

Two new species of the mygalomorph spider genus *Raveniola* Zonstein, 1987 (Araneae, Nemesiidae) from southwestern Asia

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All measurements are given in millimeters, except eye diameters and interspaces shown as ratio of the microscope scale units. Abbreviations: ALE - anterior lateral eyes, AME - anterior median eyes, PLE - posterior lateral eyes, PLS - posterior lateral spinnerets, PME - median lateral eyes, PMS - posterior median spinnerets; Fm - femur, Pt - patella, Tb - tibia, Mt - metatarsus, Tr - tarsus; M - megaspine, b - bristle; d - dorsal, p - prolateral, pd - prodorsal, pv - proventral, r - retrolateral, rd - retrodorsal, rv - retroventral, v - ventral (position). Acronyms: ZISP - Zoological Institute of Russian Academy of Sciences, St.-Petersburg; MCSN - Museo civico di Storia naturale, Genova.

Raveniola vonwicki Zonstein, sp. n. (Figs. 1-3)

Types: ♂ holotype labeled: "ZISP 454-914. Bogrovdagh Mt. R. [recent NW Iran], eastern slope. 7.06.1914. Coll. S. N. von Wick", 1♀ allotype with the same label data; dep. ZISP).

Diagnosis: By the presence of normally developed PMS (which are more or less reduced in Central Asian congeners) the new species could be drawn together with southwestern Asian species - *R. microps* (Ausserer, 1871), *R. pontica* (Spassky, 1937), *R. niedermeyeri* (Brignoli, 1972), *R. hyrcanica* Dunin, 1988 and especially with *R. zaitzevi* (Charitonov, 1948) because the mentioned species also possesses more numerous maxillary cuspules (12-15 vs. 2-8 in other species of this group). From the last species *R. vonwicki* differs by even more numerous (>20) cuspules and by digitiform apical segment of PLS (that is more short in *R. zaitzevi*). Both shape of male palpus and configuration of female spermathecae somewhat resemble those in *R. niedermeyeri*, but unlike the last species *R. vonwicki* possesses female spermathecae divided; in males embolus forms a spiral structure (tapered in males of *R. niedermeyeri* - sf.: Brignoli, 1972).

