel to longitudinal axis of body, sometimes briefly curved toward stria 3 anteriorly. Both anterior and posterior discal pores strongly shifted anteriad; discal formula 11-13 (12), 31-36 (34), 69-75 (73). Preapical pore placed in stria 2, far removed from elytral apex, about twice farther than anterior termination of apical striole. Outer pore adjoining stria 5, on average a little behind mid-length of elytra, its formula 49-56 (52). Formula of umbilicate series 7,12,17,22,59,64,79,88. Apical triangle extremely long, angulo-apical pore about twice closer to suture than to outer pore.

Microsculpture comprised of isodiametric meshes on head, irregular transverse meshes on pronotum and transverse lines on elytra, faint medially on disc of pronotum and head.

Aedeagus (Fig. 15) relatively small, especially compared with a rather large size of body. Median lobe strongly deflexed near basal bulb, and slightly - in apical third, its apex barely hooked. Apical lamella short and broadly rounded in dorsal view. Sagittal aileron of medium size. Parameres average, the left one a little longer, distinctly curved in apical third, provided with a long ventral apophysis. Endophallus armature large but feebly sclerotized, consisting of scaly patch.

Variation. The only known male collected at elevations of 2100-3100 m is considerably larger, with discal setae shifted anteriad. Despite of great difference in size, its aedeagus is identical to that of the other known males, even concerning its dimensions. The proportions of the body are the same.

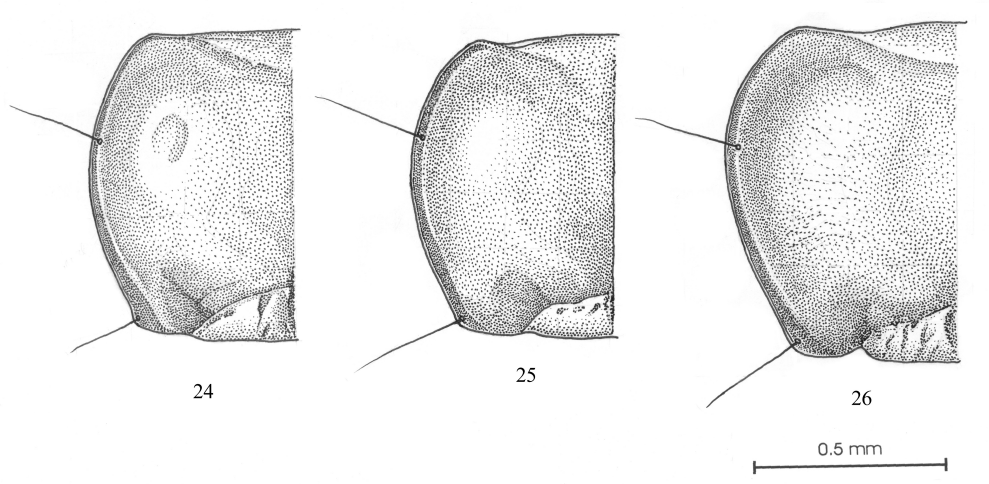


Figs 17-23. Pronotum of *Epaphiopsis* spp.
17 - *E*. (*Epaphiama*) *polita* sp.n.;
18 - *E*. (*Epaphiama*) *laticolle* sp.n.;
19 - *E*. (*Epaphiama*) *dechangensis* sp.n.;
20 - *E*. (*Epaphiama*) *similata* sp.n.;
21 - *E*. (*Epaphiama*) *sinuata* sp.n.;
22 – *E*. (*Epaphiama*) *intermedia* sp.n.;
23 - *E*. (*Epaphiama*) *lunanshana* sp.n.

Diagnosis. The species considered seems to be rather strongly isolated within the subgenus *Pseudepaphius*. Among all known Chinese representatives of the subgenus *Pseudepaphius*, it may be easily recognized by the following combination of characters: the very large pronotum with broad base and lateral sides not sinuate before small hind angles, and oblong-ovate, strongly convex elytra with attenuated apical half.

Distribution. This species is known from the Xiling Snow Mountain not far from the city of Chengdu.

Habitats. Judging from the label data, the species was found at 1600-3100 m elevations.



Figs 24-26. Pronotum of *Epaphiopsis* spp. 24 – *E*. (*Epaphiama*) *gonggaica* (Deuve); 25 - *E*. (*Epaphiama*) *proxima* sp.n.; 26 – *E*. (*Epaphiama*) *nigra* sp.n.

Epaphiopsis unisetosa Belousov et Kabak, sp.n.

Figs 16, 30.

Holotype: ♂ (ZISP), China, Sichuan, right bank of right trib. of Lanhegou (=Lianghegou) River, SSW of Jimi vill., 2400-2500 m, 25.06.2000 (Belousov & Kabak leg.) [28º 41' N / 102º 55' E].

Paratypes: 1 ♂, 1 ♀ (cBK), collected together with holotype.

3 specimens measured.

Description. Medium-sized species, body length 3.24-3.39 mm in males and 3.43 mm in female. Habitus robust and strongly convex. Appendages thick and rather short. Color of dorsum blackish brown, with lighter uniform legs and antennae. Surface strongly iridescent.

