

Review of the genus *Chaetosiphella* Hille Ris Lambers, 1939 (Hemiptera, Aphididae: Chaitophorinae)

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The genus *Chaetosiphella* Hille Ris Lambers, 1939 is discussed. *Chaetosiphella stipae* Hille Ris Lambers, 1947 is redescribed (apterous viviparous female) and its subspecies *C. stipae setosa* subsp. nov., (apterous viviparous female, oviparous female and apterous male) is described and figured in detail on the basis of specimens collected from *Calamagrostis argentea*, *Calamagrostis arundinacea* and *Stipa* sp. in France. A new species, *Chaetosiphella longirostris* sp. nov., is described and figured in detail on the basis of specimens collected from *Ammophila arenaria* in Portugal. A key to the identification of the species of the genus *Chaetosiphella* as well as differences from related species are given. Notes about distribution and host plants are shown.

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Introduction

Chaetosiphella Hille Ris Lambers, 1939 is a small genus belonging to the tribe Siphini (Aphididae: Chaitophorinae) which comprises 4 species: *C. berleseii* (del Guercio, 1905), *C. stipae* Hille Ris Lambers, 1947, *C. tshernavini* (Mordvilko, 1921) (Blackman & Eastop 2006) and *C. massagetica* Kadyrbekov, 2005.

Genus *Chaetosiphella* is little studied (Mamonova 1959; Richards 1972; Ivanovskaya 1977; Heie 1982; Szelegiewicz 1985; Nieto Nafria & Mier Durante 1998; Qiao & Zhang 2002). Blackman and Eastop (2006) suggested that the collection of Aphidoidea the British Museum (Nat. Hist.), London, UK, includes some undescribed species of this genus. During the study of the material of *C. stipae*, stored in the collection of BMNH, specimens labelled as "*C. stipae* subsp. *mediteranea*" were found. One of the specimens, collected by R. v. d. Boeck in France (1959), and determined as "*C. stipae* subsp. *mediteranea*" by Hille Ris Lambers is characterized by short, stiletto-shaped an apical segment of rostrum. Similar material, stored in the aphid collection of Mu-

séum National d'Histoire Naturelle, Paris, France collected by G. Remaudiere (1953, 1963, 1969, 1984, 1986) and G. Remaudiere and F. Leclant (1969) in Alpes de Haute Provence, France and determined as *C. stipae*, show that these specimens belong to a new subspecies of *C. stipae*. Moreover, two specimens labelled as "*C. stipae* subsp. *mediteranea*" stored in the collection of BMNH, collected by Ilharco in Portugal (1959), and later determined as *C. stipae* subsp. *mediteranea* by Hille Ris Lambers (F. A. Ilharco, personal communication) are characterized by very long an apical rostral segment. Examination of the material collected at the same locality and determined as *C. stipae* by Ilharco, stored in the Aphid Collection of Estação Agronómica Nacional, Oeiras, Portugal show that these specimens belong to a new species of the genus *Chaetosiphella* whose description is given in this paper.

Material and methods

Material examined. – Lectotype [*Ch. stipae*], Helvetia, Granches/Sievré, 08 VIII 1946, *S. capillata*, leg. D. Stäger, 1 apt viv., Paralectotypes: Helvetia, Granches/

