

Notes on the spider genus *Styloctetor* Simon, 1884 and some related genera, with description of two new species from Siberia (Aranei: Linyphiidae)

Заметки о роде *Styloctetor* Simon, 1884 и некоторых других близких родах с описанием двух новых видов из Сибири (Aranei: Linyphiidae)

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КЛЮЧЕВЫЕ СЛОВА: таксономия, пауки, линифиды, *Styloctetor*, новые виды.

ABSTRACT: The spider genus *Styloctetor* Simon, 1884 is revalidated as being composed at least of eight species, two of these described as new: *S. lehtineni* sp.n. (the Polar Urals, West Siberia, Baikal Lake) and *S. tuvinensis* sp.n. (Tuva, South Siberia). Taxonomic remarks on *Styloctetor* and some related genera are given.

РЕЗЮМЕ: Род *Styloctetor* Simon, 1884 ревалидизирован и состоит не менее чем из восьми видов, два из которых описаны как новые для пауки: *S. lehtineni* sp.n. (Полярный Урал, Байкал) и *S. tuvinensis* sp.n. (Тува). Приведены таксономические заметки о роде *Styloctetor*, обсуждено его положение среди близких родов.

Introduction

Like any highly diverse, widespread and complex group of organisms, the great spider family Linyphiidae is still endowed with numerous taxonomic problems. Thus, the relationships between *Ceratinopsis* Emerton, 1882, *Ceratinella* Emerton, 1882, *Styloctetor* Simon, 1884, *Anacotyle* Simon, 1926, *Grammonota* Emerton, 1882 and *Ceraticelus* Simon, 1884 have repeatedly been discussed in the literature [Merrett, 1963; Wunderlich, 1970, 1987; Millidge, 1977, 1985; etc.]. The close relations are revealed from the basically same type of embolic division, i.e. the elongate and curved radix and the long, spiraling embolus with the distal part turning backwards into a coil.

Wunderlich [1970: 406] has proposed to consider *Anacotyle*, *Styloctetor*, *Micrargus* Dahl, 1886 and *Nothocyba* Simon, 1926 as junior synonyms of

Ceratinopsis, but he did not formalize this synonymy. Later, Wunderlich [1987: 25, 26] did officially sink *Ceratinopsis*, *Ceratinella*, *Anacotyle* and *Styloctetor* as junior synonyms, but this time under *Sphecozone* O. Pickard-Cambridge, 1870. The pairs of synonyms *Styloctetor*=*Anacotyle* and *Micrargus*=*Nothocyba* have caused no objections. Furthermore, most arachnologists have accepted, at least in part, Wunderlich's [1970] earlier opinion and started treating all representatives of *Styloctetor* within *Ceratinopsis*. However, the synonymization of *Ceratinopsis* and *Ceratinella* under *Sphecozone* has been rejected virtually by all specialists. Nor has the synonymy found support of the *Ceratinopsis* and *Ceratinella* pair, both names concerned still being considered as two different though also very closely related genera.

So the present-day taxonomic situation is as follows. *Nothocyba* has been synonymized with *Micrargus* (which, in our opinion, is incorrect), *Ceratinopsis* has incorporated *Styloctetor* (= *Anacotyle*), *Ceratinella* and *Sphecozone* are treated as separate genera, while the latter, due to the reduced paracymbium and the somewhat different shape of the embolic division, is somewhat isolated from such definitely close relatives as the *Ceratinopsis*, *Ceratinella* and *Styloctetor* trio.

It is commonplace that any generic-level synonymization ought be based solely upon an evaluation of the degree of similarity/dissimilarity of their respective type-species, neither just "typical" nor widespread members which frequently turn out to actually represent other genera (for example, let us recall *Erigone* Savigny et Audouin, 1825, cf. Millidge [1985, 1988]). Defining natural groups of congeners

is the essence of a taxonomic revision. *Ceratinopsis* does badly require one. Yet the present article is by far more modest in its objectives, as a complete revision would imply a reassessment of the entire complex of closely related genera: *Ceratinopsis* (including *Styloctetor* + *Anacotyle*), *Ceratinella*, *Grammonota*, *Sphecozone* and *Ceraticelus*, i.e. more than 200(!) species. Instead, this paper deals only with *Styloctetor*, the type-species of which, *inuncans* Simon, 1884 (= *romana* (O. Pickard-Cambridge, 1872)), is, to our mind, congeneric with neither the type-species of *Ceratinopsis* (*C. interpres* O. Pickard-Cambridge, 1874) nor with the type-species of any other genus mentioned above. This together with the pronounced homogeneity of the genus allow us to treat *Styloctetor* as a separate, revalidated genus.

