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The spider genera Savignya Blackwall, Diplocephalus Bertkau and Archaraeoncus Tanasevitch (Aranei, Linyphiidae) in the fauna of Siberia and the Soviet Far East

By

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Abstract: The Siberio-Far Eastern fauna of Archaraeoncus, Diplocephalus and Savignya (1, 9 and 9 species, respectively) has been revised. A. sibiricus sp.n., D. marusiki sp.n., D. mirabilis sp.n., D. montanus sp.n., D. sphagnicolus sp.n., D. uliginosum sp.n., S. zero sp.n. and S. borea sp.n. (all - Eastern Siberia), S. basarukini sp.n., S. saitoi sp.n. and S. ussurica sp.n. (all - Far East) have been described. D. subrostratus (O. P.-Cambr., 1873) has been redescribed, the first description of the female of S. producta Holm, 1977 has been given. New synonyms: D. subrostratus (O. P.-Cambr., 1873) = D. cuneatus (Em., 1909), syn.n. = D. maculifrons Kulcz., 1926, syn.n. The rank of Hemistajus Schenk., 1934 as an independent subgenus of Diplocephalus has been treated as overrated, instead the barbatus-group has been proposed. Savignya (s.str.) has been redefined based on the genital conformation of both sexes. The synonymy of Savignya = Delorrhipis Sim., 1884 has been rejected; S. harmsi Wund., 1980, S. superstes Thal., 1984 and S. galeriformis Tan., 1987 have been shown to represent genera other than Savignya. A key has been elaborated to the species of Savignya. Comments have been given on the zoogeography of Savignya and Siberian Diplocephalus.

The spider genera Savignya Blackwall, 1833 and Diplocephalus Bertkau, 1883 are treated as closely related in all the modern classifications of Linyphiidae (s. MERRETT 1963; HOLM 1977; MILLIDGE 1977). Both are placed within a highly homogenous group of genera, which MILLIDGE (1977) called Savignya-group, also encompassing Erigonella Dahl, 1901, Araeoncus Simon, 1884, Dicymbium Menge, 1857 and Glyphesis Simon, 1926. All of them are united not only by the same general conformation of the male palp, but also by the same leg chaetotaxy. This similarity is so pronounced that sometimes all these genera are believed to represent in fact a single genus, Savignya by priority (cf. MILLIDGE 1977).

However, we regard the phyletic relationships within this genus-group in a different way than MILLIDGE (1977). The genus Savignya s.str. may be characterized as follows: (1) the embolic division T-shaped, with the embolus slightly curved and directed backwards, and a pair of frontal angular apophyses; (2) the suprategulum phylloidally broadened and split longitudinally into a curved spine and a parallel rounded lobe; (3) the palpal tibia in the form of a broadly rounded lobe provided with a frontal, terminally unciform apophysis; (4) the vulva with a broad, flat median plate, bearing anteriorly a more or less distinct emargination and covering about a half of the oval receptacula.

If the type of conformation of the male palp is to serve the basis of a classification, Savignya s.str. must, in my opinion, be considered as the sister-group of the remaining genera of Savignya-group. And if uniting all of them into a single genus Savignya s.lato may be accepted (with some reservations), a singled congregation of, e.g., Savignya and Delor-

rhipis Simon, 1884, as done by WUNDERLICH (1980) is rather erroneous. Therefore, I retain for both Savignya and Diplocephalus traditional limits, according to the above diagnosis of the former genus.

It has recently been shown that one of the species of Araeoncus, namely the Balkan-Crimeo-Caucasian A. prospiciens (Thorell, 1875), is markedly disjunct from the other congeners by both genital structure and leg chaetotaxy. Due to this, a new monotypic genus, Archaraeoncus Tanasevitch, 1987, has been erected for it. This genus seems to be only superficially close to Araeoncus, chiefly due to the shape of the male carapace and palpal tibia (s. MILLIDGE 1977; TANASEVITCH 1987), and does not belong to the above genus-group. In my opinion, Archaraeoncus should rather be placed within the Leptorhoptrum/Lophomma group of MILLIDGE (1977).

In Siberia both Diplocephalus and Savignya have been studied rather poorly. Only 9 species have hitherto been known from this vast territory: D. barbatus (L. Koch, 1879), D. cristatus angusticeps Holm, 1973, D. maculifrons Kulczynski, 1926, D. picinus (Blackwall, 1841), D. subrostratus (O. Pickard-Cambridge, 1873), S. birostrum (Chamberlin et Ivie, 1947), S. frontata (Blackwall, 1833), S. nenilini Marusik, 1988, S. producta Holm, 1977, all recorded from a few or even a single locality (cf. ESKOV 1985, 1986; HOLM 1970, 1973; KULCZYŃSKI 1908, 1926; DAHL 1928; MARUSIK 1988; PICKARD-CAMBRIDGE 1873; TANASEVITCH 1985). In the course of the author's studies on the linyphiid fauna of Siberia and the Far East, a number of undescribed Diplocephalus and Savignya have emerged, as well as a new congener of Archaraeoncus prospiciens. The present paper revises the Siberian and Far Eastern fauna of these genera, with certain remarks on their taxonomy and zoogeography.

Besides the author's collectings, abbreviated in the text as (KE), this paper is based on the materials taken by A.B. BABENKO (ABB), V.I. BULAVINTSEV (VB), Y.I. CHERNOV (YC), S.I. GOLOVATCH (SG), G.F. KURTCHEVA (GK), A.P. RASNITSYN (APR), A.B. RYVKIN (ABR), I.D. SUKATCHEVA (IS); A.V. TANASEVITCH (AVT), A.L. TIKHOMIROVA (ALT), N.V. VEKHOV (NV), E.M. VESELOVA (EV), V.V. ZHERIKHIN (VZ), (all - Moscow), A.M. BASARUKIN (AMB) (Yuzhno-Sakhalinsk), S.P. BUKHALO (SB), B.P. CHEVRIZOV (BC), N.E. DOKUTCHAYEV (ND), I.B. GRISHKAN (IG), Y.M. MARUSIK (YM), A.M. MESTCHERYAKOV (AM), A.S. RYABUKHIN (ASR) (all - Magadan), O.V. KHRULEVA (OK) (Vrangel Island State Reserve), E.V. MIKHALEVA (EM) (Vladivostok), N.S. PORYADINA (NP) (Tyumen) and N.S. RYABININ (NR) (Khabarovsk). I am most grateful to all the above-mentioned persons whose materials serve the base of the present contribution. Before going further, I wish to particularly acknowledge the help of S.I. GOLOVATCH (Moscow), who kindly checked the English of the final manuscript, and H. SAITO (Tochigi, Japan), who kindly sent to me copies of the drawings of some undescribed linyphiids from Hokkaido.

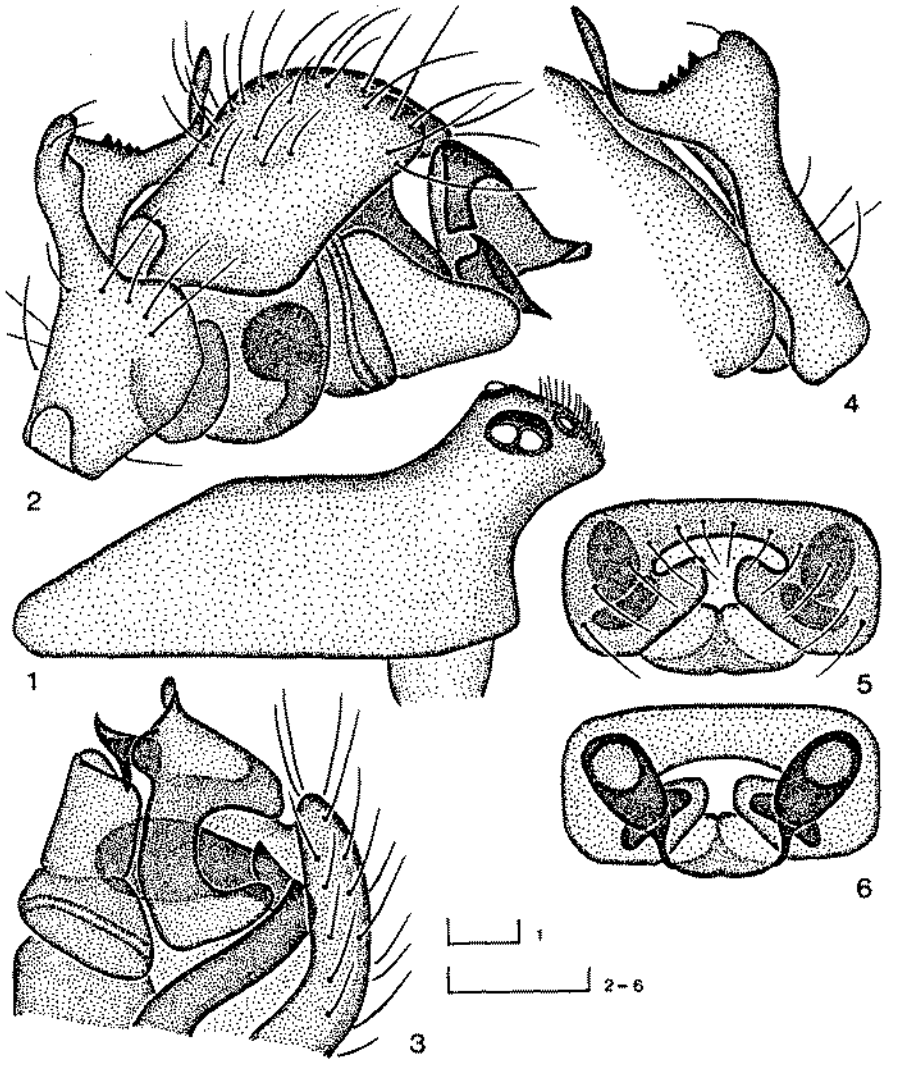
The materials treated herein have mainly become part of the collection of the Zoological Museum of the Moscow State University, Moscow; the fund materials of this museum abbreviated in the text as ZMMU. Some duplicates have been donated to the Hungarian Natural History Museum, Budapest (HNHM) and the Senckenberg Museum, Frankfurt a.M. (SMF). All measurements are given in mm.

DESCRIPTIONS OF THE NEW SPECIES AND FAUNISTICS

Archaraeoncus sibiricus sp. n. (Figs 1-6)

Holotype, ♂ - Taimyr Autonomous Region, Putorana Plateau, Ayan Lake, mouth of Kapchug River, vegetation of grasses and Dryas punctata in the temporary rocky bed of spring, 6.VI.1983 (leg. KE). - Paratypes. 1 ♀ - together with holotype; 3 ♀ - same locality, shingle bank of stream, 25.V.1983 (leg. KE); 1 ♂, 1 ♀ - Ayan Lake, source of Ayan River, herbaceous vegetation in rocky temporary bed of spring, 14.VII.1983 (leg. KE); 2 ♂, 3 ♀ - Magadan Area, upper Kolyma River, Sibit-Tyellakh, Jack London Lake, shingle bank of spring, 13.VII.1986 (leg. YM); 1 ♂ - environs of Magadan, Snezhnaya Dolina, small shingle island of Dukcha River, 25.VI.1985 (leg. YM); 1 ♂, 1 ♀ (HNHM), 1 ♂, 1 ♀ - Taigonos Peninsula, Topolevka River, 13.-14.VIII. 1985 (AM).

Description. Total length of male/female 1.95-2.05/2.03-2.13. Carapace yellowish-brown, with a grey medial spot, its length/width 0.85-0.93/0.58-0.63 in male, 0.78-0.85/



Figs 1-6. Archaraeoncus sibiricus sp.n., ♂♀ paratypes: 1= male carapace; 2, 3= male palp (ectal et mesal view, respectively); 4= male palpal tibia (mesal view); 5= epigyne; 6= vulva. Scale= 0.1 mm

0.58-0.60 in female; male carapace as in Fig. 1. Chelicerae with 4 promarginal teeth. Legs brownish-yellow, length of joints of legs I/IV 0.53/0.80+0.20/0.20+0.50/0.65+0.43/0.55+ +0.35/0.35 in male, 0.58/0.68+0.20/0.20+0.48/0.60+0.43/0.53+0.35/0.35 in female; tibial spines 1111 (1d of joint) in female, 0000 in male; Tm I - 0.63, Tm IV absent. Tibia of male palp provided with 2 trichobothria. Abdomen dark grey. Genitalia of both male and female as in Figs 2-6.

Comparison. The new species differs from the only hitherto known congener, A. prospiciens (Thorell, 1875), by the considerably better curved embolus, lack of projecting suprategular apophysis, presence of 4 small (not a single larger) teeth on the dorsal of edge of the male palp, larger fungiform epigynal aperture, as well as by a different position of Tm I, being over 0.5 (s. TANASEVITCH 1987).