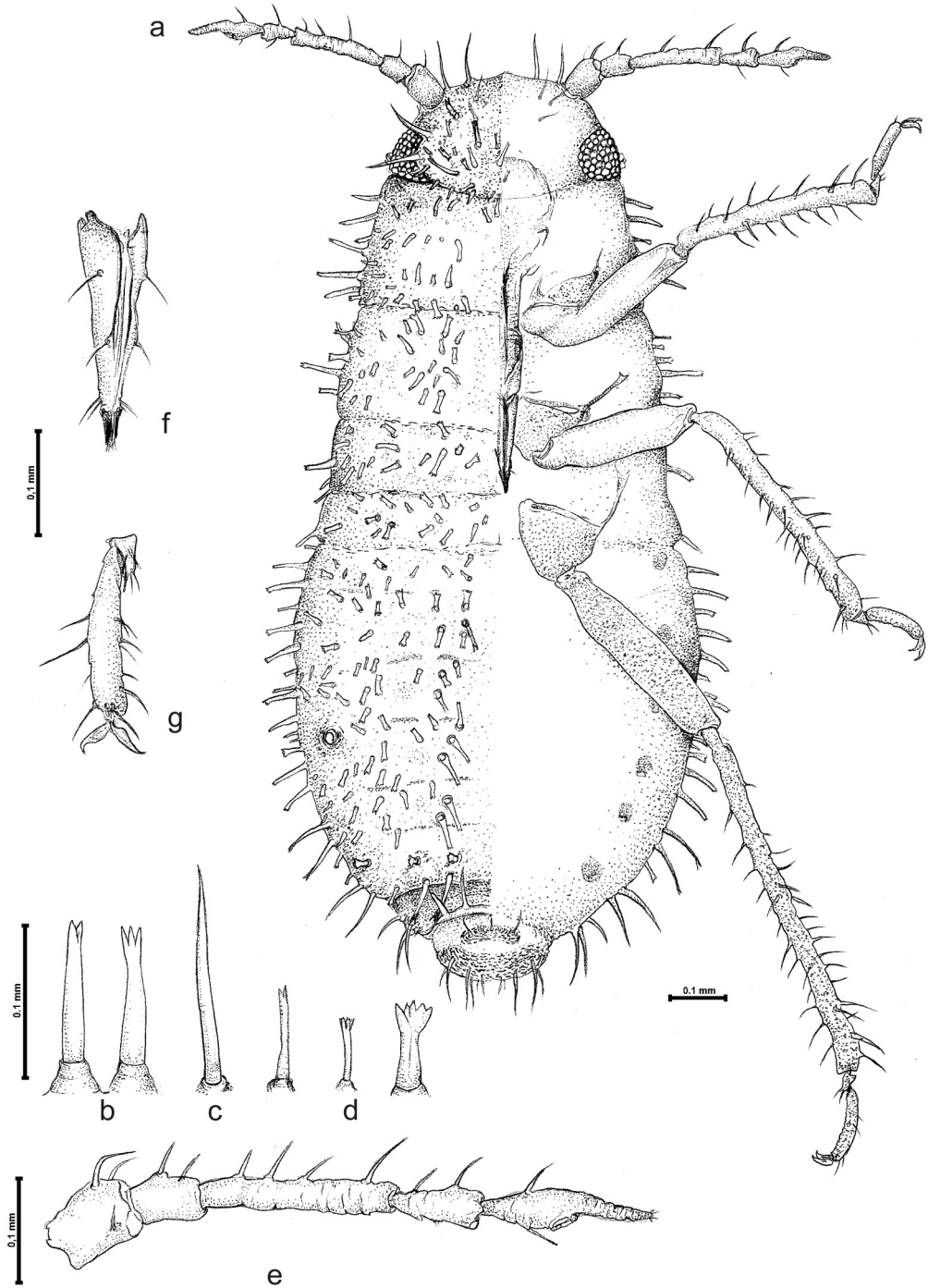


Fig. 1. *Chaetosiphella stipae* s.s. – apterous viviparous female: a. general feature, b. marginal hairs of abdominal segment I-IV, c. marginal hairs of abdominal tergite VII-VII, d. pleural and spinal hairs of abdomen, e. antenna, f. apical segment of rostrum, g. hind tarsus.

Sievre, 08 VIII 1946, *Stipa capillata*, leg. D. Stäger, 1 apt viv., Helvetia, Sion, 12 V 1947, *S. pennata*, leg. D. Stäger, 2 apt viv., Helvetia, Sion, 30 VII 1947, *S. capillata*, leg. D. Stäger, 6 apt viv. (BMNH); Helvetia, Granches, 08 VIII 1946, *S. capillata*, leg. D. Stäger, 2 apt viv., (RMNH)

Other material. – Austria, Leithagebinge, 30 V 1955, Gramineae, leg. H. Franz, 2 apt viv.; Czech Republic, Rana near Louny, 22 VI 1973, *S. capillata*, leg. J. Holman, 1 apt viv.; France, Min. W Canues, 29 III 1959, *Stipa* sp., leg. R. v. d. Boeck, 2 apt. viv. (BMNH), France, La Grave H.A., 25 VIII 1953, *Calamagrostis argentea*, leg. Remaudiere, 10 apt. viv.; France, l'Argentiere, H.A., 13 VIII 1963, *C. argentea*, leg. Remaudiere, 4 apt. viv.; France, M. la Roche de Rame, 1 100 m (H. A.), 22 VI 1969, *C. argentea*, leg. Rem. at Lecl., 8 apt. viv., France, l'Argentiere, 1 000 m H.A., 25 X 1969, *C. argentea*, leg. Remaudiere, 1 ovip.; France, Ayere, 1 500 m, Passy (H.A. Savoie), *C. arundinacea*, X 1984, leg. G. Remaudiere, 3 apt. viv.; France, Durance (H.A.), 15 X 1986, *Calamagrostis* sp., leg. G. Remaudiere, 5 apt. viv., 10 ovip., 8 males; Iran, Shiraz, June 1992, *Stipa* sp., leg. N. Rastegari, 2 apt. viv.; Iran, 25 km east Teheran, 11 VI 1955, *Stipa* sp., 3 apt viv. leg. G. Remaudiere; Spain, Canfranc (Sompart), 29 VIII 1961, *Avena* sp. leg. G. Remaudiere, 5 apt viv.; Turkey, 20 VI 2000, *Stipa* sp., leg. I. Özdemir, 2 apt. viv. (MNHN); Hungary, Budapest, 28 VIII 1965, *S. capillata*, leg. H. Szelegiewicz, 6 apt viv.; Mongolia, Bornur, 1 VIII 1963, *S. capillata*, leg. H. Szelegiewicz, 9 apt viv., Mongolia, Zunchara, 3 VIII 1963, *S. capillata*, leg. H. Szelegiewicz, 11 apt viv. (ZMPA); Portugal, Peniche, *Ammophila arenaria*, 6 apt. viv. (CAEAN); Spain, Puerto de Navalmaral, 6 VI 1981, *S. gigantea*, leg. Nieto Nafria, 1 al. viv., Spain, Bayubas, 19 VI 1983, *S. pennata* subsp. *eriocaulus*, leg. Nieto&Muñoz, 7 apt viv., Spain, Huesca, Puerto de Cotefablo, 1 VII 1989, Gramineae, leg. Nieto&Mier Durante, 3 apt viv. (UL);

C. bertlessei: Holland, Bennekom, 24 VI 1952, *Corynephorus canescens*, leg. V.E. Eastop, 3 apt viv.; Suecia, Arvidsjaur, 23 VII 1955, *Aira flexuosa*, leg. Ossiannilsson, 4 apt viv. (BMNH); France, Gironde Cap (dunes), 26 IX 1954, *Festuca arenaria*, leg. G. Remaudiere, 6 apt. viv. (MNHN); Holland, Wageningen, VI 1938, *A. flexu-*

osa, leg. D. Hille Ris Lambers, 4 apt. viv. Wageningen, VI 1938, *A. flexuosa*, leg. D.Hille Ris Lambers, 4 apt. viv. (RMNH); Poland, Dajtki distr. Olsztyn, 6 IX 1966, *F. rubra*, leg. H. Szelegiewicz, 1 apt. viv. (ZMPA).