Material and Methods

Material serving as the basis for this contribution covers much of the Holarctic and has been accumulated for study during the last few years, chiefly due to the efforts of the senior author.

The following abbreviations have been accepted in the text: ZMMU — Zoological Museum of the Moscow State University (Moscow, Russia), IBPN — Institute of Biological Problems of the North (Magadan, Russia), ZMUT — Zoological Museum of the Turku University (Turku, Finland), HMNH — Hungarian Museum of Natural History (Budapest, Hungary).

The chaetotaxy formula such as 1.1.1.1 refers to the number of dorsal spines on tibia I–IV, respectively. TmI — position of the trichobothrium on tibia I. The sequence of leg segments in measurement data is as follows: femur + patella + tibia + metatarsus + tarsus. All measurements are given hereinafter in mm.

Type material has been deposited in the collection of the ZMMU and ZMUT, while non-type material shared between IBPN and ZMUT.

Styloctetor Simon, 1884, gen. revalid.

TYPE-SPECIES: *Styloctetor inuncans* Simon, 1884 (= *Erigone romanus* O. Pickard-Cambridge, 1872), by subsequent designation.

Syn.: *Anacotyle* Simon, 1926: type-species: *Erigone stativa* Simon, 1881, by subsequent designation.

The genus *Styloctetor* as we conceive of it is composed at least of eight very closely related species differing only in some minor details of structure of the copulatory organs, mainly the palpal tibial apophysis in the male and the shape of the anterior epigynal plate in the female.

Species included: *romana* O. Pickard-Cambridge, 1872, *austera* (L. Koch, 1876), *stativa* (Simon, 1881), *okhotensis* (Eskov, 1993), **comb.n.**, *logunovi* (Eskov & Marusik, 1994), **comb.n.**, *purpurescens* (Keyserling, 1886), **comb.n.**, all three **comb.n.** ex *Ceratinopsis*, as well as two species described as new: *lehtineni* and *tuvinsensis* spp.n. In addition, it seems quite possible that *Ceratinella acerea* Chamberlin & Ivie, 1933, a species

known only from the female sex from Utah, U.S.A., actually belongs to *Styloctetor*, too.

PHYLETIC RELATIONS. As noted above, *Styloctetor* seems particularly close to both *Ceratinopsis* and *Ceratinella*. However, when compared to *Ceratinopsis*, representatives of *Styloctetor* display a relatively thick embolic division, the embolic loop is much wider, and the embolic division as a whole looks more compact, not extending into an elongate spindle; the epigyne is distinctly divided into two plates: a large anterior and a smaller posterior one.

Styloctetor differs from *Ceratinella* by the lower degree of sclerotization of the body tegument, the shorter coil of the embolus, the lack of additional scutellum-like structures near the epigyne, as well as usually by the lack both of trichobothria IV and of a dorsal abdominal scutum. However, there are exceptions in both *Ceratinella* and *Styloctetor* as regards the last feature: *C. brevipes* (Westring, 1851) has no dorsal abdominal scutum, while *S. tuvinensis* sp.n. has it. This fact once again demonstrates the close relations existing between these taxa, i.e. a similar evolutionary process in allied phyletic lineages.

Two species-groups can be recognized in *Styloctetor*, each differing in the shape of the anterior plate of the epigyne. The *romana*-group encompasses *romana*, *lehtineni*, *logunovi* and *purpurescens*, the latter species being intermediate between both groups. These species share an arrow-shaped anterior plate of the epigyne (s. Figs 10–12). The species joining the *austera*-group are *austera*, *stativa*, *okhotensis* and probably also *tuvinsensis* sp.n. (the latter is known from the male sex only); they all share a more or less rounded anterior plate of the epigyne (s. Figs 13, 14). There is already a name available for this species-group: *Anacotyle* with *stativa* as the type-species.