Distribution. Siberia: Putorana Plateau, upper Kolyma, northern Cisokhotia (Magadan and Taigonos Peninsula).

Diplocephalus barbatus (L. Koch, 1879) (Figs 7-11)

Diplocephalus barbatus: Kulczynski 1908, Mém. Acad. Sci. St.-Pétersbourg, (8) 18 (7): 11, pl. 1, figs. 14-17 (♂, ♀).
Diplocephalus barbatus: Holm 1967, Medd. Grønland, 184 (1): 28, figs. 32-36 (♂, ♀).

Material: 1 ♂ - Nenets Autonomous Region, Vaigach Island, Bolvanskiy Nos Cape, 4. VII. 1984 (leg. VB); 1 ♂, 2 ♀ (HNHM) - Vaigach Island, Dolgaya Guba Bay, Talata River, 15. VII. 1987 (leg. VB); 1 ♂ - Yugor Peninsula, Beliy Nos Cape, 17. VI. 1983 (leg. VB); 1 ♂, 3 ♀ - Taimyr Autonomous Region, Dikson, herbaceous vegetation on baidjarakh hills, 20. VII. 1979 (ALT); 1 ♀ - 80 km S of Dikson, Syradasai River, in stomach of Coregonus sp., 9. VI. 1982 (leg. YC); 1 ♂ (SMF) - NW Taimyr, western point of Byrranga Mts., Kosoturku Lake, rocks, under stones, 8. VIII. 1986 (leg. ABB); 1 ♀ - E Taimyr, Maria Pronchistcheva Bay, slope with vegetation of grasses, sedges and dwarfish willows, 20-25. VII. 1973 (leg. YC); 1 ♀ (SMF) - Yakut Autonomous Republic, Tiksi, 15. VIII. 1985 (VB et NV); 1 ♂, 1 ♀ - Chukotka Autonomous Region, Kolyuchinskaya Guba Bay, 18. IX.-1. X. 1913 (leg. L. STAROKADOMSKIY, expedition of the boat "Taimyr", ZMMU); 6 ♀ - Vrangel Island, Neizvestnaya River, sparse herbaceous vegetation and hillocks of Carex and Dryas on slope of river valley, 16.-23. VIII. 1983 (leg. OK).

Distribution. The entire Arctic coast of Siberia from Novaya Zemlya to Vrangel Island (DAHL 1928; KULCZYNSKI 1908; HOLM 1970, 1973; ESKOV 1985); outside the USSR - Spitsbergen, northern Greenland and Canadian Archipelago (LEECH 1966). This species seems to be restricted to the northernmost parts of the tundra zone, not extending southwards beyond the southern border of the subzone of arctic tundra.

Diplocephalus connatus Bertkau, 1889

Diplocephalus connatus: Wiehle 1960, Tierwelt Deutschlands, 47: 496, figs. 916-925 (♂, ♀).

Material. 1 ♂ - Evenk Autonomous Region, Taimura River, mouth of Chambe River, floodland meadow, 24. VIII. 1982 (leg. KE).

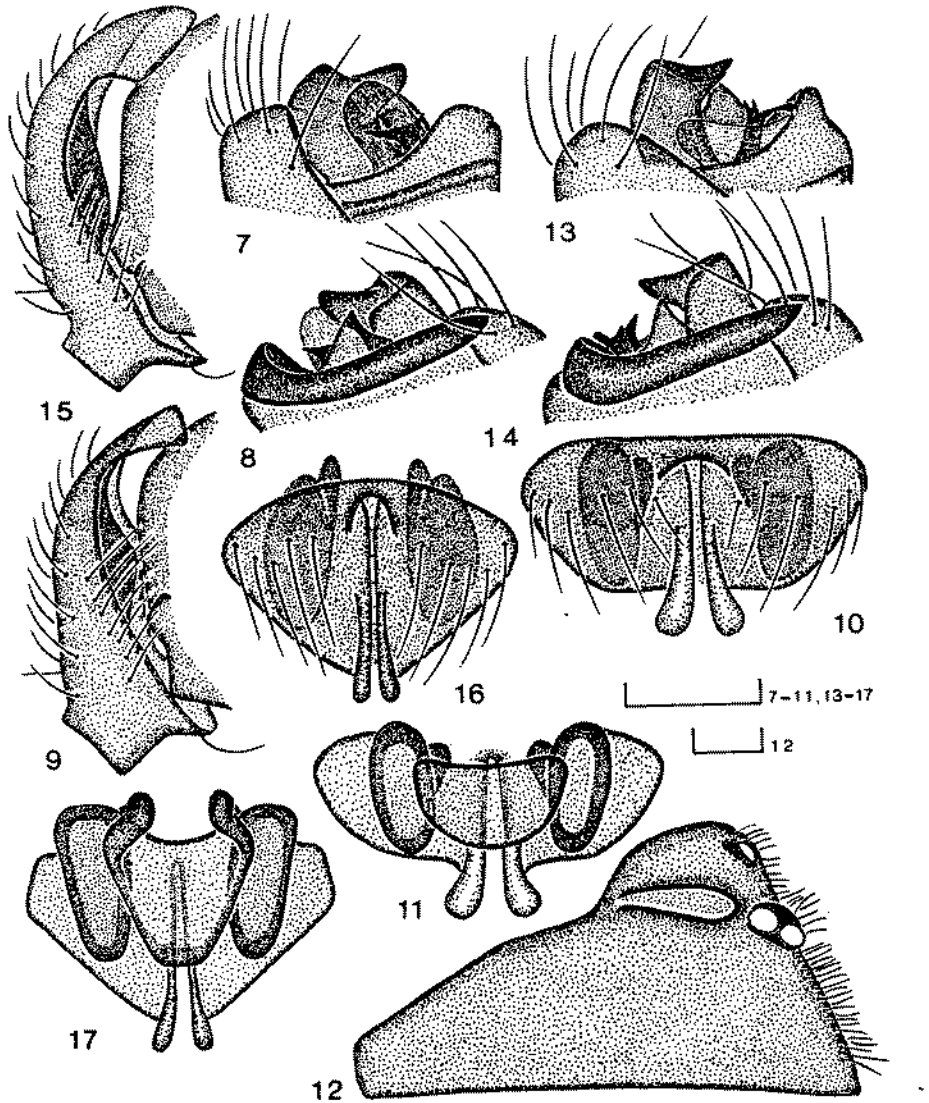
Distribution. Europe (WIEHLE 1960); in the Asiatic part of the USSR - Eastern Kazakhstan (A. V. TANASEVITCH, pers. comm.) and Middle-Siberian Tableland.

Diplocephalus cristatus angusticeps Holm, 1973

Diplocephalus cristatus angusticeps: Holm 1973, Zool. Scripta, 2 (3): 81, figs. 23, 24, 27 (♂, ♀).

Material: 3 ♂, 13 ♀ - Krasnoyarsk Area, middle Yenisey River, Mirnoye (62°20'N), sandy bank of river, 9.-11. VI. 1978 (leg. KE); 2 ♂, 10 ♀ - same locality, shingle bank of Varlamovka River, 6.-28. VIII. 1979 (leg. KE); 2 ♂, 2 ♀ (HNHM), 1 ♂, 1 ♀ (SMF), 3 ♂, 2 ♀ - Evenk Autonomous Region, Taimura River, between mouths of Neptene and Chambe Rivers, shingle bank of river, 9-13. VIII. 1982 (leg. KE).

Distribution. Siberia: lower (HOLM 1973) and middle Yenisey, Middle-Siberian Tableland.



Figs 7-17. Diplocephalus barbatus (L. Koch), ♂ ♀ from Dikson (Taimyr) (Figs 7-11) and Diplocephalus marusiki sp. n., ♂ ♀ paratypes (Figs 12-17): 7, 13 = tip of male palp (ectal view); 8, 14 = tip of male palp (mesal view); 9, 15 = male palpal tibia (ectal view); 10, 16 = epigyne; 11, 17 = vulva; 12 = male carapace. Scale = 0.1 mm

Diplocephalus marusiki sp. n. (Figs 12-17)

Holotype, ♀ - Magadan Area, upper Kolyma River, Sibit-Tyellakh, tundra-like heath in spring valley, 31. VIII. 1984 (leg. YM). - Paratypes: 2 ♂, 1 ♀ - together with holotype; 1 ♂, 2 ♀ - same biotope, 14. VIII. 1984 (leg. IG); 5 ♂, 5 ♀ (HNHM), 2 ♂, 2 ♀ (SMF), 26 ♂, 34 ♀ - same locality, various types of wet heathes in the taiga belt of Bolshoy Annachag Mt. Ridge, 1.-28. VIII. 1985 (leg. YM).

Description: Total length of male/female 1.65-1.80/1.65-1.88. Carapace greyish-brown, its length/width 0.73-0.75/0.63-0.65 in male, 0.70-0.73/0.53-0.55 in female; male carapace as in Fig. 12. Chelicerae with 4 promarginal teeth. Legs greyish-brown, length of joints of legs I/IV 0.55/0.63+0.20/0.20+0.40/0.50+0.35/0.45+0.33/0.33 in male, 0.53/0.55+0.20/0.20+0.38/0.48+0.33/0.40+0.33/0.33 in female; tibial spines 2211, their length 1 d of joint in female, 3/4 d in male; Tm I - 0.50, Tm IV absent. Abdomen dark grey, almost black. Genitalia of both male and female as in Figs 13-17.

Comparison. The new species is remarkably closely related to D. barbatus (L. Koch, 1879) (cp. HOLM 1967 and Figs. 7-11). However, in the male of D. marusiki sp. n. the tip of the palpal tibia is retorted roundly (not truncate), both embolus and frontal apophysis of the embolic division end blunter. The female of D. marusiki sp. n. differs even more sharply in the lateral plates of the epigyne being oblong-triangular, the drop-shaped apophysis of their inner angles much narrower and shorter, receptacles B elevated above fore margin of receptacles A.

Distribution. Siberia: southern point of Cerskogo Mt. Ridge.

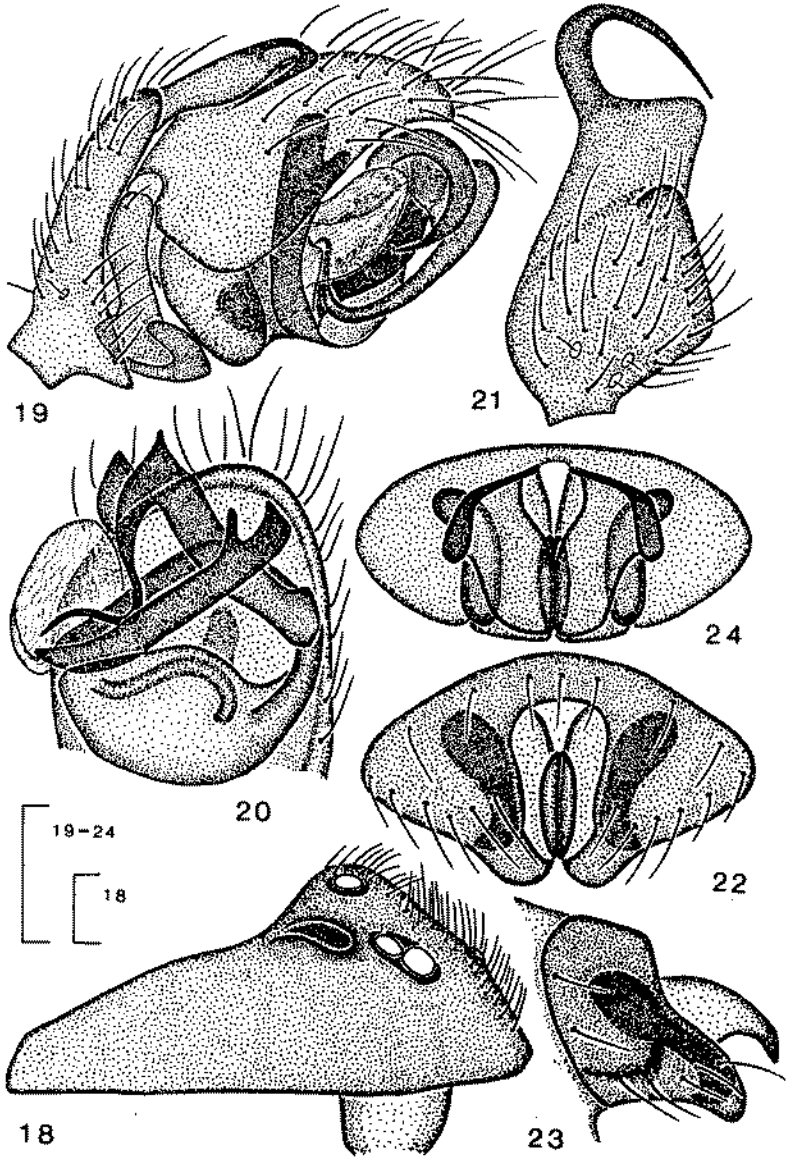
Etymology. The new species I am glad to name after my friend and colleague, Dr. Yuriy M. MARUSIK (Magadan).