C. tshernavini: Czech Republic, Kovacov (Sturovo), 31 VIII 1960, *Festuca* sp., leg. D.H.R.Lambers, 2 apt viv.; Germany, Rostock, 5 IX 1961, *Festuca ovina*, leg. F.P.Muller, 2 apt. viv. (BMNH); Poland, Olsztyn-Kortowo, 13 IX 1966, *C. canescens.*, leg. S. Huculak, 2 apt. viv. (ZMPA).

Measurements are given in mm (Table 1-5).

Abbreviations

- BMNH The Natural History Museum, London, UK
- MNHN Muséum National d'Histoire Naturelle, Paris, France
- RMNH Nationaal Natuurhistorisch Museum, Leiden, The Netherlands
- UL University of Leon, Leon, Spain
- CAEAN Estação Agronómica Nacional, Oeiras, Portugal
- ZMPA Zoological Institute, Polish Academy of Sciences, Warsaw, Poland

Taxonomic part

Chaetosiphella stipae Hille Ris Lambers, 1947:329-330

(Fig. 1)

Atheroides stipae Börner, 1950:3

C. stipifolii Bozhko, 1959:23

C. pamirica Narzikulov, 1970:360-362

Type material. – Lectotype, hereby designated: Helvetia, Granches/Sievre, 08 VIII 1946, *S. capillata*, leg. D. Stäger, 1 apt viv., Paralectotypes: Helvetia, Granches/Sievre, 08 VIII 1946, *Stipa capillata*, leg. D. Stäger, 1 apt viv., Helvetia, Sion, 12 V 1947, *S. pennata*, leg. D. Stäger, 2 apt viv., Helvetia, Sion, 30 VII 1947, *S. capillata*, leg. D. Stäger, 6 apt viv. (BMNH); Helvetia, Granches, 08 VIII 1946, *S. capillata*, leg. D. Stäger, 2 apt viv., (RMNH).

Table 1. *Chaetosiphella stipae* s.s.- measurements of apterous viviparous female (lengths). 1-4 type slide.

no.	body	antenna	antennal segments			apical segment of rostrum	hind tarsus
			III	IV	V:(Va+Vb)		
1	1.92	0.51	0.17	0.07	0.085+0.06	0.20	0.15
2	1.85	0.52	0.18	0.09	0.08+0.075	0.21	0.13
3	1.49	0.46	0.15	0.06	0.06+0.06	0.19	0.14
4	1.79	0.50	0.19	0.055	0.07+0.05	0.17	0.15
5	2.09	0.57	0.23	0.06	0.075+0.08	0.20	0.16
6	1.75	0.57	0.20	0.06	0.08+0.08	0.22	0.17
7	1.89	0.50	0.19	0.06	0.07+0.08	0.20	0.15

Redescription. – apterous viviparous female (Fig. 1a). *Coloration of live specimens.* – black; pigmentation when mounted: dark brown, antennal segment II and III, tibiae, cauda pale, antennal segment Va, tarsi and hind legs black or light brown, antennal segment I, IV i V, femora and hind legs black. Body pear-shaped, 1.49-2.09 mm long and 0.72-0.98 mm width. Head and prothorax not fused. Abdominal tergites sclerotized, II-VII fused, without visible sculpture. Proportion of thorax segments I:II:III- 0.27:0.20:0.15; head + thorax + I abdominal segment as long as abdominal segment II-VIII. Dorsal chaetotaxy: setae numerous, placed on wart-like bases which look like perforations of the dark sclerite. Thorax with forked 0.075-0.10 mm long and jagged 0.05-0.075 mm long hairs. Abdominal hairs arrange in three rows—marginal hairs of segment I-VI 0.10-0.12 mm long, with forked and jagged apices (Fig. 1b); segment VII and VIII with pointed 0.10-0.15 mm long hairs (Fig. 1c). Pleural and spinal hairs with forked and jagged apices, 0.05-0.075 mm long; among them numerous, short, fan-shaped hairs 0.025-0.03 mm long (Fig. 1d); segment VII with longest, forked hairs 0.10-0.12 mm long; segment VIII with simple, pointed 0.10-0.15 mm long hairs. Head chaetotaxy: pointed, thorn-like, 0.10-0.15 mm long hairs on the apex and the margin of the head; towards to the mid of the head two rows of forked hairs 0.05-0.08 mm long; among them numerous hairs with forked or fan-shaped apices. Antenna (Fig. 1e) short, reaching just to anterior margin of mesothorax, 5-segmented, about 0.26-0.40 times the body length. Processus terminalis (Vb) about 0.7-1.6 times the base (Va); other antennal ratios are: Vb : III 0.35-0.60; V : III 0.64-1.25; V : IV 1.25-2.70. Antennal chaetotaxy: I segment with 3 hairs, II segment with 2-3 hairs, III segment with 3-5 hairs, IV segment with 2 hairs, Va with 2 hairs—one of them on the inner margin of the base, close to the secondary rhynarium, second opposite to the first one; at the tip of the processus terminalis 4 small sense-hairs. Antennal hairs about 0.025-0.05 mm long; the longest antennal hair III about 2.0 times the basal articular diameter of this segment. Antennal hairs pointed, sometimes hairs on segments I, II or III with forked apices (specimens from Mongolia and Spain). Frons convex. Eyes normal, ocular tubercles usually distinct. Rostrum long, reaching to hind coxae with an apical segment (RAS) (Fig. 1f) stiletto-shaped, 0.17-0.20 mm long, 0.75-1.58 times III

antenna segment and 1.10-1.50 times II segment of hind tarsus (II HT), with 2 accessory hairs. Hind legs long, about 1.1-1.24 mm, black, hairy, some hairs on legs with forked apices. I tarsal segments with 5 hairs, empodial hairs spatulate (Fig. 1g). Siphunculi pore-shaped, placed at anterior margin of V abdominal segment, 0.025 mm in basal diameter. Cauda broadly rounded, 0.1-0.12 mm width, with 3 0.08-0.10 mm long hairs.