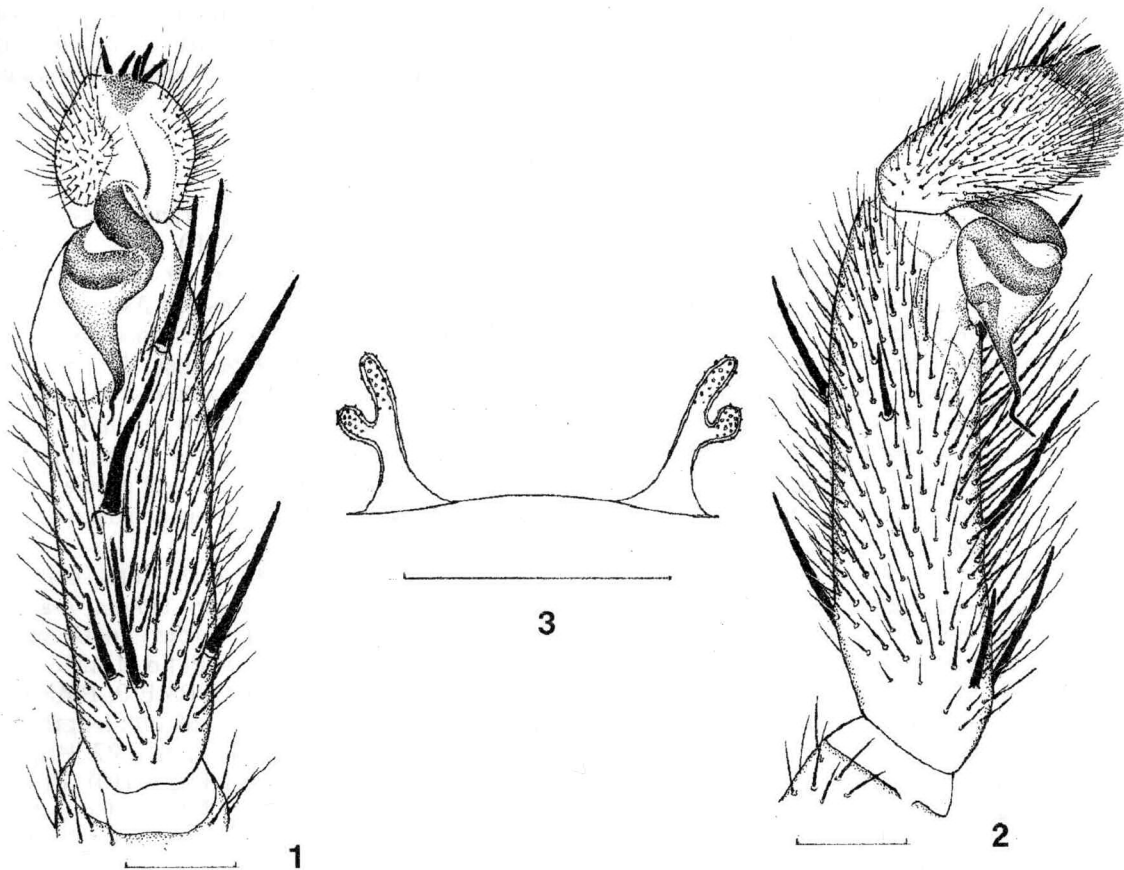
Male (holotype). Total body length ca. 12.00. Carapace: length 5.53, width 4.15. Color in alcohol: carapace, palps and legs dorsally brown-rufous; chelicerae reddish-brown; sternum, labium, maxillae, palps and legs ventrally light brown; abdomen dorsally brown with dense light-brown spots; ventral surface of abdomen brownish-gray. Carapace covered with thin sparse dark hairs. Ratio of AME, ALE, PLE, PME: 9, 15, 7, 8. Interspaces: AME-AME 6, ALE-AME 6, ALE-PLE 5, PLE-PME 3, PME-PME 20. Chelicerae with 9+10 promarginal teeth and 4+5 denticles, rastellum absent. Labium: length 0.43, width 0.87. Maxillae: 20+24 cuspules, serrula not evident. Sternum: length 2.53, width 2.27. Palp: Fm d1.1.1, pd1, rd1; Pt r1; Tb d1.1.1, p1.1.1, v7(8); Tr d5. Leg I: Fm d1.1.b.b, pd1.1.1, rd1(0); Pt 0; Tb p1.1, pv1, rv1.1.1.M.M; Mt v2. Leg II: Fm d1.1.b.b, pd1.1.1; Pt p1; Tb p1.1.1, v2.2.3; Mt p1, v2.2.3. Leg III: Fm d1.1.b.b, pd1.1.1, rd1.1.1; Pt p1, r1; Tb d1.1, p1.1, r1.1.1, v2.2.2; Mt d1.1.1, pd1.1.1, p1.1.1, r1.1.1, v2.2.3. Leg IV: Fm d1.1.b.b, pd1.1.1, pr1.1.1; Pt p1, r1; Tb d1.1, p1.1.1, r1.1.1, v2.2.3; Mt d1.1.1, p1.1.1, r1.1.1.1, v3.2.2.2. Leg tarsi aspinose. Leg measurements as shown in Table 1 (left). Scopula: distal on metatarsi I-II, entire on tarsi I-II, vestigial on tarsi III, absent on tarsi IV. Paired claws: outer margin with 8-9 teeth, 6-9 teeth on inner margin. Trichobothria: 2 rows of 7-8 on tibiae, 11-14 on metatarsi, 11-12 on tarsi. PMS: length 0.53, diameter 0.17. PLS: maximal diameter 0.45; length of basal, medial and apical segments 0.70, 0.63, 0.77; total length 2.10; apical segment digitiform.