Diplocephalus mirabilis sp. n. (Figs 18-24)

Holotype, ♂ - Magadan Area, Kolyma River 10 km upstream of Vetrenyi, bushes of Salix and Betula at the edge of Carex swamp, 5. VIII. 1984 (leg. KE). - Paratypes. 2 ♀ - together with holotype; 46 ♂, 60 ♀ - Kolyma River near Vetrenyi, Khailik Spring, Salix bushes on sandy bank of spring, 16-18. IX. 1987 (leg. YM); 1 ♀ - Detrin River (right tributary of Kolyma River) ca. 56 km upstream of mouth, Vakhanka Spring, valley forest of Populus and Chosenia, 14. VIII. 1984 (leg. KE); 2 ♀ - same locality, meadow-like vegetation on the slope of a hill, 30. VIII. 1986 (leg. YM); 1 ♂, 6 ♀ - upper Kolyma River, Sibit-Tyellakh, taiga belt of Bolshoy Annachag Mt. Ridge, Salix bushes at Carex swamp, 23. VIII. 1984 (leg. KE); 2 ♀ - same locality, dry forest of Betula at southern slope of hill, 10. IX. 1984 (leg. KE); 1 ♂ - same locality, wet Betula forest with grasses, 3. IX. 1984 (leg. KE); 1 ♂, 1 ♀ (SMF) - same locality, Alnus fruticosa bushes with Festuca, 10. IX. 1987 (leg. YM); 3 ♂, 7 ♀ - same locality, alpine belt of Bolshoy Annachag Mt. Ridge, 1300 m, lichen mountain tundra, 7. VIII. 1984 (leg. KE); 1 ♂, 5 ♀ - same locality, alpine belt, 1250 m, Carex-Sphagnum bog, 22. VIII. 1984 (leg. KE); 3 ♂, 4 ♀ - same biotope, 7. VII. -2. VIII. 1987 (leg. YM); 1 ♂, 3 ♀ - same locality, alpine belt, 1250 m, dwarfish bushes of Alnus fruticosa, 8. VIII. 1984 (leg. KE); 1 ♂, 3 ♀ - same locality, alpine belt, 1300-1700 m, meadow-like vegetation on southern slopes, 13. VII. 1983 and 8. IX. 1987 (leg. YM); 1 ♂, 1 ♀ - environs of Magadan, Hertner Bay, Nyukiya, 3. V. 1986 (leg. YM); 4 ♂, 4 ♀ (HNHM) - upper Kolyma River, Sibit-Tyellakh, VI-VIII. 1985 (leg. YM); 1 ♂ - Evenk Autonomous Region, Taimura River, mouth of Chambe River, floodland Salix bushes, 16. VIII. 1982 (leg. KE).

Description. Total length of male/female 1.68-1.80/1.63-1.75. Carapace brownish-yellow, its length/width 0.75-0.80/0.58-0.60 in male, 0.68-0.73/0.50-0.53 in female; male carapace as in Fig. 18. Chelicerae with 3 promarginal teeth. Legs brownish-yellow; length of joints of legs I/IV 0.50/0.58+0.18/0.18+0.43/0.50+0.35/0.40+0.33/0.33 in male, 0.50/0.55+0.18/0.18+0.40/0.48+0.33/0.38+0.30/0.30 in female; tibial spines 2211, 1 d of joint in female, 3/5 d of joint in male; Tm I - 0.48, Tm IV absent. Abdomen grey. Genitalia of both male and female as in Figs 19-24.

Comparison. By the shape of male palp the new species displays certain affinities with D. dentatus Tullgren, 1955, but differs by the cephalic elevation of the male carapace strongly decleaving backwards and much elongated palpal tibia (cp. WIEHLE 1960). The epigyne of



Figs 18-24. Diplocephalus mirabilis sp. n., ♂♀ paratypes: 18= male carapace; 19, 20= male palp (ectal et ventral view, respectively); 21= male palpal tibia (dorsal view); 22, 23=epigyne (frontal et lateral view, respectively); 24= vulva. Scale = 0.1 mm

D. mirabilis sp.n. seems to be unique among the congeners by the presence of unciform apophyses holding perpendicular to the surface of the epigynal lateral plates.

Distribution. Siberia: Middle-Siberian Tableland, upper Kolyma River and northern coast of Okhotsk Sea.

Diplocephalus montanus sp.n. (Figs 25-31)

Holotype, ♂ - Magadan Area, upper Kolyma River, Sibit-Tyellakh, alpine belt of Bolshoy Annachag Mt. Ridge, dwarfish bushes of Salix with Hylacomium along spring, 6.IX. 1986 (leg. YM). - Paratypes. 1 ♂, 1 ♀ (HNHM), 1 ♂, 1 ♀ (SMF), 3 ♂, 6 ♀ - together with holotype; 2 ♂, 1 ♀ - same locality, taiga belt, Alnus fruticosa bushes with Sphagnum and Carex in excavations of slope, 30.VII.-5.IX.1986 (leg. YM); 1 ♂, 1 ♀ - Khabarovsk Province, Dzhugdzhur Mt. Ridge, Amka River (left tributary of Ulya River), mouth of Khetana Stream, Sphagnum hillocks in valley forest of Larix dahurica, 19.VIII.1985 (leg. VZ); 2 ♀ - Taimyr Autonomous Region, Putorana Plateau, Ayan Lake, source of Ayan River, Larix dahurica forest with Hylacomium in valley, 5.VII.1983 (leg. KE).

Description: Total length of male/female 1.95-2.10/2.05-2.25. Carapace dark brown; its length/width 0.80-0.88/0.68-0.83 in male, 0.85-0.88/0.70-0.73 in female; male carapace as in Fig. 25. Chelicerae with 4 promarginal teeth. Legs brownish-yellow; length of joints of legs I/IV 0.60/0.68+0.20/0.20+0.50/0.58+0.43/.050+0.35/0.35 in male, 0.60/0.65+0.20/0.20+0.48/0.55+0.43/0.48+0.35/0.35 in female; tibial spines 2211, 1 d of joint in both male and female; Tm I - 0.34, Tm IV absent. Abdomen dark grey. Genitalia of both male and female as in Figs 26-31.

Comparison: The new species is particularly closely related to D. rostratus Schenkel, 1934, but differs from it by the better rounded cephalic elevation of the male carapace, retorted apex of the palpal tibia, longer and more pointed suprategular apophysis, more distinct rims along inner edge of the epigynal lateral plates (cp. THALER 1970).

Distribution: Mountain regions of Eastern Siberia; Putorana Plateau, Cherskogo and Dzhugdzhur Mt. Ridges.

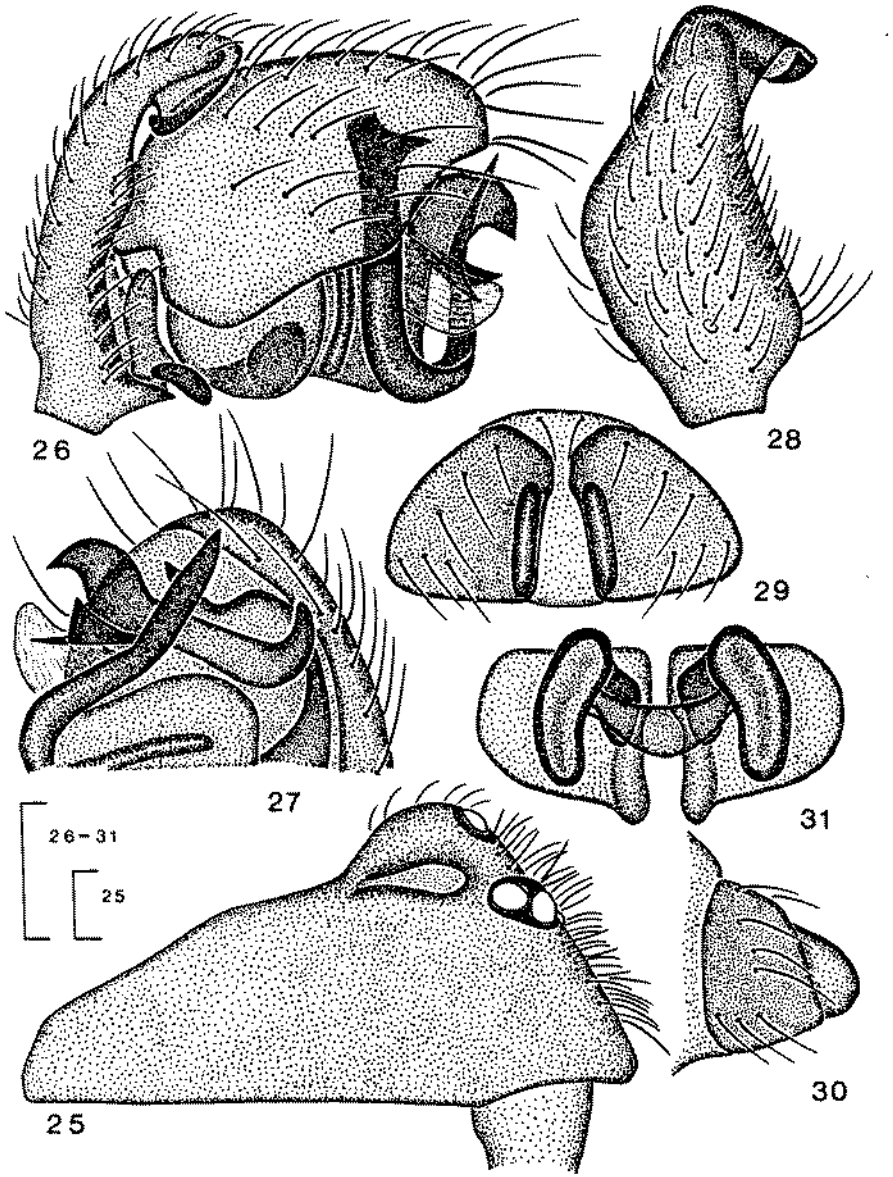
Diplocephalus sphagnicolus sp.n. (Figs 32-37)

Holotype: ♂ - Evenk Autonomous Region, Taimura River, mouth of Chambe River, boggy forest of depressed Larix dahurica with Betula nana, 19.-20.VIII.1982 (leg. KE). - Paratypes. 2 ♀ - Taimyr Autonomous Region, Putorana Plateau, Ayan Lake, mouth of Amnundakta River, sparse forest of Larix dahurica with Betula nana, 12.VIII.1983 (leg. KE); 1 ♀ (HNHM) - Ayan Lake, mouth of Gulyami River, lichen sparse forest of Larix dahurica with Alnus fruticosa, 7.VIII.1983 (leg. KE); 1 ♀ (SMF) - Ayan Lake, mouth of Kapchug River, tundra-like moss heath with Vaccinium uliginosum, 24.V.1983 (leg. KE); 1 ♂ - Magadan Area, upper Kolyma River, Sibit-Tyellakh, Sphagnum bog in depression of moraine, 10.IX. 1983 (leg. SB); 1 ♀ - same locality, boggy sparse forest of Larix dahurica, 8.IX.1987 (leg. YM); 2 ♀ - environs of Magadan, Hertner Bay, Nyuklya, Sphagnum and Polytrichum hillocks on maritime terrace, 3.V.1986 (leg. YM).