Geographical Distribution (Fig. 6). – Austria (Leithagebige: BMNH Collection); China (Qiao & Zhang 2002:760); Czech Republic (Rana near Louny: BMNH Collection, Devin: Holman 1995:5); Germany (Mittelrhein: Börner 1950:3, Börner 1952:55); Hungary (Budapest: Szelegiewicz 1968:15, Zamardi, Fülöphaza: Szelegiewicz 1977:93-94); Iran (Shiraz, near Teheran: MNHM Collection); Italy (Gressan, Val d'Aoste, Laatsch, Vintschgau: Jorg & Lampel 1988:53-54, Gressan, Laatsch: Jorg & Lampel 1990:354, Barbagallo et al. 1995:21); Kazakhstan (Tarbagatay submountain region: Juchnevitch 1968:69); Mongolia (near Bornur: Holman & Szelegiewicz 1972:11); Poland (Pamięcin near Ślubice: Szelegiewicz 1985:51, Wieczorek 2006-2007: 23); Russia (Shaposhnikov 1964: 544, West Siberia-Petropavlovsk, Kulundynski Steppe (Kluci), Altay Mts., Kosh-Agacz, Tashan-Tu: Ivanovskaya 1977:244-245); Spain (Soria: Muñoz Martínez & Nieto Nafria 1986:376, Avila, Huesca, Zamora, Zaragoza: Nieto Nafria et al. 1998:357-358); Switzerland (Granges near Sievre, *Locus Typicus*: Hille Ris Lambers 1947: 329-330, Sion, Tourbillon, Mont d'Orge, Saillon, Raron, Heidnischbiel, Martigny, La Batiaz, near Branson: Jorg & Lampel 1988:53-54, Martigny, Saillon, Mont d'Orge, Sion, Raron: Jorg & Lampel 1990: 354, Lampel & Meier 2003: 151) Tajikistan (Pamir Mts.-Badahsanky District: Narzikulov 1970:360-362); Turkey (Ümitköy: Özdemir et al. 2005:98); Ukraine (Kercenskij Peninsula: Mamontova 1959:69).

Host Plant. – *Stipa capillata* L., *S. dasphylla* (Lindem.) Czern. ex Trautv., *S. gigantea* Link, *S. joannie* Celak s.s., *S. kirghisorum* P.Smirn., *S. pennata* L., *S. sibirica* (L.) Lam.; only in Tajikistan, Pamir Mts. (Narzikulov 1970:361) 2 apterous viviparous females were collected from *Acantholimon pamiricum* Czerniak. (Plumbaginaceae)

Life History. – The species lives on stems and upper side of the leaves, attended by ants. Alate