Female (allotype). Total body length ca. 16.50. Carapace: length 6.45, width 5.67. Color in alcohol: similar to that of male. Carapace covered with sparse dark hairs. Ratio of AME, ALE, PLE, PME: 10, 18, 11, 10. Interspaces: AME-AME 13, ALE-AME 7, ALE-PLE 7, PLE-PME 3, PME-PME 32. Chelicerae: 10+10 promarginal teeth and 8+6 denticles, rastellum absent. Labium: length 0.57, width 1.10. Maxillae: 23+22 cuspules, serrula absent. Sternum: length 3.25, width 2.87. Palp: Fm pd1, d3b; Pt p1; Tb v7; Tr v3(8). Leg I: Fm d3b, pd1, Pt 0; Tb p2, v2.2.3; Mt v1.2.2(2.2.3), Leg II: Fm d3b, pd1; Pt p1; Tb p2, v2.2.3; Mt v2.2.3. Leg III: Fm d3b, pd, rd2; Pt p1, r1; Tb d1(0), p2, r2, v2.2.3; Mt d2, p4, r4, v2.2.2.3. Leg IV: Fm d3b, pd1, rd1; Pt p1, r1; Tb d1, p2, r2, v2.2.3; Mt d2, p4, r4, v2.2.2.3. Tarsi I-IV aspinose. Leg measurements as shown in Table 1 (right). Scopula: distal on metatarsi I-II, entire on palpal tarsus and tarsi I-II, absent on tarsi III-IV. Paired claws: outer margin with 5-6 teeth, 5-7 teeth on inner margin. Trichobothria: 2 rows of 5-7 on tibiae, 7-11 on metatarsi, 8-10 on tarsi. PMS: length 0.73, diameter 0.25. PLS: maximal diameter 0.70; length of basal, medial and apical segments 1.15, 0.85, 1.10; total length 3.10; apical segment digitiform.

Etymology. The specific epithet is given after Mr. S. N. von Wick, the collector of the type seria.

Table 1. Leg measurements of *R. vonwicksi* sp. n

Male						Female					
	Palp	I	II	III	IV		Palp	I	II	III	IV
Femur	2.75	4.47	4.10	3.65	4.57	Femur	3.40	4.47	4.05	3.73	4.70
Patella	1.83	2.85	2.43	2.10	2.17	Patella	2.23	3.07	2.85	2.15	2.63
Tibia	2.53	3.93	3.30	2.25	3.97	Tibia	2.65	3.05	3.13	2.63	3.87
Metatarsus		3.55	3.25	3.77	4.85	Metatarsus		2.65	2.70	3.50	4.95
Tarsus	0.97	2.20	2.13	2.20	2.43	Tarsus	2.17	2.03	2.07	2.07	2.27
Total	8.08	17.00	15.21	13.97	17.99	Total	10.45	15.27	14.80	14.08	18.42



Figs. 1-3. *Raveniola vonwicksi* sp.n.: 1 - distal segments of male palp, ventral view; 2 - ditto, retrolateral view; 3 - female spermathecae. Scale bar 0.5 mm.