DISTRIBUTION. *Styloctetor* is a fraction of the huge Nearctic-Neotropical group of such very closely related genera as *Ceratinopsis*, *Ceratinella*, *Grammonota*, *Sphecozone* and *Ceraticelus* which has entered the Palaearctic but failed to secondarily radiate there as strongly as the above genera in the Americas. Of the eight *Styloctetor* species, two are widespread: trans-Palaearctic (*romana*) or circum-Holarctic (*stativa*, if the synonymy of *obscura* Emerton, 1919 = *stativa* Simon, 1881 is correct, cf. Wunderlich [1970]). *S. okhotensis* is distributed in northeastern Siberia, *logunovi* in South Siberia, including Mongolia, while *austera* is endemic to the Alps. Each of the new species *lehtineni* and *tuvinsensis* is known from a single locality in the Polar Urals and Tuva, respectively, while *purpurescens* from the eastern U.S.A. and Canada.

Styloctetor romana (O. Pickard-Cambridge, 1872)
Figs 4, 11.

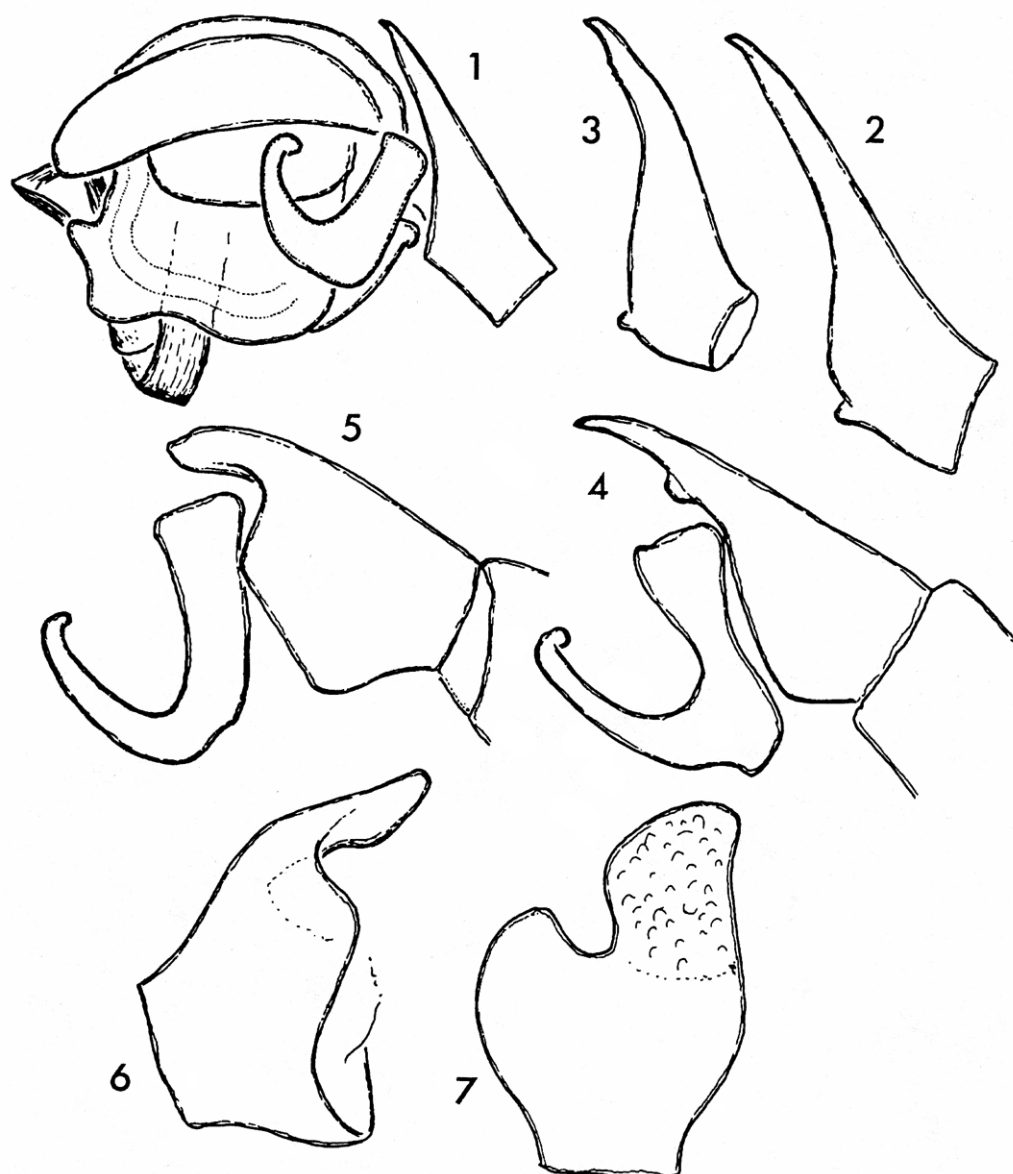
1872 *Erigone romana* O. Pickard-Cambridge, Proc. Zool. Soc. London, 752.