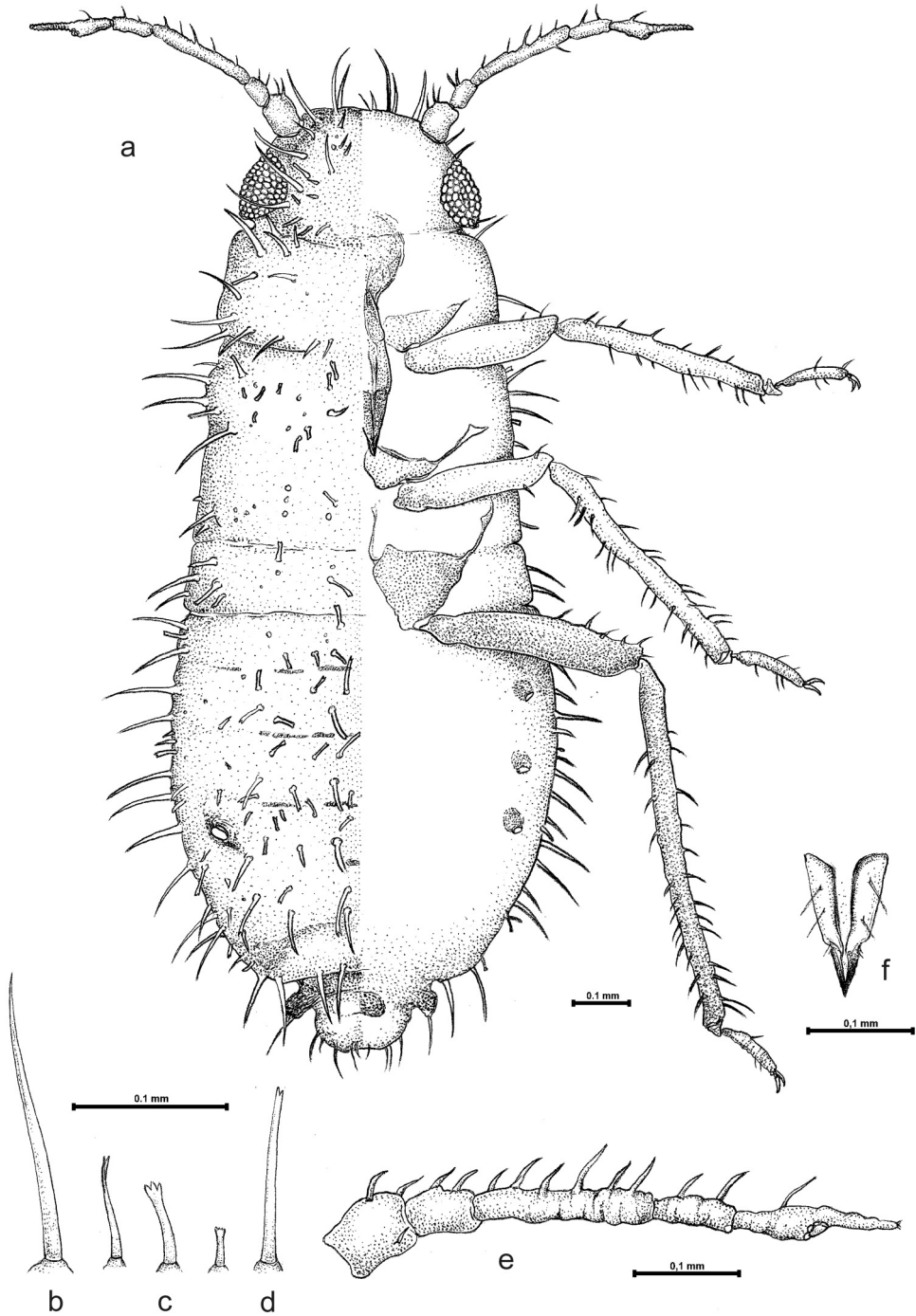


Fig. 2. *Chaetosiphella stipae setosa* subsp. nov. – apterous viviparous female: a. general feature, b. marginal hairs of abdomen, c. hairs across abdominal tergite I-V, d. hairs of abdominal tergite VI, e. antenna, f. apical segment of rostrum.

viviparous females are rare, sexuales have never been described in exception of a very short description of oviparous female (Ivanovskaya 1977: 245).

Xerothermophilous species connected with temperate steppe zones (e.g. Mongolia, West Siberia, Ukraine, Hungary) or dry mountain valleys (e.g. West Pamir Mts., Altay Mts., inner Alpine valleys).

***Chaetosiphella stipae setosa* subsp. nov.**

(Figs 2-4)

Type material. – Holotype-M. la Roche de Rame, 1 100 m (H. A.), 22 VI 1969, *Calamagrostis argentea*, leg. Rem. at Lecl., 2 apt. viv.-left, No 4083, Paratypes-M. la Roche de Rame, 1 100 m (H. A.), 22 VI 1969, *C. argentea*, leg. Rem. at Lecl., 2 apt. viv.-right, No 4083, La Grave H.A., 25 VIII 1953, *C. argentea*, leg. Remaudiere, 4 apt. viv., No 4084 MNHN(EH), Paris, France; France, Min. W Canues, 29 III 1959, *Stipa* sp., leg. R. v. d. Boeck No 1317, BM 1984-340, 2 apt. viv., 3 juv. (BMNH), London, UK.

Diagnosis. – This subspecies can be distinguished by the length and form of apical rostral segment as well as dorsal chaetotaxy-numerous, pointed hairs.

Description. – apterous viviparous female (Fig. 2a). Coloration of live specimens: not observed; pigmentation when mounted: dark brown, antennal segment I, V, femora, tarsi dark, hind legs black. Body pear-shaped, 1.86-2.05 mm long, 0.80-0.85 mm width. Head and prothorax not fused. Abdominal tergites sclerotized, II-VII fused, without visible sculpture. Proportion of thorax segments I:II:III-0.25:0.23:0.15; head + thorax + I abdominal segment as long as abdominal segment II-VIII. Dorsal chaetotaxy: setae numerous, placed on wart-like bases, which look like perfora-

tions of the dark sclerite, not arranged in visible rows. Marginal hairs pointed, 0.10-0.15 mm long (Fig. 2b), only a few 0.075 mm long hairs with forked apices. Across abdominal tergites I-V hairs with forked or jagged apices, 0.06–0.08 mm long, among them many, 0.03-0.04 mm long forked and fan-shaped hairs (Fig. 2c). Tergite VI with forked hairs 0.10-0.12 mm long (Fig. 2d), tergite VII and VIII with pointed hairs 0.12-0.15 mm long. Head chaetotaxy: pointed, thorn-like, 0.10-0.15 mm long hairs on the apex and the margin of the head; towards to the mid of the head two rows of pointed, shorter hairs 0.05-0.06 mm; a few short 0.025-0.03 mm long forked hairs in the middle part of the head. Antenna (Fig. 2e) short, reaching to middle of mesothorax, 5-segmented, about 0.32-0.37 times the body length. Vb about 1.0-1.5 times Va; other antennal ratios are: Vb : III 0.30-0.50; V : III 0.66-0.90; V : IV 1.90-2.50. Antennal chaetotaxy: I segment with 3 hairs, II segment with 2 hairs, III segment with 5-7 hairs, IV segment with 2 hairs, Va with 1 hair, at the tip of the processus terminalis 4 small sense-hairs. Antennal hairs about 0.025-0.04 mm long, pointed. Antennal hairs III about 2.5 times the basal articular diameter of this segment. Frons convex. Eyes normal, ocular tubercles distinct. Rostrum short, reaching to middle coxae with an apical segment (Fig. 2f) short, stiletto-shaped, 0.12-0.15 mm long, 0.53-0.68 times III antenna segment and 0.83-1.0 times II segment of hind tarsus, with 2 accessory hairs. Hind legs long, about 1.52 mm; I tarsal segments with 5 hairs, empodial hairs spatulate. Hairs of legs pointed. Siphunculi pore-shaped, placed at anterior margin of V abdominal segment, 0.02 mm in basal diameter. Cauda broadly rounded, 0.10 mm width, with 3 0.05-0.06 mm long pointed hairs.