***Raveniola concolor* Zonstein, sp. n. (Figs. 4-6)**

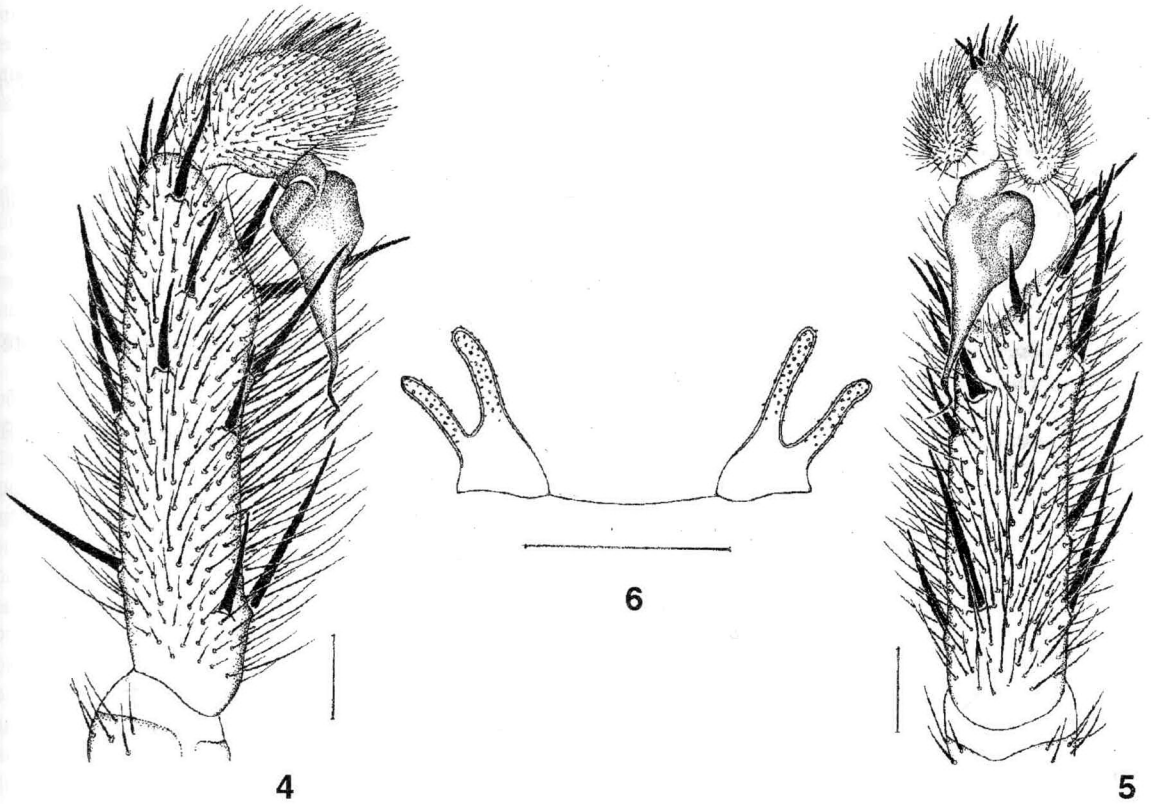
Brachythele virgata: Caporiacco, 1934: 113, 160 (not *Brachythele virgata* Simon, 1891).

Types: ♂ holotype and ♀ allotype labeled: the first - "A.R. 17", "*Brachythele virgata* E. S. Shimsha Karboo m. 2800, 15 Apr.", the second - "A.R. 19", "*Brachythele virgata* E. S.", "Apis, luoghi gasso si, m. 2900, 16. IV", [North-Western Himalaya Mts., approx. 30°30'N 70°30'E]; dep. MCSN.

Diagnosis: By possessing the bayonet-shaped embolus the new species appears to be more closely related to *R. xizangensis* (Hu & Li, 1987) from Tibet; it differs from the mentioned species by absence of small subdistal embolic keel (sf.: Song, Zhu & Chen, 1999, Figs. 17 I-J); females can be distinguished from other known Central Asian congeners by relatively wide U-shaped female spermathecae (which are narrow and Y- or F-shaped in those species).

Male (holotype). Total body length ca. 15.10. Carapace: length 7.23, width 6.27. Color in alcohol: carapace, chelicerae, palps and legs uniformly dark brown-rufous; sternum, labium, maxillae have a

similar but slightly less dark coloration; abdomen dark brown without certain dorsal pattern. Carapace covered with thin dense discolored hairs. Ratio of AME, ALE, PLE, PME: 12, 22, 17, 12. Interspaces: AME-AME 12, ALE-AME 6, ALE-PLE 4, PLE-PME 3, PME-PME 41. Chelicerae with 10+10 promarginal teeth and 4+4 denticles, rastellum absent. Intercheliceral tumescence not evident. Labium: length 0.55, width 1.00. Maxillae: 29 + 27 cuspules, serrula absent. Sternum: length 3.57, width 2.97. Palp: Fm d1.1.1, pd1, rd1.1; Pt pd1; Tbd 1.1.1.2, p2.2.2, r(1).1.1, v1.1.1.2; Tr d6. Leg I: Fm d1, pd1.1.1, rd1.1; Pt p1; Tb p1.1, r2, v1.1.M.M; Mt 0. Leg II: Fm d1.1, pd1.1.1, rd1(0); Pt p1.1; Tb p1.1.1, v2.1.2.2; Mt v1.2; Tr 0; Leg III: Fm d1.1.1, pd1.1, rd1.1; Pt p1.1, r1; Tb d1.1.1, pd1.1.1, p1.1.1, r1.1.1, v3.1.1.2; Mt d1.1.1.1, pd1.1.1.1, p1.1.1.1, r 1.1, v2.2.2.3. Leg IV: Fm d1.1.1.1, pd1.1.1, pr1.1.1; Pt p1.2, r1; Tb d1.1.1.1, pd1.1.1, p3.1.1, dr1, r 1.1.1, v 2.2.1.3; Mt d1, pd1.1.1.1.1, p1.1.1.1, r1.1.1, rd1.1.1, v2.2.2.3. Tarsi I-IV aspinose. Leg measurements as shown in Table 2 (left). Scopula: distal on metatarsi I-II; entire on tarsi I-II; divided on tarsi III; sparse, widely divided on tarsi IV. Paired claws: outer and inner margins with 13 teeth. Trichobothria: 2 rows of 9-10 on tibiae, 13-16 on metatarsi, 13-16 on tarsi. PMS: length 0.15, diameter 0.07. PLS: maximal diameter 0.67; length of basal, medial and apical segments 0.55, 0.53, 0.53; total length 1.61; apical segment short-digitiform.