DISTRIBUTION. Trans-Palaearctic [Eskov, 1994]. In Siberia, ranging from Mongolia in the south, the upper reaches of Amguema (Vulvyveem) River in the north, and Chukot Peninsula in the east [Marusik et al., 1994].

Styloctetor logunovi (Eskov & Marusik, 1994),
comb.n.

Figs 1–3.

1994 *Ceratinopsis logunovi* Eskov & Marusik: 42 (for 1993).



Figs 1–7. Details of male palp structure: 1, 2 — *Styloctetor logunovi* (Naryn River, Tuva), 3 — *S. logunovi* (?) (Shuurmak, Tuva), 4 — *S. romana* (The Netherlands), 5–7 — *S. stativa* (Sweden): 1 — left palp; 2, 3, 6, 7 — palpal tibia (6 — prolateral view, 7 — dorsal view); 4, 5 — palpal tibia with paracymbium.

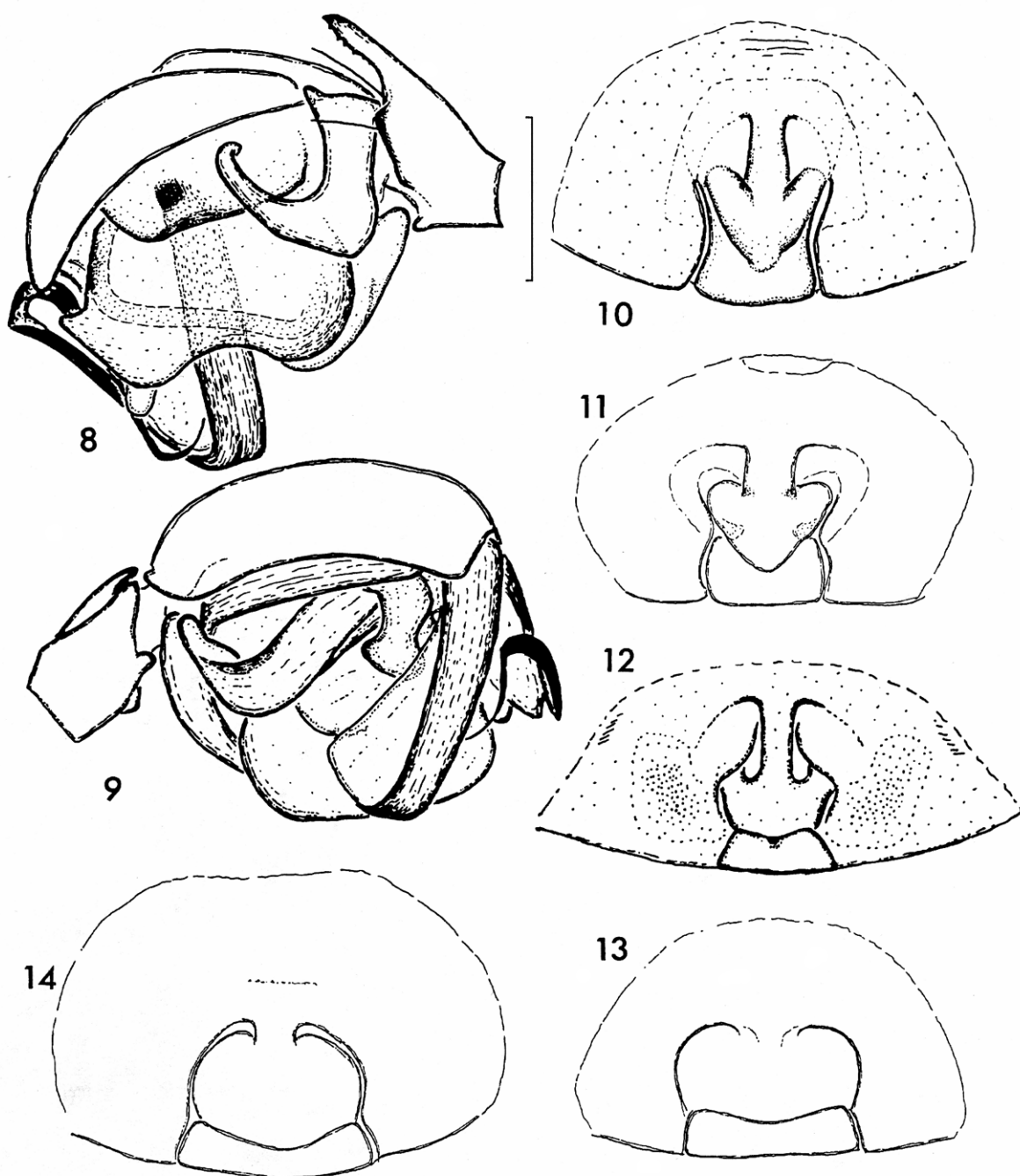
Рис. 1–7. Детали строения пальп: 1, 2 — *Styloctetor logunovi* (р. Нарын, Тува), 3 — *S. logunovi* (?) (Шуурмак, Тува), 4 — *S. romana* (Нидерланды), 5–7 — *S. stativa* (Швеция): 1 — левая пальпа; 2, 3, 6, 7 — голень пальпы (6 — пролатерально, 7 — дорсально); 4, 5 — голень пальпы с парацимбиумом.