Head very small compared with pronotum (PW/HW: 1.52-1.53 in males and 1.50 in female), but swollen, especially in posterior part. Eyes convex and medium-sized (EyL/L3: 1.15-1.30, x*=1.20). Frontal furrows not deep, slightly angulate at middle, strongly divergent posteriorly. Supraorbital pores foveolate, with a few wrinkles. Antennae of medium length (EL/AL: 1.17-1.19, in males and 1.29 in female); their third segment 1.82-2.11 (x*=1.95) times as long as wide and 1.11-1.24 (x*=1.18) times as long as antennomere 2. Premolar on right mandible well-developed, but fused with remainder of mandibular tooth, its median denticle reduced, base long.

Pronotum (Fig. 30) very ample, evenly convex and strongly transverse (PW/PL: 1.44-1.46, x*=1.45), moderately constricted at base (PW/PB: 1.35-1.38, x*=1.37). Lateral sides broadly rounded anteriorly, almost straight or barely sinuate before hind angles; latter obtusangular, blunt at apices. Anterior angles weakly salient. Base of pronotum broad (PB/PA: 1.17-1.18 in males and 1.11 in female). Basal margin rectilinear, barely sinuate on sides near hind angles. Anterior margin straight or regularly and weakly concave. Marginal bead of pronotum rather narrow throughout, though somewhat expanded posteriorly. Basal transverse impression moderately deep, with a fovea on each side, weakly angulate lateraly. Apical transverse impression finely delimited. Basal foveae rather small but relatively deep, separated from lateral bead by convex area. Basal surface rugose. Median line distinct, deepest near base. Anterior lateral seta in anterior third of pronotum, posterior one just in hind angles. Disc with a single seta on each side of pronotum, set a little before of its mid-length.

Elytra small compared with pronotum (EW/PW: 1.27-1.43, x*=1.34) but rather large compared with head (EW/HW: 1.95-2.17, x*=2.06 in males, 1.99 in female), very broad and convex (EL/EW: 1.22-1.37, x*=1.30). Shoulders oblique and slightly projecting. Marginal gutter of elytra average, weakly reflexed, its basal part rather wide, basal border reaching stria 4. All elytral striae deep, even stria 8 distinct, all roughly punctured, though both striae and punctures becoming shallower toward base and apex of elytra. Interspaces subconvex, interval 1 narrower than interval 2. Apical striole rather long, moderately engraved, joining stria 5 anteriorly. Anterior discal pore slightly, posterior discal pore strongly shifted anteriad, preapical pore located far from elytral apex, either adjoining stria 2 or located on interspace 3. Discal formula 17-20 (19), 37-40 (39), 72-76 (73). Outer discal pore set on interspace 5, its formula 56-57 (56). Formula of umbilicate series 7,12,17,24,58,63,80,89. Apical triangle very long. Angulo-apical pore at least 1.5 times closer to suture than to exterior pore.

Microsculpture comprised of isodiametric meshes on head, fine irregular transverse meshes on pronotum and extremely fine transverse lines on elytra, faint medially on disc of pronotum and head.

Foretibiae moderately grooved externally and glabrous on anterior surface.

Aedeagus (Fig. 16) rather large and thick, gradually arcuate, robust at proximal part and comparatively slender at distal part. Apical lamella very short and triangular in dorsal view. Sagittal lobe lacking. Basal orifice small, its sides not emarginate. Parameres average, left one a little longer, its ventral apophysis small, each paramere with 4 apical setae. Endophallus armature very large, consisting of scaly patches.

Diagnosis. The new species is unique within the genus *Epaphiopsis* in having a single seta on each side of the pronotal disc. Its affinities with members of the subgenera *Epaphiopsis* Uéno, 1953 from Japan and *Formosiellus* Uéno, 1989 from Taiwan characterized by the more or less strongly developed pubescence of the pronotum need further confirmations. Of these two, the latter subgenus seems to be more promising as a possible relative of *E. unisetosa* sp.n. in having glabrous genae and normally developed preapical pore. Of a special interest in this respect is *E. (Formosiellus) hsuehshana* Uéno, 1989 with sparse pronotal pubescence. Nonetheless, *E. unisetosa* sp.n. is easily distinguished from all members of the subgenus *Formosiellus*, first of all, by only one discal pores in stria 5.

A certain similarity of the aedeagus of the new species with those of *Epaphiopsis* (*Allepaphiama) himalayca* Uéno & Pawlowski (1983) and *E. robusta* sp.n. described above deserves to be noted.

Distribution. This species is known only from the type locality situated on the right bank of the right tributary of the Langhegou River, southwest of the Jimi village, S of the town of Ganluo, southern Sichuan.

Habitats. *E. unisetosa* sp.n. was collected in the forest litter at 2400-2500 m a.s.l.