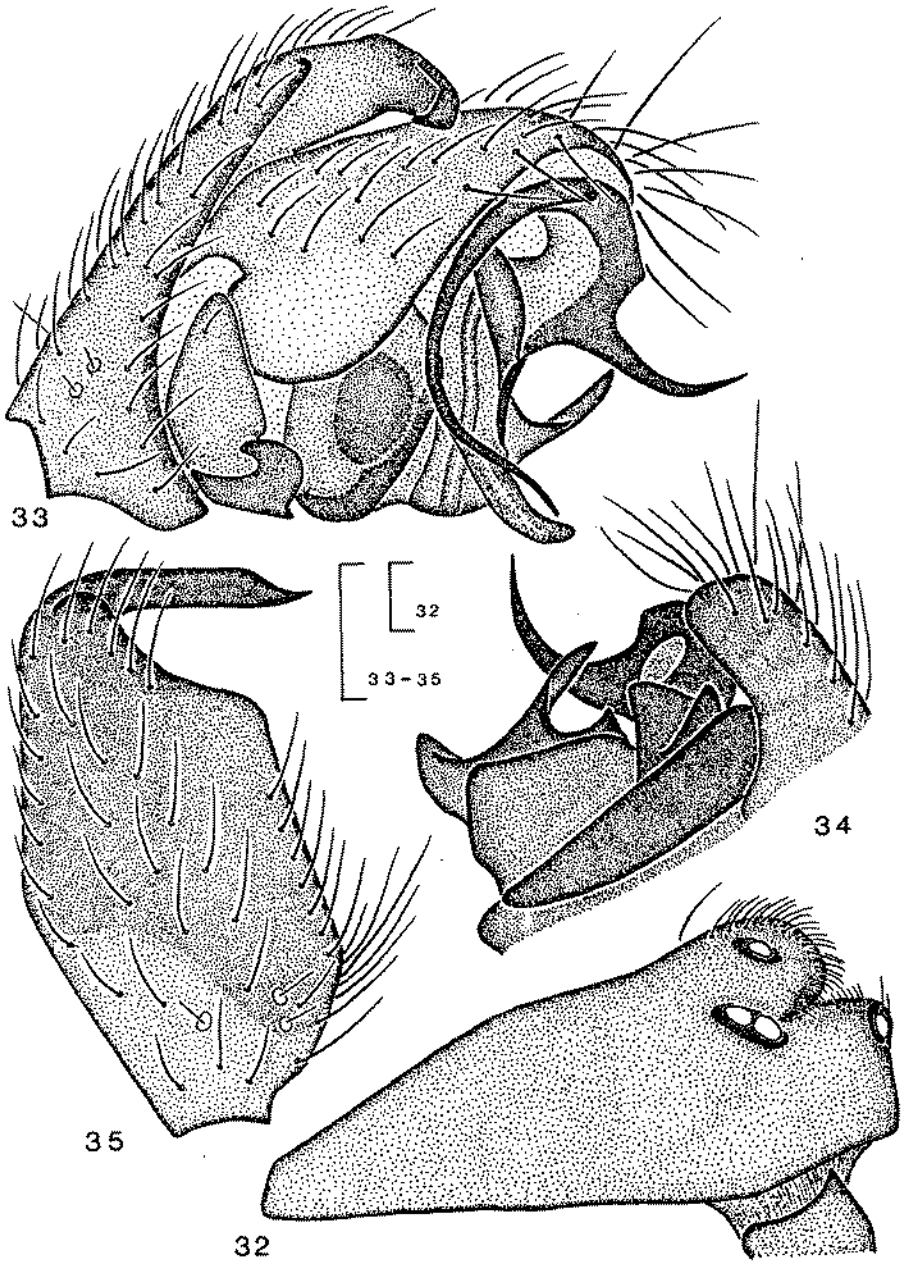
Description. Total length of male/female 2.15-2.25/2.18-2.25. Carapace light brown, its length/width 0.88-0.90/0.70-0.73 in male, 0.88-0.90/0.70-0.75 in female; male carapace as in Fig. 32. Chelicerae with 4 promarginal teeth. Legs darkyellow; length of joints of legs I/IV 0.63/0.70+0.20/0.20+0.48/0.60+0.40/0.50+0.35/0.38 in male, 0.73/0.78+0.23/0.23+0.60/0.70+0.53/0.55+0.40/0.40 in female; tibial spines 2211, 1 1/3 d of joint in female, 3/5 d of joint in male; Tm I - 0.42, Tm IV absent. Abdomen light grey. Genitalia of both male and female as in Figs 33-37.

Comparison. The male of the new species is very close to D. cristatus (Blackwall, 1833), but differs by the more elongated palpal tibia and narrower, unciform, frontal apophysis of the embolic division (cp. WIEHLE 1960). By the shape of the epigyne the new species resembles D. caucasicus Tanasevitch, 1987, but differs in having well-curved receptacles (cp. TANASEVITCH 1987).

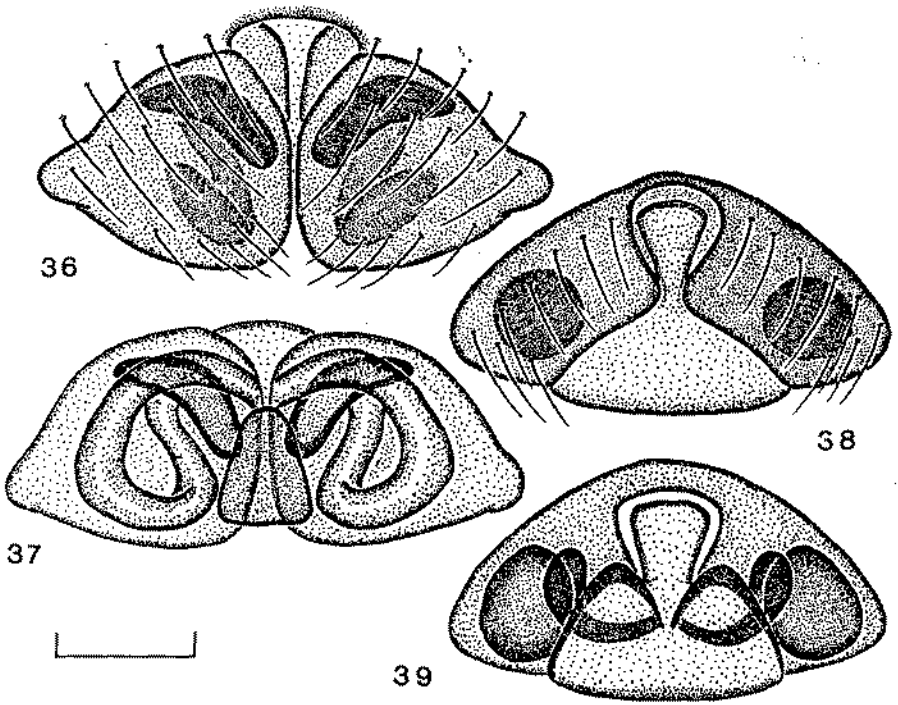
Distribution. Siberia: Putorana Plateau, Middle-Siberian Tableland, upper Kolyma River and northern coast of Okhotsk Sea.



Figs 25-31. Diplocephalus montanus sp.n., ♂♀ paratypes: 25= male carapace; 26,27=male palp (ectal et ventral view, respectively); 28= male palpal tibia (dorsal view); 29,30= epigyne (frontal et lateral view, respectively); 31= vulva. Scale = 0.1 mm



Figs 32-35. Diplocephalus sphagnicolus sp. n., ♂ paratype: 32= male carapace; 33, 34= male palp (ectal et mesal view, respectively); 35= male palpal tibia (dorsal view). Scale = 0.1 mm

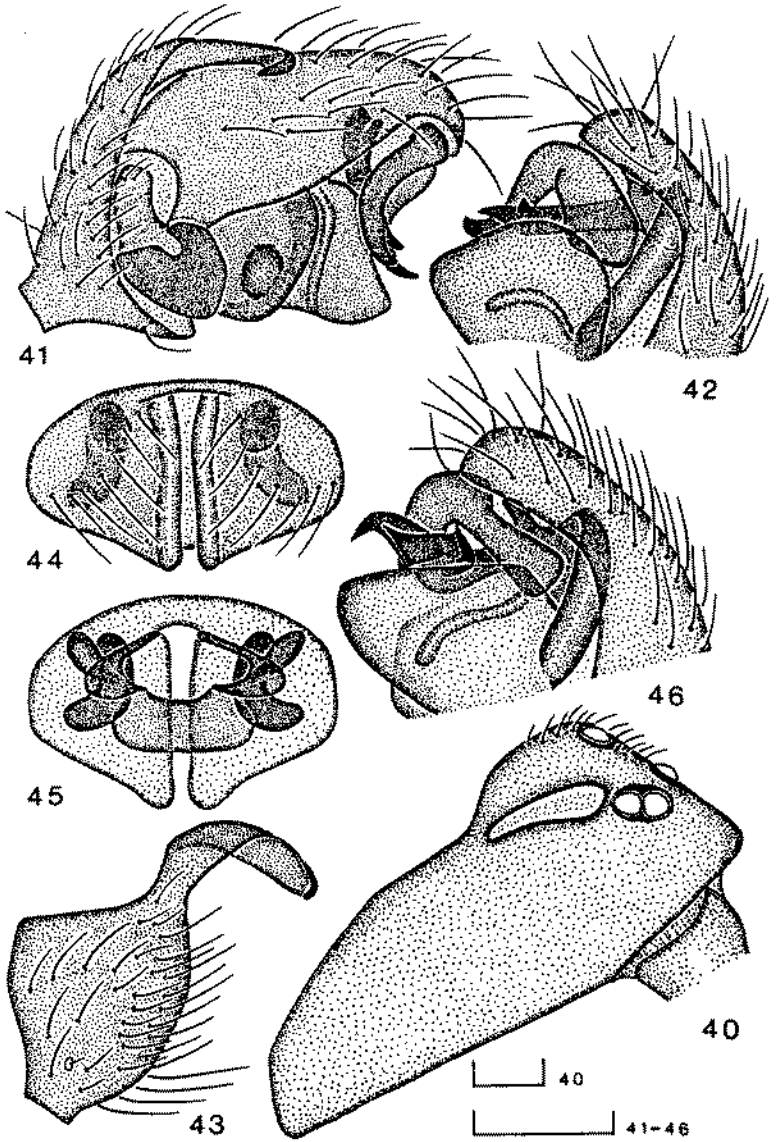


Figs 36-39. Diplocephalus sphagnicolus sp. n., ♀ paratype (Figs 36-37) and Savignya producta Holm, ♀ from Vorgashor (Komi) (Figs 38-39): 36, 38= epigyne; 37, 39= vulva. Scale= 0.1 mm

Diplocephalus subrostratus (O. Pickard-Cambridge, 1873) (Figs 40-45)

Erigone subrostrata: Pickard-Cambridge 1873, Proc. zool. Soc. London: 450, pl. 41, figs. 14 a-e (♂).
Lophocarenum cuneatum: Emerton, 1909, Trans. Conn. Acad. Sci., 14: 18, pl. 3, fig. 6. (♂), SYN. NOV.
Chocorua cuneata: Crosby et Bishop 1933, Ann. ent. Soc. Amer., 26(1): 164, pl. 9, figs. 216-222 (♂, ♀).
Diplocephalus cuneatus: Hackman 1954, Acta zool. Fenn., 79: 6, 28.
Diplocephalus maculifrons: Kulczyński 1926, Annu. Mus. Zool. Acad. Sci. URSS, 27: 44, pl. 2, fig. 7 (♀), SYN. NOV.

Material. 1 ♂, 2 ♀ - Yamal Autonomous Region, Stchuchya River, mouth of Tanlova-Yakha River Alnus fruticosa bushes, VIII. 1980 (leg. ALT et EV); 1 ♀ - Khanty-Mansi Autonomous Region, delta of Taz River, Tazovskiy, Alnus fruticosa bushes, 11. VII. 1984 (leg. NP); 4 ♀ - Altai Province, Teletskoye Lake, Artybash, forest of Betula, Abies and Pinus sibiricus, 7-13. VII. 1982 (leg. SG); 1 ♀ - Tuva Autonomous Republic, West Sayan Mts., Turan, valley forest of Betula, Abies and Picea, 7. VIII. 1984 (leg. ABR); 2 ♂, 4 ♀ - Krasnoyarsk Area, middle Yenisey River, Mirnoye (62°20'N), in stack of fire-logging, 6. IX. 1979 (leg. KE); 5 ♂, 19 ♀ - same locality, floodland Salix bushes along Varlamovka River, 3. IX. 1979 (leg. KE); 1 ♂, 8 ♀ - environs of Krasnoyarsk, Stolby State Reserve, Salix and Alnus fruticosa bushes along spring, 24. V. - 10. VI. 1980 (leg. KE); 5 ♂, 5 ♀ (HNHM), 2 ♂, 2 ♀ (SMF),



Figs 40-46. Diplocephalus subrostratus (O. P.-Cambr.), ♂♀ from Norilsk (Taimyr) (Figs 40-45) and Diplocephalus picinus (Blackw.), ♂ from Surami Pass (Georgia, Caucasus) (Fig. 46): 40= male carapace; 41= male palp (ectal view); 42, 46= male palp (mesal view); 43= male palpal tibia (dorsal view); 44= epigyne; 45= vulva. Scale = 0.1 mm

33 ♂, 24 ♀ - Taimyr Autonomous Region, environs of Norilsk, Kharaelakh River, floodland Salix bushes, 29.VIII.1983 (leg. KE); 1 ♂ - Evenk Autonomous Region, Tura, Alnus fruticosa bushes, 29.VIII.1982 (leg. KE); 4 ♀ - Taimura River, mouth of Neptene River, valley forest of Betula, 29.VII.1982 (leg. KE); 1 ♂, 2 ♀ - environs of Magadan, lower Ola River, valley forest of Populus and Chosenia, 7.X.1984 (leg. YM).