New records: MONGOLIA, 1♀ (Nr. 1089, HMNH), Ubsunur Aimak: 54 km W of Somon Ondorchangaj, foothills of Chanchochij ul, 1640 m, felsig-steiniges stark zerklüftetes Hügelland mit Wustensteppen-Vegetation. soil and under stones, 10.VII.1968, leg. Ode; 1♂, 4♀♀ (HMNH), different localities in Mongolia, 1979, leg. P. Gajdos; 1♂ (IBPN), Omnogov Aimak, Khurmen Somon, Gurvan Saikhan Mt. Ridge, 43°29'N, 104°04'E, 2300 m, 27.V.1997, leg. Y. Marusik; 14♂♂ & 8♀♀ (IBPN), Bayandalai Somon, Zoolen uul (Mt. Ridge), 43°21'N, 103°11'E, 1700 m, 27–30.V.1997, leg. Y. Marusik; 4♂♂, 8♀♀ (IBPN), Noyon Somon, Noyon uul (Mt. Ridge), 1900 m, 30–31.V.1997, leg. Y. Marusik; 1♀ (IBPN), Bayanhongor Aimak, Bayanlig Somon, Bor-Tolgoi, 44°06'N, 100°56'E, 1400 m, 2–4.VI.1997, leg. Y. Marusik. RUSSIA, 4♂♂, 1♀ (IBPN), SE Tuva, upper flow of Naryn River, 50°13'N, 96°15'E, 1820–1900 m, 24–26.VI.1996, leg. Y. Marusik;

1♂, 1♀ (IBPN), Khorumnug-Taiga Mt. Ridge, Shuurmak Creek, 50°44'N, 95°19'E, ca. 1100 m, 20–22.VI.1996, leg. Y. Marusik; 1♀ (IBPN), 20–25 km W of Erzin, Onchalaan Rocks, 50°16'N, 94°54'E, 1250 m, VI.1995, leg. S. Koponen; 1♂ (ZMUT), Eastern Tannu-Ola Mts., S slopes, dry stony steppe, 50°45'N, 94°23'E, 1300 m, VI.1995, leg. S. Koponen.

REMARKS. The specimens from Tuva have two different sizes/shapes of the male tibial apophysis (cf Figs 2 & 3), and it seems probable that the specimen from Shuurmak (Fig. 3) belongs to another species.

DISTRIBUTION. From the southern part of the Krasnoyarsk Prov. to Mongolia in the south. Previously known from Tuva and the Krasnoyarsk Prov. only [Eskov, 1994]. The first record in Mongolia!



Figs 8–14. Copulatory organs of *Styloctetor lebtineni* sp.n. (8, 9, holotype; 10, paratype), *S. romana* (11, The Netherlands), *S. logunovi* (12, paratype, Magadan Area), *S. okhotensis* (13, Magadan Area), and *S. stativa* (14): 8, 9 — left palp, 10–14 — epigyne, ventral view.
Рис. 8–14. Копулятивный аппарат *Styloctetor lebtineni* sp.n. (8, 9, голотип, 10, паратип), *S. romana* (11, Нидерланды), *S. logunovi* (12, паратип, Магаданская обл.), *S. okhotensis* (13, Магаданская обл.) и *S. stativa* (14): 8, 9 — левая пальпа, 10–14 — эпигина (вид снизу).