Table 2. *Chaetosiphella stipae* subsp. *setosa* - measurements of apterous viviparous female (lengths). 1-4 type slide.

no.	body	antenna	antennal segments			apical segment of rostrum	hind tarsus
			III	IV	V:(Va+Vb)		
1	1.99	0.63	0.26	0.11	0.11+0.14	0.15	0.18
2	1.86	0.61	0.20	0.08	0.09+0.09	0.14	0.17
3	2.05	0.75	0.27	0.11	0.1+0.1	0.15	0.18
4	1.95	0.65	0.22	0.08	0.08+0.1	0.12	0.15

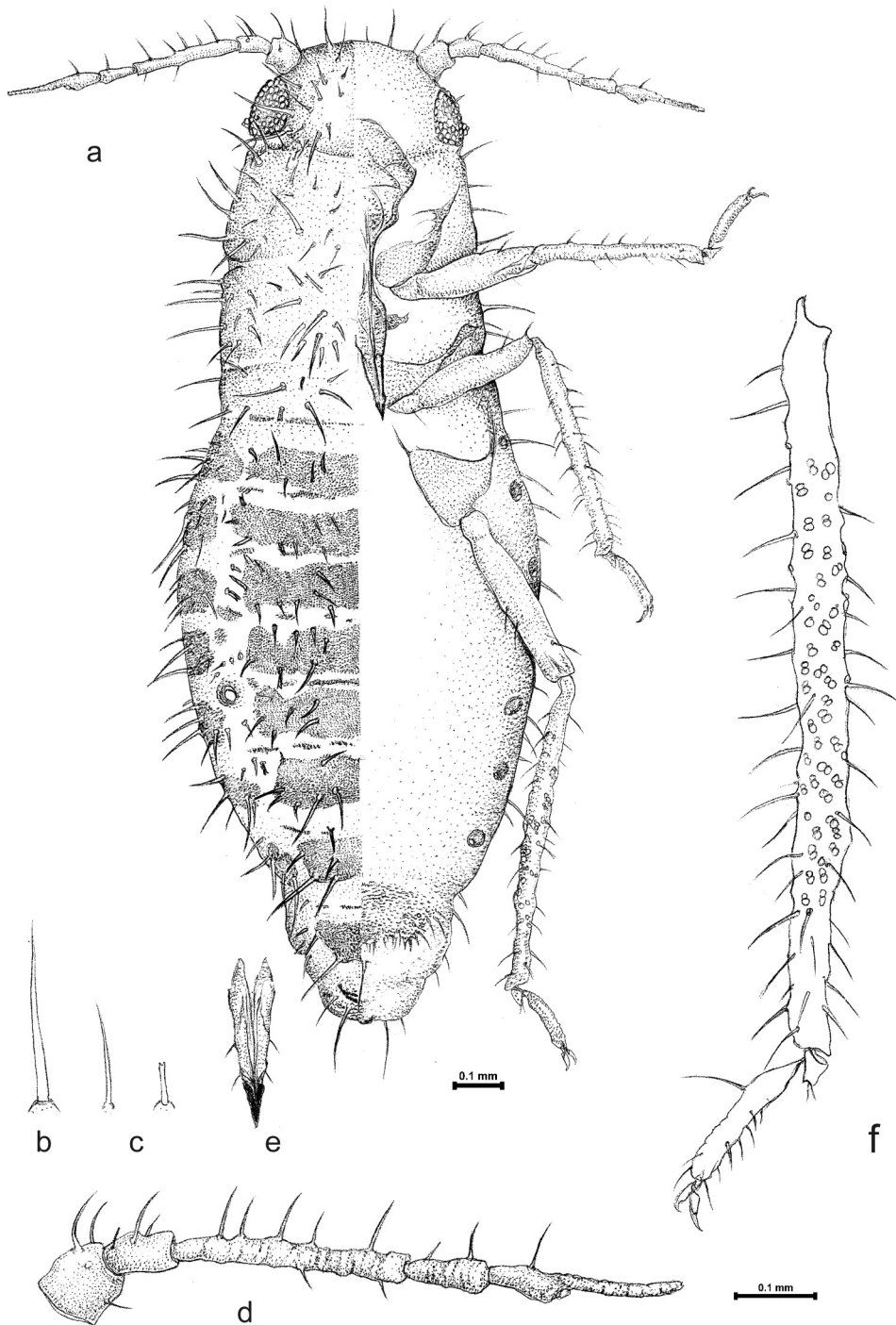


Fig. 3. *Chaetosiphella stipae setosa* subsp. nov. – oviparous female: a. general feature, b. marginal hairs of abdomen, c. hairs across abdominal tergite I-V, d. antenna, e. apical segment of rostrum, f. hind tibia and tarsus.

Table 3. *Chaetosiphella stipae* subsp. *setosa* - measurements of oviparous female (lengths).

no.	body	antenna	antennal segments			apical segment of rostrum	hind tarsus
			III	IV	V:(Va+Vb)		
1	1.62	0.58	0.20	0.06	0.075+0.1	0.12	0.14
2	1.82	0.55	0.18	0.075	0.08+0.085	0.12	0.15
3	1.87	0.57	0.17	0.075	0.075+0.09	0.12	0.15
4	1.84	0.56	0.20	0.075	0.085+0.09	0.12	0.14

Description. – oviparous female (Fig. 3a). Coloration of live specimens: not observed; pigmentation when mounted: pale except for I, II, IV and V segment of antennae, femora, tibiae and hind legs which are darker; abdominal sclerites dark. Body elongate, slender, 1.62-1.87 mm length and 0.65-0.75 mm width. Head and prothorax not fused. Abdominal tergites fused, marginal sclerites small, pleural and spinal sclerites fused into cross bars; distinct sculpture visible only on sclerites. Dorsal chaetotaxy: hairs less numerous than in apterous viviparous female. Marginal hairs pointed 0.10-0.12 mm long (Fig. 3b); across abdominal tergites I-V hairs with pointed 0.06-0.08 mm long and forked 0.025-0.04 mm long hairs (Fig. 3c). Abdominal tergites VI-VIII with pointed 0.12-0.15 mm long hairs. Head chaetotaxy: hairs numerous, pointed, 0.12-0.15 mm long, among them shorter, spiny hairs 0.04-0.05 mm long. Antenna (Fig. 3d) short, reaching just to prothorax, 5-segmented, 0.30-0.35 times the body length. Vb 1.0-1.35 times Va ; other antennal ratios are: Vb : III 0.45-0.50; V : III 0.85-0.94; V : IV 2.1-3.20. Antennal chaetotaxy: segment I with 3 hairs; segment II with 3 hairs; segment III with 3-5 hairs; segment IV with 2 hairs, Va with 1 hair. Antennal hairs short; the longest antennal hair III about 2.0 times the basal articular diameter of this segment.