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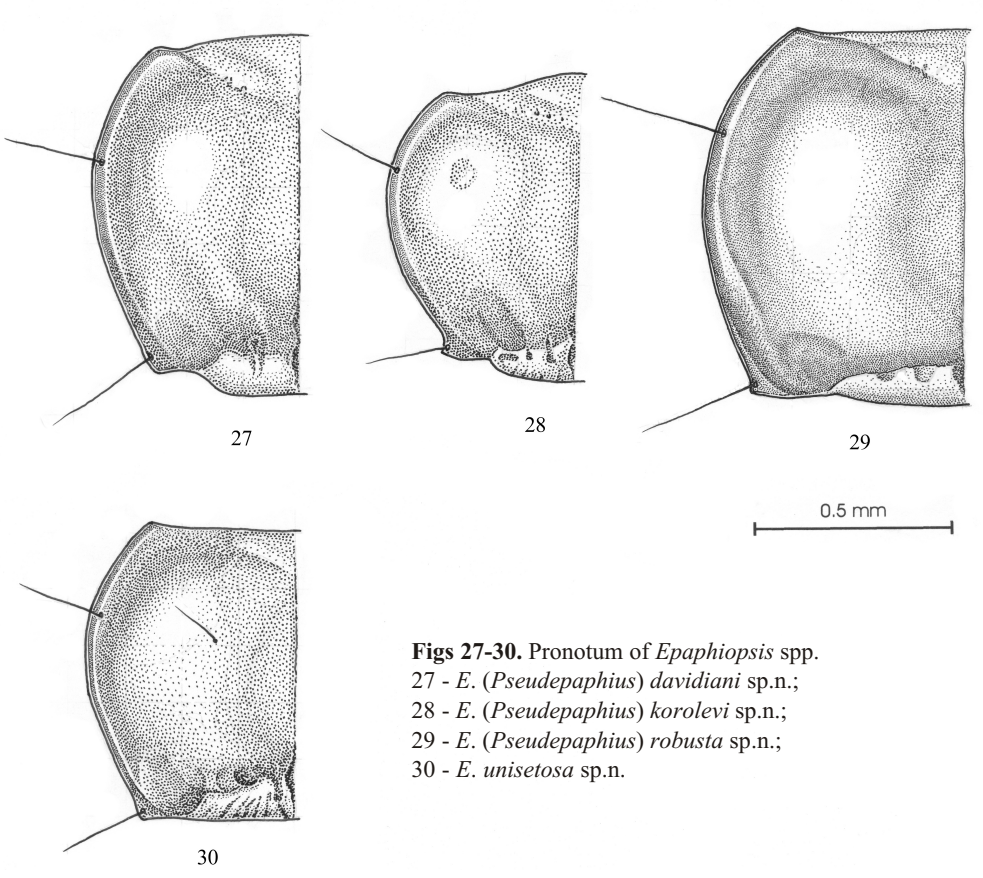

Figs 27-30. Pronotum of *Epaphiopsis* spp.
27 - *E.* (*Pseudepaphius*) *davidiani* sp.n.;
28 - *E.* (*Pseudepaphius*) *korolevi* sp.n.;
29 - *E.* (*Pseudepaphius*) *robusta* sp.n.;
30 - *E. unisetosa* sp.n.

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Резюме

И.А. Белоусов, И.И. Кабак. **Новые виды рода *Epaphiopsis* Uéno, 1953 из Китая (Coleoptera, Carabidae).**

Описаны 15 новых видов рода *Epaphiopsis* Uéno из южной части провинции Сычуань, Китай. Из них 10 видов относятся к подроду *Epaphiama* Jeannel: *E. polita* sp.n., *E. similata* sp.n. и *E. intermedia* sp.n. из гор к юго-западу от пос. Бицзишань; *E. laticolle* sp.n. и *E. inconspiqua* sp.n. из окрестностей горы Юаньбаошань и *E. sinuata* sp.n. из окрестностей горы Убаошань у пос. Цзыми (все упомянутые локалитеты находятся в бассейне р. Лянхэгоу южнее города Ганьло); *E. dechangensis* sp.n. и *E. lunanshana* sp.n. из хр. Лунаньшань СВ Дечана, южнее г. Сичан; а также *E. proxima* sp.n. из гор к северо-западу от г. Мяннин, *E. nigra* sp.n. из гор к западу от пос. Лицзыпин, ЮЮЗ г. Шимянь. 5 новых видов относятся к подроду *Pseudepaphius* Uéno: *E. davidiani* sp.n. из гор по правому борту р. Нюжихэ в окрестностях пос. Пусюн, *E. ubaoshana* sp.n. из окрестностей горы Убаошань у пос. Цзыми (оба последних локалитета расположены южнее г. Ганьло), *E. korolevi* sp.n. с восточных склонов хр. Лунаньшань СВ Дечана, южнее г. Сичан, *E. robusta* sp.n. из гор Силин недалеко от г. Чэнду; а также *E. unisetosa* sp.n. из гор в бассейне р. Лянхэгоу, ЮЮЗ пос. Цзыми, южнее г. Ганьло. Для всех изученных видов рода *Epaphiopsis* приведены морфометрические характеристики. Даны новые сведения о распространении *E. gonggaica* (Deuve). Рассмотрено несколько групп видов, некоторые из которых предложены впервые.