Styloctetor purpurescens (Keyserling, 1886),
comb.n.

1886 *Erigone purpurescens* Keyserling, Die Spinnen Amerikas. Theridiidae. II. Hälfte. Nürnberg, 2 (2): 187.

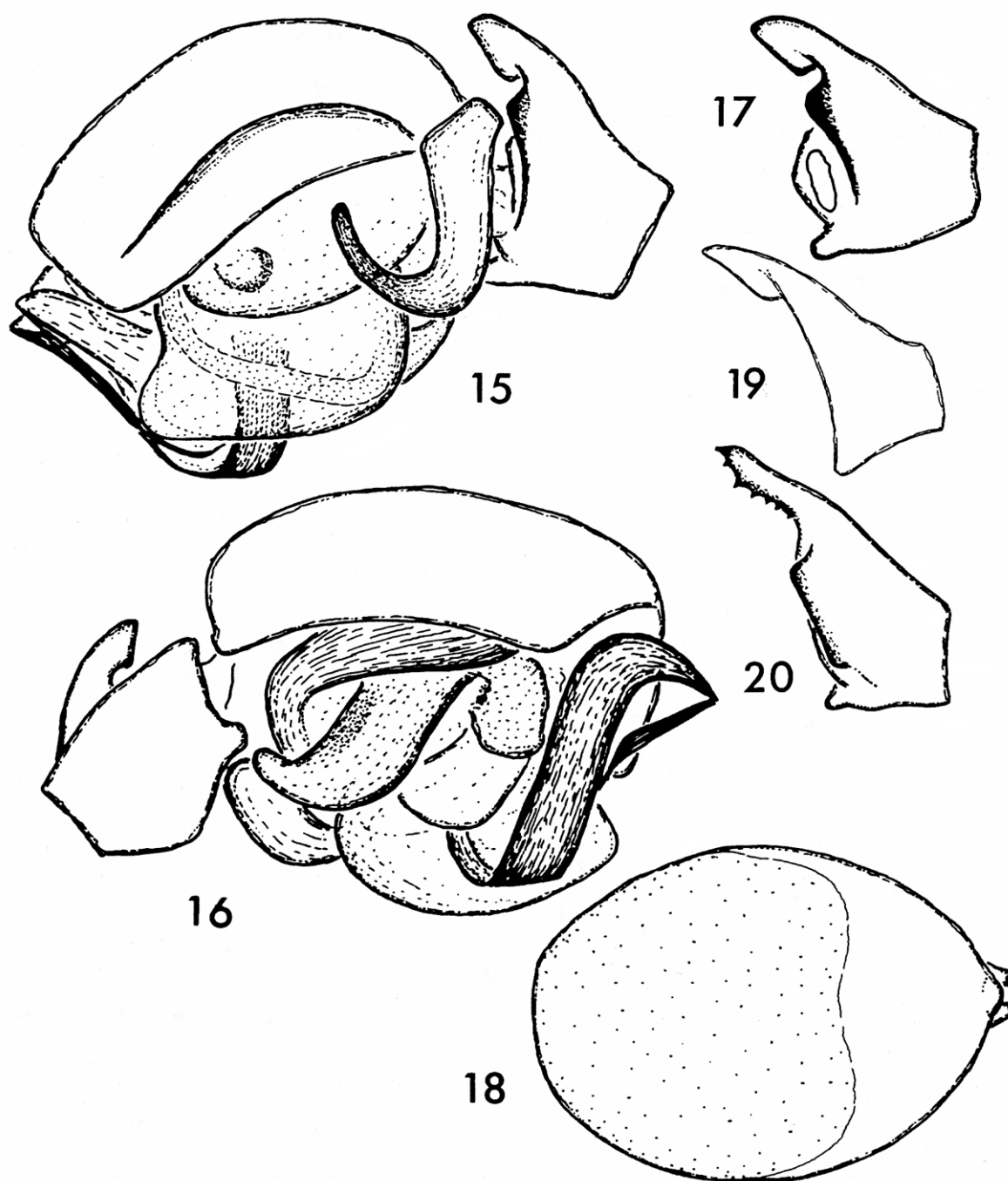
Figures see in Bishop & Crosby, 1933: Pl. V (♂, ♀)

REMARKS. Close to *okhotensis* (Eskov, 1993), distributed in the eastern U.S.A.: Massachusetts, Connecticut, New York, New Jersey, Ohio, Maryland, North

Carolina, Kentucky, Missouri, District of Columbia, Georgia, Wisconsin, and Canada: Ontario (D. Buckle, personal communication).