Frons convex. Eyes with distinct ocular tubercles. Rostrum short, reaching second coxae with an apical segment (Fig. 3e) stiletto-shaped, 0.12-0.14 mm long, 0.62-0.73 times III antennal segment and 0.83-0.89 times II segment of hind tarsus, with 2 accessory hairs Hind legs 1.3-1.35 mm long; hind tibiae slightly thickened with 51-53 8-shaped scent plates in the whole surface of the tibiae; I tarsal segments with 5 hairs, empodial hairs spatulate (Fig. 3f). Siphunculi placed at anterior margin of abdominal segment V, 0.02 mm in basal diameter. Cauda broadly rounded, 0.10 mm width, with 3 about 0.08 mm long pointed hairs.

Description. – apterous male (Fig. 4a). Coloration of live specimens: not observed; pigmentation when mounted: yellowish, $\frac{1}{3}$ III, IV and V antennal segment, femora, tibiae and genitalia darker. Body elongate, slender; 1.14-1.35 mm length and 0.45-0.50 mm width. Head, thorax and abdominal segment I free, abdominal segments II-VII fused, without visible sculpture. Dorsal chaetotaxy: marginal hairs 0.10-0.15 mm long, across the abdominal tergites 0.025-0.075 mm long; less numerous than in oviparous female; pointed (Fig. 4b); lack hairs with forked, jagged or fan-shaped apices. Head chaetotaxy: hairs pointed 0.10-0.12 mm and 0.05 mm long. Antenna (Fig. 4c) long, reaching

Table 4. *Chaetosiphella stipae* subsp. *setosa* - measurements of apterous male (lengths).

no.	body	antenna	antennal segments			apical segment of rostrum	hind tarsus
			III	IV	V:(Va+Vb)		
1	1.35	0.8	0.32	0.10	0.08+0.16	0.1	0.12
2	1.30	0.8	0.29	0.11	0.08+0.16	0.1	0.13
3	1.14	0.75	0.28	0.08	0.08+0.15	0.1	0.12
4	1.30	0.75	0.30	0.10	0.1+0.12	0.1	0.13