Description. Total length of male/female 1.75-1.88/1.80-2.18. Carapace yellowish-brown, its length/width 0.75-0.80/0.58-0.60 in male, 0.70-0.80/0.55-0.60 in female; carapace of male as in Fig. 40. Chelicerae with 4 promarginal teeth. Legs brownish-yellow, length of joints of legs I/IV 0.58/0.68+0.18/0.18+0.50/0.63+0.45/0.55+0.35/0.38 in male, 0.58/0.70+0.20/0.20+0.50/0.63+0.45/0.48+0.35/0.38 in female; tibial spines 2211, 1 d of joint in female, 3/5 d of joint in male; Tm I - 0.44, Tm IV absent. Abdomen dark grey. Genitalia of both male and female as in Figs. 41-45.

Taxonomic remarks. In describing his D. subrostratus, O. Pickard-Cambridge (1873) noted a pronounced similarity of his new form with the European D. picinus (Blackwall, 1841), but gave the differences in the shape of both male carapace and palpal tibia. An examination of several series of both D. picinus and D. subrostratus has led me to the conclusion that these distinguishing characters referred to by O. PICKARD-CAMBRIDGE (1873) do not permit a safe discrimination of the males of the two species concerned. The only reliable difference lies in the shape of the embolic division. On the contrary, the females are easily distinguishable by the much less separated lateral plates of the epigyne of D. picinus (cp. WIEHLE 1960 and Fig. 46).

The synonymy of D. subrostratus and D. cuneatus is doubtless. The situation with D. maculifrons is more obscure. The holotype female of the latter taxon claimed to have been deposited in the collection of the Institute of Zoology of the Academy of Science of Poland, Warsaw, is presumed to be lost (A. SŁOJEWSKA, pers. comm. of 10.XII.1986). However, the original illustration of KULCZYŃSKI (1926) seems to be sufficient, in my opinion, for a confirmation of the above synonymy.

Distribution. This species has been recorded in southern Cisbaikalia (PICKARD-CAMBRIDGE 1873), Yamal and Yenisey (ESKOV 1986)*; in North America - New Hampshire, New York, Quebec, Ontario and Newfoundland (CROSBY et BISHOP 1933; HACKMAN 1954). In Siberia this species is distributed from Yamal eastward up to Kamchatka, and from Taimyr southward up to Sayan Mts.

Diplocephalus uliginosus sp.n. (Figs 47-52)

Holotype, ♂ - Taimyr Autonomous Region, Putorana Plateau, Ayan Lake, mouth of Kapchug River, bog of Sphagnum, Aulacomnium and Eriophorum at tundra-like valley heath, 11.VI.1983 (leg. KE). - Paratypes, 2 ♂, 4 ♀ (HNHM), 2 ♂, 13 ♀ - together with holotype; 1 ♀ - same locality, bog of Aulacomnium and Eriophorum in sparse forest of Larix dahurica, 13.VI.1983 (leg. KE); 10 ♀ - same locality, boggy forest of Larix dahurica with Betula nana, 13.VI.1983 (leg. KE); 3 ♂, 2 ♀ - Evenk Autonomous Region, Taimura River, mouth of Chambe River, floodland Alnus fruticosa bushes, 21.VIII.1982 (leg. KE); 5 ♀ - same locality, floodland Carex swamp, 18.VIII.1982 (leg. KE); 5 ♀ - Taimura River, mouth of Neptene River, Sphagnum hillocks in floodland Carex swamp, 4.-7.VIII.1982 (leg. KE); 1 ♂, 5 ♀ - same locality, swampy floodland Alnus fruticosa bushes, 7.VIII.1982 (leg. KE); 2 ♂, 3 ♀ - Magadan Area, upper Kolyma River, 10 km upstream of Vetrenyi, Alnus fruticosa bushes with Sphagnum along stream, 5.VIII.1984 (leg. KE); 1 ♂, 3 ♀ - same biotope, 5.VII.1987 (leg. YM); 1 ♂, 1 ♀ (SMF) - upper Kolyma River, Sibit-Tyellakh, Salix bushes at Carex swamp, 23.VIII.1984 (leg. YM); 1 ♂, 1 ♀ - same locality, wet Larix dahurica forest with Carex and Rubus chamaemorus, 1.IX.1985 (leg. YM); 3 ♂, 2 ♀ - same locality, VI-VIII. 1985 (leg. YM); 3 ♀ - Detrin River (right tributary of Kolyma River) 56 km upstream of mouth, 1.VII.1987 (leg. YM); 1 ♂, 4 ♀ - environs of Magadan, Talon, VI-VIII.1987 (leg. ND); 1 ♂, 14 ♀ - Khabarovsk Province, Dzhugdzhur Mt. Ridge, Ulya River, mouth of Amka River, forest of Larix dahurica with Betula middendorfi, 6.VIII.1987 (leg. VZ et IS); 4 ♂, 10 ♀ -

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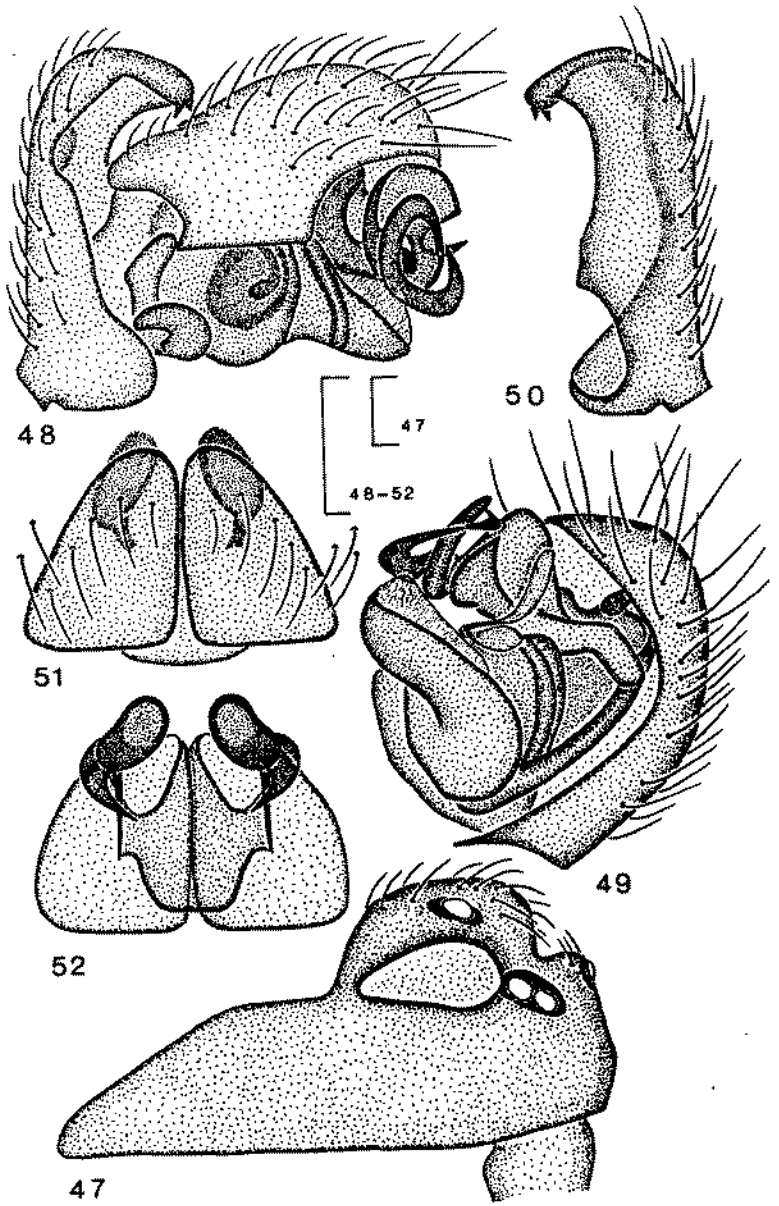
* Specimens from Yamal and Yenisey were erroneously determined by me as D. picinus (Eskov, 1986).



Figs 47-52. Diplocephalus uliginosus sp. n., ♂ ♀ paratypes: 47= male carapace; 48, 49= male palp (ectal et ventral view, respectively); 50= male palpal tibia (mesal view); 51= epigyne; 52= vulva. Scale = 0.1 mm

Amka River, mouth of Khetana Spring, Sphagnum hillocks in valley forest of Betula and Larix dahurica (leg. VZ).

Description. Total length of male/female 1.68-1.78/1.78-1.85. Carapace yellowish-brown; its length/width 0.78-0.80/0.55-0.58 in male, 0.78-0.80/0.58-0.63 in female; male carapace as in Fig. 47. Chelicerae with 4 promarginal teeth. Legs dark yellow; length of joints of legs I/IV 0.55/0.63+0.18/0.18+0.48/0.53+0.40/0.43+0.35/0.35 in male, 0.63/0.70+0.20/0.20+0.50/0.58+0.43/0.48+0.35/0.35 in female; tibial spines 2211, 1 d of joint in female, 1/4 d of joint on male; Tm IV - 0.47, Tm IV absent. Abdomen dark grey. Genitalia of both male and female as in Figs 48-52.

Comparison. By the shape of the male carapace, the new species seems closer to D. latifrons (O. Pickard-Cambridge, 1863), but is well distinguishable by the vertically elongated palpal tibia devoid of apophysis and practically rectangular lateral plates of the epigyne (cp. WIEHLE 1960).

Distribution. Siberia: Putorana Plateau, Middle-Siberian Tableland, upper Kolyma River, northern and western coasts of Okhotsk Sea.

Savignya basarukini sp. n. (Figs 53-59)

Holotype, ♂ - Sakhalin Island, Okha District, lower Tenga River, 8.V.-4.VI.1987 (leg. AMB). - Paratypes. 1 ♂, 2 ♀ (HNHM), 3 ♂, 34 ♀ - together with holotype; 1 ♀ - Sakhalin Island, Poronaisk District, Vitnitsa River, 27.X.1987 (leg. AMB); 3 ♀ - Khabarovsk Province, lower Amur River, Slavyanka, forest of Betula, VIII.1983 (leg. NR).

Description. Total length of male/female 1.68-1.75/1.60-1.70. Carapace greyish-brown, its length/width 0.83-0.85/0.60-0.63 in male, 0.70-0.75/0.50-0.55 in female; male carapace as in Fig. 53. Chelicerae with 4 promarginal teeth. Legs brownish-yellow, length of joints of legs I/IV 0.58/0.65+0.20/0.20+0.48/0.58+0.43/0.45+0.35/0.35 in male, 0.53/0.58+0.18/0.18+0.43/0.53+0.38/0.43+0.30/0.30 in female; tibial spines 2211, 1 d of joint in female, 1/4 d of joint in male; Tm I - 0.43, Tm IV absent. Abdomen dark grey, almost black. Genitalia of both male and female as in Figs 54-59.

Comparison. By the shape of the male carapace, the new species seems to be especially closely related to S. frontata Blackwall, 1833, but differs by the form of both embolic division and suprategulum (cp. WIEHLE 1960; TANASEVITCH 1985). By the epigyne S. basarukini sp. n. is related to S. birostrum (Chamberlin et Ivie, 1947), S. nenilini Marusik, 1988 and S. saitoi sp. n., but differs by the contiguous lateral plates of the epigyne (cp. MARUSIK 1988 and figs. 72-75).

Distribution. Far East: Sakhalin Island and lower Amur River.

Etymology. The new species I am glad to name after the collector of this material, Dr. Anatoliy M. BASARUKIN.

Savignya birostrum (Chamberlin et Ivie, 1947) (Figs 74-86)

Cephalethus birostrum: Chamberlin et Ivie 1947, Bull. Univ. Utah, 37 (10): 30, pl. 3, figs. 17-20 (♂, non ♀).