Styloctetor stativa (Simon, 1881)
Figs 5–7, 14.

1881 *Erigone stativa* Simon, Bull. Soc. zool. Fr., 6: 256.



Figs 15–20. Details of structure of *Styloctetor tuvinensis* sp.n. (15–18, holotype), *S. okhotensis* (19, paratype, Magadan Area) and *S. lehtineni* sp.n. (20, holotype): 15, 16 — left palp; 17, 19, 20 — palpal tibia; 18 — abdomen, dorsal view.

Рис. 15–20. Детали строения *Styloctetor tuvinensis* sp.n. (15–18, голотип), *S. okhotensis* (19, паратип, Магаданская обл.) и *S. lehtineni* sp.n. (20, голотип): 15, 16 — левая пальпа; 17, 19, 20 — голень пальпы; 18 — брюшко (вид сверху).

New records: RUSSIA, 1 ♀ (IBPN), Tuva, 15 km E of Kyzyl, Kaa-Khem River, 51°43'N, 94°42'E, 800–1200 m, 16–18.VI.1996, leg. Y. Marusik; 1 ♀ (IBPN), SE Tuva, middle flow of Naryn River, 50°12'N, 95°39'E, 1540 m, 22–24.VI.1996, leg. Y. Marusik. CANADA, 1 ♀ (IBPN), Yukon Territory, Kluane Lake, Cultus Bay, 138°20'W, 61°11'N, Rat Lake, pebbly NW bank, 23.VII.1993, leg. Y. Marusik. U.S.A., ALASKA, 1 ♂ (IBPN), Fairbanks, spruce forest

with *Calluna*, 25.VII.1993, leg. Y. Marusik; 1 ♀ (IBPN), 25 km E of Fairbanks, Moose Creek, steppe slope and around, 3&25.VII.1993, leg. D.I. Berman & Y. Marusik.

DISTRIBUTION. Circum-Holarctic [Eskov, 1994], in Siberia up to the upper reaches of Anadyr River in the north, Chukot Peninsula [Marusik et al., 1992], Alaska, Yukon Territory [Dondale et al., 1997].

Styloctetor austera (L. Koch, 1876)

1876 *Erigona austera* L. Koch, Zeitschr. Ferdinandeum, Innsbruck, (3) 19: 239.

Figures see in Thaler, 1970: 267 (♂, ♀)

REMARKS. Close to *stativa* and treated earlier as *Anacotyle*. Transferred to *Styloctetor* by Thaler [1970]. Endemic to the Alps.

Styloctetor okhotensis (Eskov, 1993), **comb.n.**
Figs 13, 19.

1989 *Ceratinopsis orientalis* Eskov: 106.

1993 *Ceratinopsis okhotensis* Eskov in Marusik et al., Arthropoda Sel., 1 (4): 74 (for 1992) (nom.n. pro *Ceratinopsis orientalis* Eskov, 1989, preoccupied by *Ceratinopsis orientalis* Locket, 1982).

New records: RUSSIA, 1 ♂, 1 ♀ (IBPN), Magadan Area, Lankovaya River (152°E, 59°45'N), Ola River basin, 12–19.VIII.1992, leg. Y. Marusik.

DISTRIBUTION. Earlier known from the upper flow of Kolyma River, the environs of Magadan and the Okhotsk Distr. [Eskov, 1989; Marusik et al., 1992].

Styloctetor lehtineni **sp.n.**
Figs 8–10, 20.

NAME. Honors the well-known Finnish arachnologist, Dr. Pekka T. Lehtinen, the collector of this species.

Holotype ♂ (ZMUT): RUSSIA, Polar Urals, Sob River, Krasnyi Kamen, 200 m, 66°55'N, 65°40'E, sandy field and stony bed (herbs), 5.VII.1994, leg. P.T. Lehtinen. Paratype: ♀ (ZMUT), same date and locality, together with holotype; 1 ♂, 1 ♀ (ZMMU), Irkutsk Area, Baikal Lake, north part of west coast, Cape Yelokhin, stony beach, under stones, 26.V.1988, leg. S. Danilov; 1 ♀ (ZMMU), Baikal Lake, Begul Bay, 10.VII.1993, leg. S. Danilov; 2 ♂♂, 2 ♀♀ (ZMMU), Begul Bay, stony steppe, under stones, 8.VII.1993, leg. S. Danilov; 1 ♀ (ZMMU), Baikal Lake, Umkhei Valley, mixed forest, on *Padus*, 10.VI.1995, leg. S. Danilov.