Figs. 4-6. *Raveniola concolor* sp.n.: 4 - distal segments of male palp, retrolateral view; 5 - ditto, ventral view; 6 - female spermathecae. Scale bar 0.5 mm.

Female (allotype). Total body length ca. 21.00. Carapace: length 8.07, width 6.80. Color in alcohol: similar to that of male save chelicerae brownish-black. Carapace covered with thin discolored hairs. Ratio of AME, ALE, PLE, PME: 14, 31, 21, 19. Interspaces: AME-AME 14, ALE-AME 7, ALE-PLE 6, PLE-PME 3, PME-PME 40. Chelicerae with 10+11 promarginal teeth and 4+4 denticles, rastellum absent. Labium: length 0.83, width 1.70. Maxillae with 38 + 41 cuspules. Sternum: length 4.35, width 3.37. Palp: Fm pd1, d3b; Pt 0; Tb v2.2.3; Tr v3(8). Leg I: Fm d4b, pd1b, Pt 0; Tb v1.1.3; Mt v1.2.2; Tr 0; Leg II: Fm d4b, pd1b; Pt 0; Tb p2, v1.1.3; Mt v2.2.2. Leg III: Fm d3b.1, pd1, rd1.1; Pt p1.1, r1; Tb d1, p2, r2, v 2.2.3; Mt p6, r3, v2.2.3. Leg IV: Fm d4b, rd1; Pt p1, r1; Tb d1, p2, r2, v2.2.3; Mt p5, r3, v2.2.3. Leg tarsi aspinose. Leg measurements as shown in Table 2 (right). Scopula: distal on

metatarsi I–II; entire on palpal tarsus and tarsi I–II; widely divided by setae on tarsi III–IV. Trichobothria: 2 rows of 9–10 on tibiae; 13–17 on metatarsi; 14–17 on tarsi. Paired claws: inner margin with 12–14 teeth, outer margin with 10–11 teeth. Palpal claw with 5 teeth. PMS: length 0.25. PLS: length of basal, medial and apical segments 0.65, 0.60, 0.53; total length 1.78; apical segment short-digitiform.

Table 2. Leg measurements of *R. concolor* sp. n.

Male	Palp	I	II	III	IV	Female	Palp	I	II	III	IV
Femur	3.25	6.53	6.27	5.85	6.27	Femur	3.80	6.50	6.20	5.95	6.97
Patella	2.07	3.57	3.30	2.57	3.17	Patella	2.73	4.23	3.95	3.13	3.70
Tibia	3.05	5.25	5.35	3.93	5.90	Tibia	3.40	5.00	5.00	3.85	5.17
Metatarsus		6.13	6.03	5.93	7.77	Metatarsus		4.47	4.53	5.33	7.15
Tarsus	1.07	2.95	2.93	2.85	3.00	Tarsus	3.00	2.77	2.90	2.97	3.17
Total	9.44	24.44	23.98	21.13	26.61	Total	12.93	22.97	22.58	21.23	26.16

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Резюме

Зонштейн С. Л. Два новых вида мигаломорфных пауков рода *Raveniola* Zonstein, 1987 (Araneae, Nemesiidae) из Юго-Западной Азии.

Описание *R. vonwicki* sp.n. (Сев.-Зап. Иран: хр. Богровдаг) и *R. concolor* sp.n. (Сев.-Зап. Гималаи).