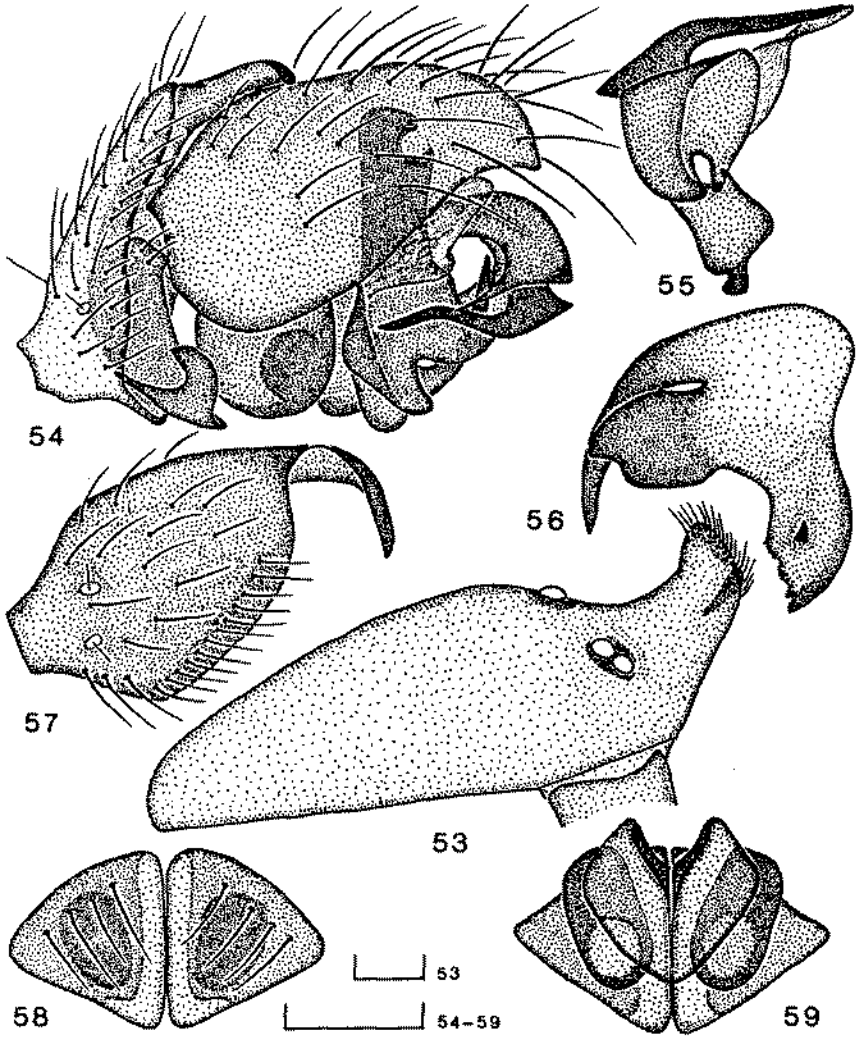
Savignya birostrum: Marusik 1988, Zool. Zhurn., 67 (in press), figs. 19-22 (♂, ♀).

Material. 1 ♂, 1 ♀ (HNHM), 2 ♂, 4 ♀ - environs of Magadan, Snezhnaya Dolina, valley forest of Chosenia, 14.IX.1986 (leg. et det. YM); 2 ♀ - Kamtchatka Peninsula, Kronotskiy State Reserve, Dolina Geyzerov Valley, warm moss near geyser, 30.VIII.-5.IX.1987 (leg. AVT).

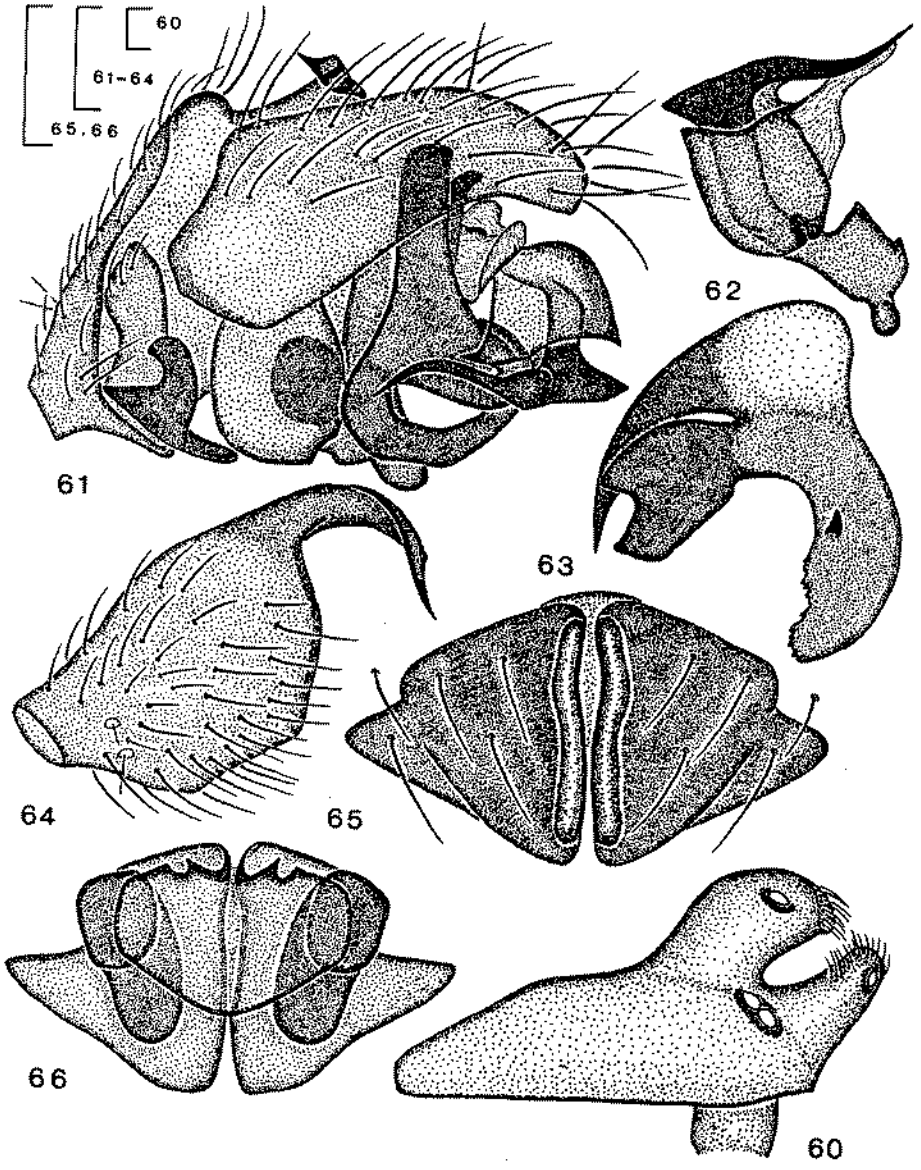
Distribution. Beringia: southern coast of Alaska (CHAMBERLIN et IVIE 1947), northern Cisokhotia (MARUSIK 1988), Pacific coast of Kamchatka Peninsula. The record of this species in the Polar Urals by TANASEVITCH (1985) is erroneous (s. about S. nenilini MARUSIK 1988).

Savignya borea sp. n. (Figs 60-66)

Holotype, ♂ - Khabarovsk Province, Dzhugdzhur Mt. Ridge, Amka River (left tributary of Ulya River), mouth of Khetana Spring, meadow, 23.VIII.1985 (leg. APR). - Paratypes.



Figs 53-59. Savignya basarukini sp. n., ♂♀ paratypes: 53= male carapace; 54= male palp; 55= embolic division; 56= suprategulum; 57= male palpal tibia (dorsal view); 58= epigyne; 59= vulva. Scale = 0.1 mm



Figs 60-66. Savignya borea sp. n., ♂♀ paratypes: 60= male carapace; 61= male palp; 62= embolic division; 63= suprategulum; 64= male palpal tibia (dorsal view); 65= epigyne; 66= vulva. Scale = 0.1 mm

1 ♀ - together with holotype; 1 ♀ - Magadan Area, Detrin River (right tributary of Kolyma River), 14 km S of Ust-Omchug, shingle bank of stream, 24.V.1985 (leg. YM); 2 ♀ - upper Kolyma River, Sibit-Tyellakh, gramineous meadow along stream, 25.VIII.1986 (leg. YM); 4 ♀ - same locality, 10.IX.1986 (leg. YM); 4 ♀ - source of Kolyma River, Kontaktovyi Spring (right tributary of Kulu River) 18 km upstream of mouth, 15.VI.-18.VIII.1987 (leg. SB); 1 ♂, 1 ♀ (HNHM), 2 ♂, 1 ♀ - environs of Magadan, Hertner Bay, Nyuklya, meadow-like vegetation on slope, 9.VIII.1985 (leg. YM); 1 ♀ - environs of Magadan, Talon, VI-VIII.1979 (leg. ND); 1 ♂, 9 ♀ - environs of Magadan, Snezhnaya Dolina, shingle bank of Dukcha River, 25.V.1985 (leg. YM); 1 ♀ (SMF), 2 ♀ - Chukotka Autonomous Region, Chaunskaya Guba Bay, delta of Chaun River, VI-VIII.1987 (leg. ASR); 1 ♀ - Taimyr Autonomous Region, Ayan Lake, mouth of Kapchug River, rocky bank of lake with lichen, sparse forest of Larix dahurica, 21.V.1983 (leg. KE); 1 ♂, 5 ♀ - Evenk Autonomous Region, Tura, valley bushes of Alnus fruticosa, 29.VIII.1982 (leg. KE).

Description. Total length of male/female 2.43-2.55/2.50-2.55. Carapace brown; its length/width 1.10-1.13/0.75-0.78 in male, 0.88-0.93/0.68-0.70 in female; male carapace as in Fig. 60. Chelicerae with 3 promarginal teeth. Legs yellowish-brown; length of joints of legs I/IV 0.83/0.98+0.25/0.25+0.75/0.88+0.65/0.75+0.48/0.48 in male, 0.75/0.85+0.23/0.23+0.65/0.78+0.58/0.63+0.43/0.43 in female; tibial spines 2211, 1 d of joint in female, 1/4 d of joint in male; Tm I - 0.47, Tm IV absent. Abdomen dark grey. Genitalia of both male and female as in Figs 61-66.

Comparison. The new species is particularly closely related to S. yasudai (H. Saito, 1986) (= Diplocephalus yasudai in the original description), but differs by the posterior cephalic elevation of the male carapace being wider than the anterior one, lack of the small rounded frontal apophysis on the basal lobe of the palpal tibia, and equally long frontal apophyses of the embolic division (cp. SAITO 1986).

Distribution. Siberia: Putorana Plateau, Middle-Siberian Tableland, upper Kolyma River, northern and western coasts of Okhotsk Sea and Chukotka Peninsula.

Savignya frontata Blackwall, 1833

Savignya frontata: Wiehle 1960, Tierwelt Deutschlands, 47: 538, figs. 999-1007 (♂, ♀).
Savignya frontata: Tanasevitch 1985, Trudy Zool. Inst. Acad. Sci. USSR, 139: 56, figs. 20-22 (♂).

Material. 2 ♂, 2 ♀ (HNHM), 2 ♂, 2 ♀ (SMF), 7 ♂, 29 ♀ - Krasnoyarsk Area, middle Yenisey River, Mirnoye (62°20'N), floodland meadows and bushes of Salix and Alnus fruticosa, 2.-18.VIII.1979 (leg. KE); 2 ♂, 7 ♀ - Evenk Autonomous Region, Taimura River, mouth of Neptene River, floodland meadow and Salix bushes, 19.VII.-6.VIII.1982 (leg. KE); 1 ♂, 2 ♀ - Taimura River, mouth of Chambe River, floodland Salix bushes, 16.VIII.1982 (leg. KE).

Distribution. Europe with Iceland (WIEHLE 1960), in Siberia - Yenisey River and Middle-Siberian Tableland*.

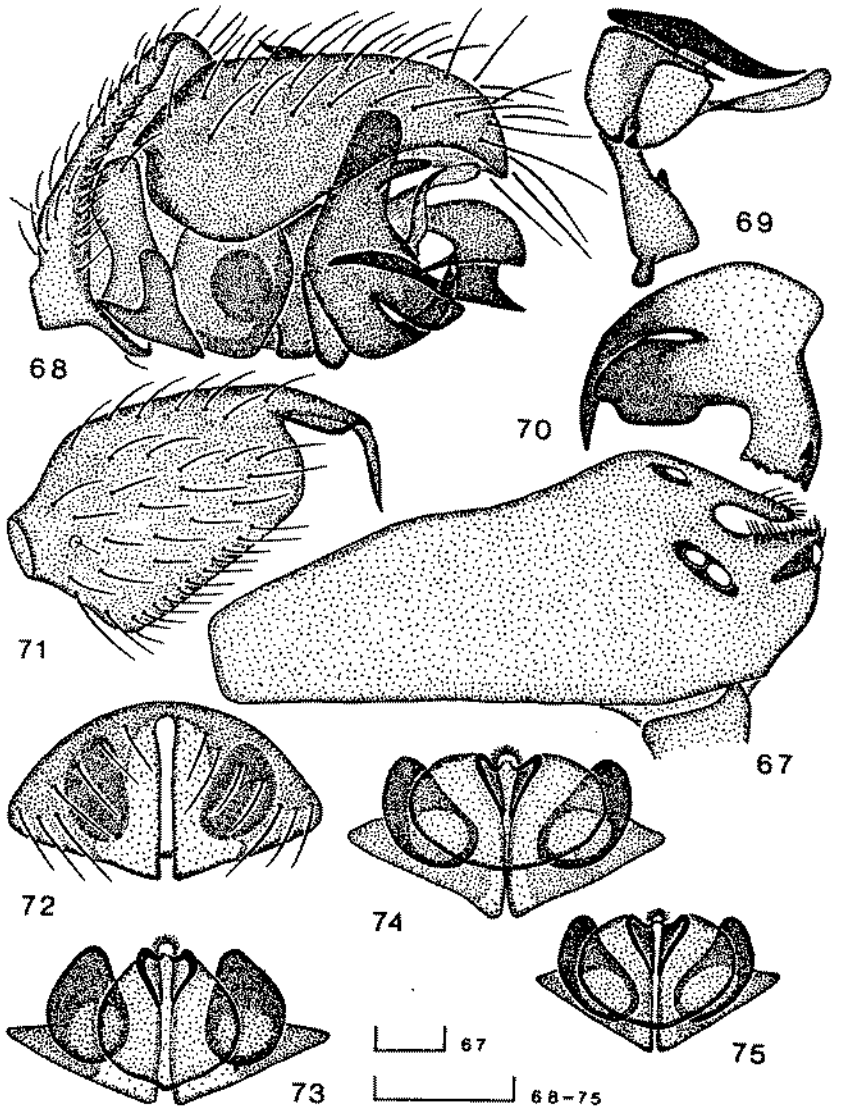
Savignya nenilini Marusik, 1988 (Figs 75, 87)

Savignya birostrum (non Chamberlin et Ivie, 1947): Tanasevitch 1985, Trudy Zool. Inst. Acad. Sci. USSR, 139: 56, figs. 13-19 (♂, ♀).
Savignya nenilini: Marusik 1988, Zool. Zhurn., 67 (in press), figs. 15-18 (♂, ♀).