DIAGNOSIS. The new species is distinguishable by the shape of the tibial apophysis of the male palp, as well as by the proportions of the arrow-shaped plate of the epigyne.

DESCRIPTION. Male: Total length 2.05. Carapace unmodified, 0.90 long, 0.60 wide, grayish-brown, with a dark median polygonal spot. Posterior median eyes separated slightly more than their diameter. Chelicerae 0.30 long, anterior margin with four teeth, posterior with two very poorly distinguishable teeth. Legs pale brown. Leg I 2.03 long (0.58 + 0.20 + 0.48 + 0.43 + 0.34), IV 2.41 long (0.65 + 0.23 + 0.60 + 0.55 + 0.38). Chaetotaxy 1.1.1.1, tibial spines equal or somewhat longer than tibial diameter. Mt I–III with, Mt IV without trichobothrium. TmI 0.47. Palp (Figs 8, 9, 20) with an elongate and serrate tibial apophysis. Abdomen 1.30 long, 0.80 wide, dark grey.

Female: Total length 2.03. Carapace 0.80 long, 0.63 wide. Chelicerae 0.30 long, anterior margin with four teeth, posterior with three small teeth. Posterior median eyes separated by less than 1.5 of their diameter. Leg I 2.07 long (0.60 + 0.20 + 0.50 + 0.43 + 0.34), IV 2.49 long (0.70 + 0.23 + 0.60 + 0.58 + 0.38). Tibial spines slightly longer than tibial diameter. TmI 0.46. Abdomen 1.23 long, 0.75 wide. Epigyne as in Fig. 10, with an arrow-shaped anterior plate. Body and leg coloration, chaetotaxy as in male.

REMARKS. The new species is extremely closely related to both *C. romana* and *C. logunovi*. From the former it can be separated by the shape of the tibial apophysis and the number of teeth on the apophysis. *C. romana* has one tooth on the apophysis and a serrate row of poorly visible, small teeth not shown in the figure, while the new species has 6–7 distinct teeth (smaller than the big tooth of *C. romana* but bigger than the small one). While the paracymbium of both species compared are subequal in shape, its proximal part in the new species is about twice wider. The female of the new species differs by the thinner and more strongly elongate anterior epigynal plate, the tip of the plate being more strongly sharpened. From *C. logunovi*, the new species can be distinguished by the shorter tibial apophysis and more distinct teeth. The female of *C. logunovi* has a thinner stem of the epigynal plate and a non-sharpened tip of the "arrow".

Styloctetor tuvinensis **sp.n.**
Figs 15–18.

NAME. The specific epithet is an adjective referring to the terra typica of this species.

Holotype ♂ (ZMMU): RUSSIA, SE Tuva, near Lake Ubsunur, Irbitei River Valley, 50°44'N, 93°08'E, 13–16.VI.1995, leg. Y. Marusik.

DIAGNOSIS. The new species can easily be distinguished from other congeners by the presence of a dorsal scutum on the male abdomen.

DESCRIPTION. Male: Total length 1.58. Carapace unmodified, 0.68 long, 0.50 wide, dark brown. Posterior median eyes separated by about their diameter. Chelicerae 0.25 long, anterior margin with two relatively large teeth, posterior margin with two very small teeth. Legs grayish-brown. Leg I 1.62 long (0.45 + 0.18 + 0.38 + 0.33 + 0.28), IV 1.72 long (0.48 + 0.18 + 0.43 + 0.38 + 0.25). Chaetotaxy 1.1.1.1, tibial spines strongly reduced, poorly visible. Mt I–III with, Mt IV without trichobothrium. TmI 0.46. Palp as in Figs 15–17. Abdomen 0.93 long, 0.68 wide, almost black, about 3/4 dorsum covered with a scutum (Fig. 18).

Female unknown.

REMARKS. It seems probable that at least the females from Tuva identified by previous authors as *C. stativa* actually belong to the above new species. Yet until both sexes are found in the same sample, it will be impossible to match them. The new species is close to *C. okhotensis*, but is can easily be distinguished by the presence of a dorsal abdominal scutum in the male, as well as by the blunt tip of the tibial apophysis and the well developed retrolateral tibial ridge.

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