Material. 1 ♂ (ZMMU, Ta-4408)** - Magadan Area, upper Kolyma River, Sibit-Tyellakh, bushes of Alnus fruticosa with sedges and mosses, 27.VIII.1986 (leg. YM); 14 ♂, 22 ♀ (ZMMU, Ta-4409)** - same biotope, same date; 2 ♂, 1 ♀ (ZMMU, Ta-4410)** - upper Kolyma River 10 km upstream of Vetrenyi, Salix bushes at edge of Carex swamp, 5.VIII.1984 (leg. KE)**; 7 ♂, 7 ♀ (ZMMU, Ta-4411)** - Yamal Autonomous Region, eastern macroslope

* The record of this species in Magadan (ESKOV 1986) is erroneous and actually belongs to S. borea sp.n.

** Ta-4408 - holotype, Ta-4409 - Ta-4411 - paratypes.



Figs 67-75. Savignya saitoi sp.n., ♂ ♀ paratypes (Figs 67-73), Savignya birostrum (Chamb. et Iv.), ♀ from Magadan (Fig. 74) and Savignya nenilini Mar., ♀ from Ayan Lake (Putorana Plateau) (Fig. 75): 67= male carapace; 68= male palp; 69= embolic division; 70= suprategulum; 71= male palpal tibia (dorsal view); 72= epigyne; 73, 74, 75= vulva. Scale = 0.1 mm

of Polar Urals, valley of Sob River, VIII. 1983 (leg. AVT); 1 ♂, 2 ♀ (HNHM), 1 ♂, 8 ♀ - Taimyr Autonomous Region, Putorana Plateau, Ayan Lake, mouth of Kapchug River, bog of Sphagnum, Aulacomnium and Eriophorum at tundra-like valley heath, 11. VI. 1983 (leg. KE); 7 ♀ - same locality, dry valley tundra-like heath, 12-21. VI. 1983 (leg. KE); 2 ♀ - same locality, boggy sparse forest of Larix dahurica; 2 ♂ - same locality, Salix bushes with Hylacomium along stream, 12. VI. 1983 (leg. KE); 1 ♂ (SMF) - Ayan Lake, mouth of Gulyami River, bog of Sphagnum, Carex and Eriophorum, 9. VIII. 1983 (leg. KE).

Distribution. Siberia: eastern macroslope of Polar Urals, upper Kolyma River (MARUSIK 1988), Putorana Plateau.

Savignya producta Holm, 1977 (Figs 38-39)

Savignya producta: Holm 1977, Ent. Scand., 8: 161, figs. 1-7 (♂).

Material. 1 ♂ - Krasnoyarsk Area, middle Yenisey River, Mirnoye (62°20'N), in house, 16. VI. 1978 (leg. KE); 1 ♂, 1 ♀ (HNHM), 1 ♂, 1 ♀ (SMF), 8 ♂, 18 ♀ - Komi Autonomous Republic, Vorgashor, limestone denudations at bank of tundra spring, VII. 1984 (leg. AVT).

Description. Total length of male/female 1.83-2.38/1.73-2.13. Carapace light brown, its length/width 0.90-1.08/0.60-0.70 in male, 0.82-0.88/0.58-0.63 in female. Chelicerae with 4 promarginal teeth. Legs brownish-yellow; length of joints of legs I/IV 0.70/0.85 + 0.20/0.20+0.63/0.78+0.53/0.60+0.40/0.40 in male, 0.68/0.80+0.20/0.20+0.55/0.70 + 0.45/0.55+0.35/0.35 in female; tibial spines 2211, 1 d of joint in both male and female; Tm I - 0.47, Tm IV absent. Abdomen black. Genitalia of female as in Figs. 38-39; genitalia and carapace of male - s. HOLM (1977).

Distribution. This species has been recorded in Swedish Lapland (HOLM 1977), Polar Urals (TANASEVITCH 1985) and middle Yenisey River (ESKOV 1986); Polar Cisuralia (Bolshezemelskaya Tundra).

Savignya saitoi sp. n. (Figs 67-73)

Holotype, ♂ - Sakhalin Island, Korsakovskoye District, Ozyornyi, 4. V. 1986 (leg. AMB). Paratypes. 1 ♂, 2 ♀ (HNHM), 3 ♂, 5 ♀ - together with holotype; 1 ♂, 1 ♀ - Aniva District, Novoalexandrovskoye, 19. V. 1985 (leg. AMB); 1 ♂, 6 ♀ - Okha District, lower Tenga River, 6.-8. V. 1987 (leg. AMB); 2 ♀ - Amur Area, Khingan State Reserve, gramineous meadow, 1. VIII. 1983 (leg. YM); 3 ♀ - Kuril Islands, Kunashir Island, Yuzhnokurilsk, 2. IX. 1987 (leg. AMB); 1 ♂, 4 ♀ - Kunashir Island, Otradnoye, 19. IX. 1987 (leg. AMB).

Description. Total length of male/female 1.70-2.00/1.70-1.90. Carapace brown, its length/width 0.85-0.95/0.63-0.68 in male, 0.70-0.75/0.55-0.58 in female; male carapace as in Fig. 67. Chelicerae with 4 promarginal teeth. Legs yellowish-brown; length of joints of legs I/IV 0.55/0.63+0.18/0.18+0.43/0.53+0.40/0.43+0.33/0.33 in male, 0.53/0.60 + 0.18/0.18+0.38/0.45+0.35/0.40+0.30/0.30 in female; tibial spines 2211, 1 d of joint in female, 1/4 d of joint in male; Tm I - 0.52, Tm IV absent. Abdomen dark grey. Genitalia of both male and female as in Figs 68-73.

Comparison. The new species seems to be most closely related to S. birostrum (Chamberlin et Ivie, 1947) and S. nenilini Marusik, 1988, but differs in the outgrowth of the carapace attenuating toward tip; frontal apophysis of the palpal tibia curved angularly (not regularly); longitudinal axis of receptacles almost parallel to each other.

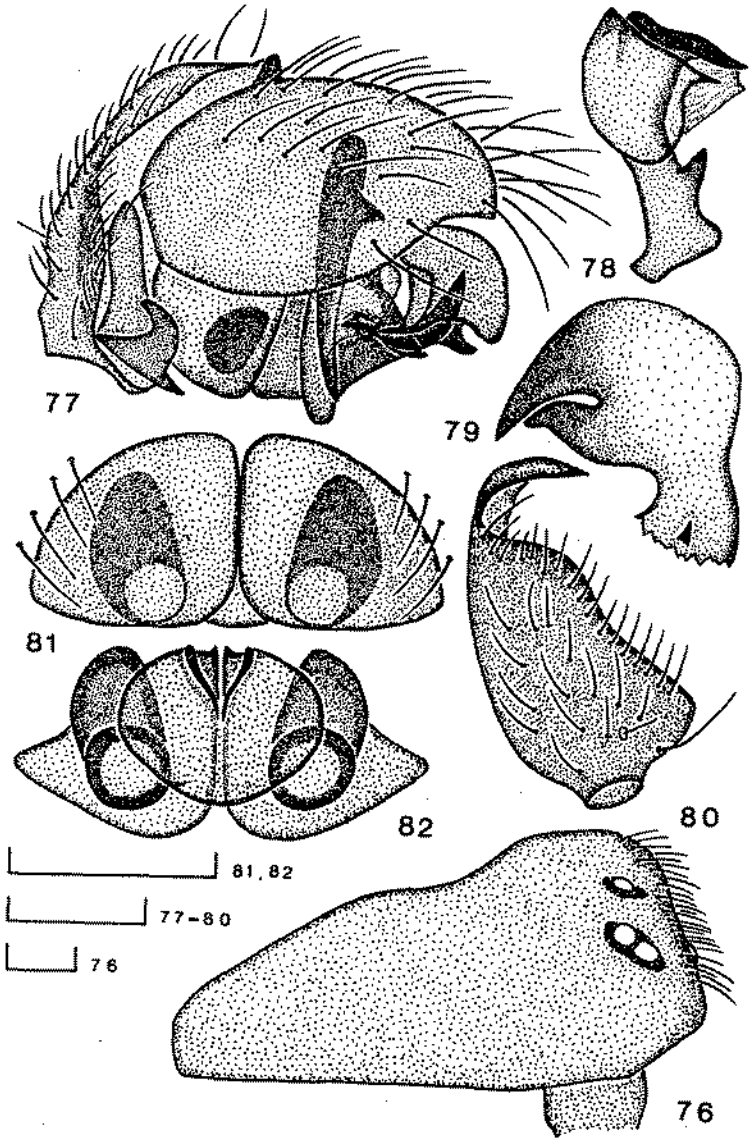
Distribution. Far East: Sakhalin Island, middle Amur River, Kuril Islands.

Etymology. The new species is named after the Japanese arachnologist, Dr. Hiroshi SAITO (Tochigi).

Savignya ussurica sp. n. (Figs 76-82)

Holotype, ♂ - Maritime Province, Ussuri State Reserve, valley broadleaved forest with Pinus koraiensis, 26. IX.-12. X. 1977 (leg. GK et EM). - Paratypes. 2 ♂, 6 ♀ - together with holotype; 2 ♀ - same locality, valley forest of Fraxinus, 16. VII. 1977 (leg. GK et EM).

Description. Total length of male/female 1.68-1.83/1.55-1.63. Carapace yellowish-brown; its length/width 0.78-0.80/0.60-0.63 in male, 0.58-0.63/0.45-0.50 in female; male



Figs 76-82. Savignya ussurica sp. n., ♂ ♀ paratypes: 76= male carapace; 77= male palp; 78= embolic division; 79= suprategulum; 80= male palpal tibia (dorsal view); 81= epigyne; 82= vulva. Scale= 0.1 mm

carapace as in Fig. 76. Chelicerae with 4 promarginal teeth. Legs dark yellow; length of joints of legs I/IV 0.50/0.58+0.18/0.18+0.38/0.48+0.32/0.40+0.30/0.30 in male, 0.50/0.58+0.18/0.18+0.38/0.43+0.33/0.35+0.28/0.28 in female; tibial spines in female 2211, 1 d of joint, 0000 in male; Tm I - 0.40, Tm IV absent. Abdomen pale grey. Genitalia of both male and female as in Figs 77-82.

Comparison. The stout and very massive cephalic elevation of the new species resembles some extent that of S. kawachiensis Oi, 1960, but differs in the elevation being wider and the frontal unciform apophysis of the palpal tibia devoid of an additional parabasal tooth (cp. OI 1960). The epigyne of S. ussurica sp.n., with its lateral plates regularly rounded at the inner margins, seems to be unique among the congeners.

Savignya zero sp. n. (Figs 83-85)

Holotype, ♂ - Magadan Area, middle Chelomdja River (left tributary of Taui River), VI.-VIII.1987 (leg. ND).

Description. Total length of male 1.85. Carapace brown, its length/width 0.95/0.63, its shape as in Fig. 83. Chelicerae with 4 promarginal teeth. Legs dark yellow; length of joints of legs I/IV 0.63/0.68+0.18/0.18+0.50/0.58+0.45/0.50+0.33/0.35; tibial spines 2211, 1/4 d of joint; Tm I - 0.47, Tm IV absent. Abdomen dark grey. Male genitalia as in Figs 84-85. Female is unknown.

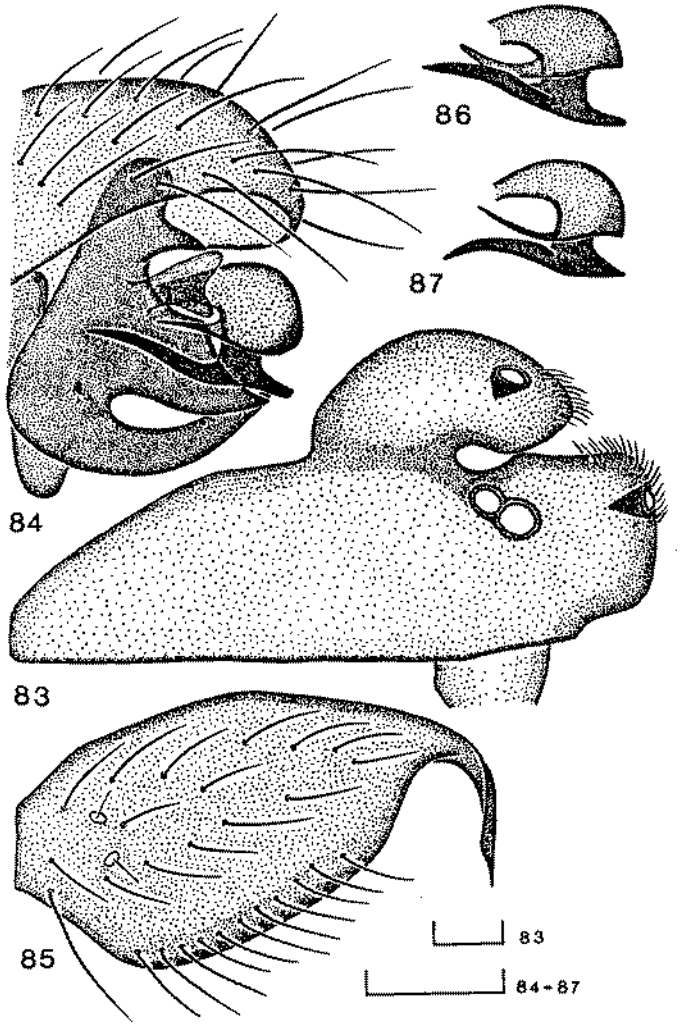
Comparison. By the shape of both male carapace and genitalia the new species is particularly closely related to S. birostrum (Chamberlin et Ivie, 1947) and S. nenilini (Marusik, 1988), but differs from both of them by the short posterior elevation of the carapace and by the rounded frontal corner of the embolic division (cp. MARUSIK 1988 and Figs 86-87).

Distribution. Siberia: northern coast of Okhotsk Sea.

KEY TO THE SAVIGNYA SPECIES

As it has already been mentioned earlier, we treat Savignya within the limits corresponding to the diagnosis given above and relying on the genital structure of both males and females. Following it, the key below must include, besides the above Siberian and Far Eastern species, also S. kawachiensis Oi, 1960 (Honshu, Japan) and S. yasudai (H. Saito, 1986), comb. nov. (Hokkaido, Japan). As soon as the synonymy Savignya = Delorrhipis has been rejected, the species S. harmsi Wunderlich, 1980, S. superstes Thaler, 1984 and S. galeriformes Tanasevitch, 1987 (from mountain regions of Spain and Caucasus) are to be excluded from Savignya char. em., though this does not automatically mean they all belong to Delorrhipis. Besides, I incorporate into the key below (as well as into the following zoogeographical analysis) an undescribed Savignya sp. from Hokkaido, Japan, copies of the drawings of which were kindly sent to me by Dr. H. SAITO (personal letter of 15.IX.1986).

1 (24) Males.
2 (11) Carapace with a single cephalic elevation.
3 (6) Cephalic elevation not higher than long (in lateral view); all eyes situated on the elevation.
4 (5) Cephalic elevation considerably longer than high, highest at level of PME; frontal unciform apophysis of palpal tibia without additional parabasal tooth
S. ussurica sp. n.
5 (4) Cephalic elevation as long as high, highest at level between AME and PME; frontal unciform apophysis of palpal tibia with an additional parabasal tooth
S. kawachiensis Oi
6 (3) Cephalic elevation higher than long parabasally (in lateral view), carries only AME
7 (10) Palpal tibia with a single frontal unciform apophysis.
8 (9) Carapace in lateral view regularly increases in height from PME until tip of cephalic elevation, only the tip is pubescent
S. frontata Bl.
9 (8) Carapace in lateral view concave between PME and tip of cephalic elevation, pubescence covers upper third of latter's frontal surface
S. basarukini sp. n.



Figs 83-87. Savignya zero sp.n., ♂ holotype (Figs. 83-85), Savignya birostrum (Chamb. et Iv.), ♂ from Magadan (Fig. 86) and Savignya nenilini Mar., ♂ from Ayan Lake (Putorana Plateau) (Fig. 87): 83= male carapace; 84= tip of male palp; 85= male palpal tibia (dorsal view); 86, 87= tip of embolic division (ectal view). Scale = 0.1 mm

10 (7) Palpal tibia with two unciform frontal apophyses — S. producta Holm
11 (2) Carapace with two subsequently disposed cephalic elevations carrying AME and PME, respectively.
12 (15) Posterior cephalic elevation more or less vertical.
13 (14) Anterior cephalic elevation in lateral view almost as long as posterior one — S. borea sp. n.
14 (13) Anterior cephalic elevation in lateral view almost twice as long as posterior one — S. yasudai (H. Saito)
15 (12) Posterior cephalic elevation extended more or less horizontally anteriad.
16 (17) PME situated in distal third of posterior cephalic elevation — S. zero sp. n.
17 (16) PME situated in middle part of posterior cephalic elevation.
18 (21) Posterior cephalic elevation thick, its apex in lateral view equal to 4-5 diameters of AME, with a distinct constriction in distal half.
19 (20) Constriction of posterior cephalic elevation almost half as deep as latter's own diameter; carapace 1.00-1.10 mm long — S. birostrum (Chamb. et Iv.)
20 (19) Constriction of posterior cephalic elevation about a quarter as deep as latter's own diameter; carapace 0.85-0.90 mm long — S. nenilini Mar.
21 (18) Posterior cephalic elevation thin, its apex in lateral view equal to 1-2 diameters of AME, without constriction in distal half.
22 (23) Posterior cephalic elevation directed strictly horizontally, its apex reaching to that of anterior cephalic elevation — Savignya sp.
23 (22) Posterior cephalic elevation directed obliquely ventrad at an angle of ca. 25°, its apex not reaching to that of anterior cephalic elevation — S. saitoi sp. n.
24 (1) Females*.
25 (28) Carapace 0.82-0.93 mm long.
26 (27) Lateral plates of epigyne separated in their posterior parts by a distance over a width of each of them — S. producta Holm
27 (26) Lateral plates of epigyne closer to each other, in their posterior parts almost contiguous — S. borea sp. n.
28 (25) Carapace 0.50-0.80 mm long.
29 (30) Inner corners of epigynal lateral plates broadly rounded — S. ussurica sp. n.
30 (29) Inner corners of epigynal lateral plates rectangular.
31 (32) Inner corners of epigynal lateral plates provided with drop-shaped outgrowth — S. frontata Bl.
32 (31) Inner corners of epigynal lateral plates without drop-shaped outgrowth.
33 (34) Inner corners of epigynal lateral plates contiguous all along their length — S. basarukini sp. n.
34 (33) Inner corners of epigynal lateral plates split with a cleavage.
35 (36) Longitudinal axis of receptacles almost vertical, their l/d ratio as 1.5; carapaca 0.70-0.75 mm long — S. saitoi sp. n.
36 (35) Longitudinal axis of receptacles deviating from vertical by 30-40°, their l/d ratio 1.7-2.0.
37 (38) Medial plate of vulva not broader than long; carapace 0.65-0.70 mm long — S. nenilini Mar.
38 (37) Medial plate of vulva broader than long; carapace 0.75-0.80 mm long — S. birostrum (Chamb. et Iv.)

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*Females of S. kawachiensis, S. yasudai, S. zero and Savignya sp. are still unknown.

ZOOGEOGRAPHICAL ANALYSIS

The Siberian fauna of Diplocephalus is not rich, but quite conspicuous. Out of a total of 9 species/subspecies of this genus in the region, 6 seem to be restricted to eastern Siberia (D. cristatus angusticeps, D. marusiki, D. mirabilis, D. montanus, D. sphagnicolus, D. uliginosus). Of the remaining 3 species, D. connatus displays connections with Europe, while D. subrostratus with North America (distinctly vicariating with the European D. picinus); D. barbatus has a circumpolar high-Arctic pattern.

As regards the outlined group of endemic Diplocephalus, it seems noteworthy that D. mirabilis and D. uliginosus are taxonomically well isolated, displaying no clear affinities with the other congeners. On the other hand, D. cristatus angusticeps and D. sphagnicolus belong to a rather homogenous species group, namely the cristatus-group, richly represented in Europe, particularly in its mountainous regions (GEORGESCO 1969; THALER 1972; TANASEVITCH 1987). Interestingly, D. cristatus cristatus common both to Europe and North America seems to be absent from Siberia.

The last couple of the Siberian endemics, D. marusiki and D. montanus, joins the subgenus Hemistajus Schenkel, 1934*, which also comprises the high-Arctic D. barbatus and the montane Alpine D. rostratus, reported from heights of 2700-3500 m a.s.l. (THALER 1970). Taxonomically, this group can be split into two pairs of extremely closely related forms, i.e. D. barbatus-D. marusiki and D. rostratus-D. montanus. One of the members of each pair is a Siberian endemic; the origin of the circumpolar D. barbatus is also apparently connected with the Siberian sector of the Arctic. It seems to be very likely that the evolvement of the barbatus-group in general, with its distribution pattern being typically arcto-montane, can be postulated to have been restricted to Siberia.

In other words, besides the European D. connatus reaching in the east as far as the Middle-Siberian Tableland, there are further 3 endemic Diplocephalus, D. cristatus angusticeps, D. sphagnicolus and D. subrostratus, displaying somewhat less clear-cut affinities with Europe. On the contrary, Siberian roots seem to be traceable in one European species, D. subrostratus. Therefore, the conclusion can be drawn that the Siberian and European faunas of Diplocephalus have been developed quite autochthonously. Interexchange has been rather feeble and anisotropic; Europe seems to have served as the main source.

It is noteworthy that if eastern Siberia harbours a highly peculiar (though not too rich) fauna of Diplocephalus, the Manchurian Biogeographical Region seems to be almost deficient in its representatives. Only two forms are known in this Region, the Japanese D. bicurvatus Bösenberg et Strand, 1906 (the generic allocation of which is dubious), and the Hokkaidan Diplocephalus sp. (H. SAITO, personal letter of 15.IX.1986).

Quite an opposite pattern is displayed by the genus Savignya. Out of the 12 known representatives, 6 (S. basarukini, S. kawachiensis, S. saitoi, S. ussurica, S. yasudai and Savignya sp.) seem to be endemic in the Manchurian Region. Siberia harbours 6 species: S. birostrum, S. borea, S. nenilini, S. zero, S. frontata and S. producta; the first of them reaches Alaska, whereas the ranges of the two latter may be called "western Siberio-European".

Therefore, the richness of the regional faunas of Diplocephalus and Savignya displays distinct gradients along the row Europe-Siberia-Manchuria, which are directed, in the first case, from west to east and, in the second case, from east to west. In this connection the hypothesis can be set up that both genera have genetically been associated with the zone of nemoral broad-leaved forests, the first genus within Europe, and the second one within Manchuria. Later both have faced, during their trans-Palearctic expansion (eastwards and westwards, respectively), a very considerable barrier in the form of the harsh, boreal environment of Siberia. Penetration of this region has required from the representatives of both genera concerned particular adaptations, which promoted the evolvement of a number of endemic taxa. These adaptations seem to have been profound enough so as to almost prevent subsequent repopulations of nemoral environments, i.e. invasions of Diplocephalus into Manchuria or of Savignya into Europe.

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*In our opinion, the subgeneric rank of Hemistajus seems to be far too overrated; we regard this complex merely as a separate species group, i.e. the barbatus-group.

The role of Siberia as a barrier for dispersal of both Diplocephalus and Savignya is displayed nowadays in the isolation not only of Europe and Manchuria from each other, but also of both of them from the Nearctic. Only 3 species have been recorded from North America: S. birostrum, D. subrostratus, and D. cristatus cristatus. None of them is endemic there, while D. c. cristatus (reported also from New Zealand) seems to have been introduced by man. As another argument in favour of the above hypothesis implying the faunal connection between Europe and Manchuria to have been established due to a direct pathway through boreal Siberia may be quoted the complete absence in the genera under study of Euro-Manchurian disjunctions relatively common in spiders (s. ESKOV 1987).

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