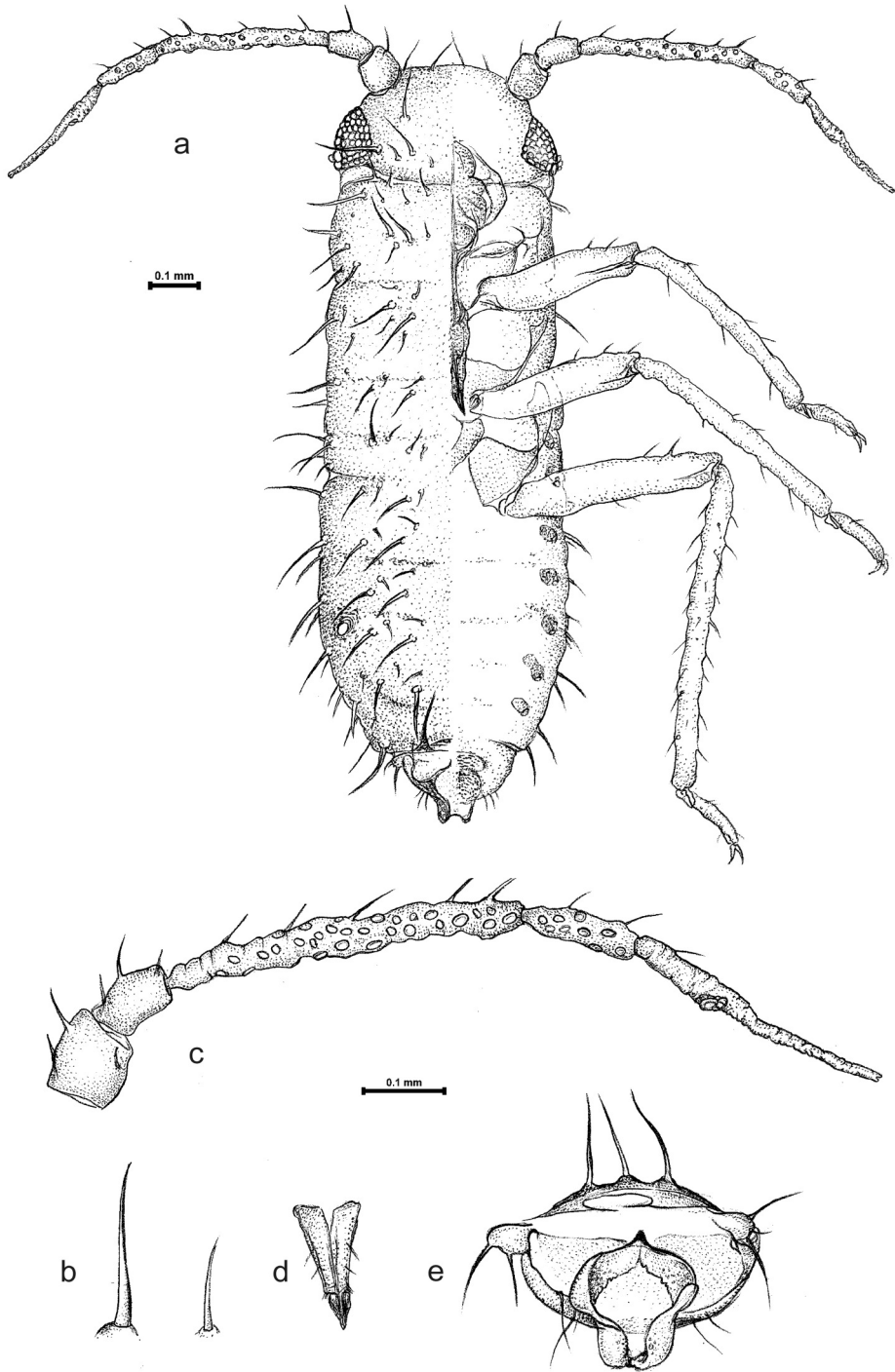


Fig. 4. *Chaetosiphella stipae setosa* subsp. nov. – apterous male: a. general feature, b. marginal hairs of abdomen, c. antenna, d. apical segment of rostrum, e. genitalia.

just to I abdominal segment, 5-segmented, 0.57-0.65 times the body length. Vb 1.7-2.2 times Va; other antennal ratios are: Vb: III 0.50-0.60; V : III 0.78-0.89; V : IV 2.10-2.80. Antennal chaetotaxy: segment I with 3 hairs; segment II with 3 hairs; segment III with 5-7 hairs; segment IV with 2 hairs; Va with 1 hair. Antennal hairs short. Segment III with 30-33, segment IV with 8-10 roundish secondary rhinaria. Frons convex. Eyes with distinct ocular tubercles. Rostrum short, reaching to second coxae with an apical segment (Fig. 4d) stiletto-shaped, 0.10 mm long, 0.31-0.39 times III antennal segment and 0.71-0.83 times II

segment of hind tarsus, with 2 accessory hairs. I tarsal segments with 5 hairs, empodial hairs spatulate. Siphunculi placed at anterior margin of abdominal segment V, 0.03 mm in basal diameter. Cauda broadly rounded. Genitalia (Fig. 4e) well developed, strongly sclerotised, dark.

Geographical distribution (Fig. 6): France (Caunes-Minervois: BMNH Collection; Alpes de Haute Provence-La Grave, Mount la Roche de Rame, Durance: MNHN Collection)

Host Plant: *Stipa* sp., *Calamagrostis argentea* D.C., *C. arundinacea* (L.) ROTH

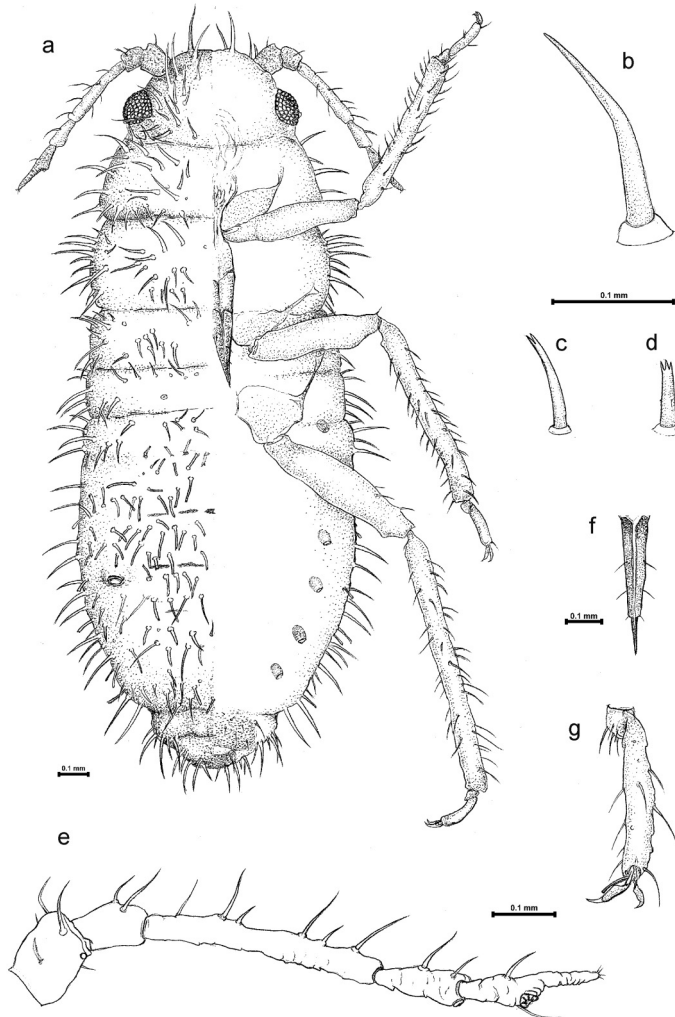


Fig. 5. *Chaetosiphella longirostris* sp. nov. – apterous viviparous female - general feature: a. thorn-like hair, b. forked hair, c. jagged hair, d. antenna, e. apical segment of rostrum, f. I tarsal segment

no.	body	antenna	antennal segments			apical segment of rostrum	hind tarsus
			III	IV	V:(Va+Vb)		
1	2.62	0.73	0.26	0.1	0.09+0.08	0.3	0.17
2	2.60	0.65	0.25	0.1	0.1+0.075	0.3	0.18
3	2.62	0.65	0.24	0.1	0.08+0.08	0.3	0.18
4	2.49	0.72	0.24	0.09	0.1+0.09	0.27	0.18
5	2.45	0.64	0.26	0.09	0.1+0.09	0.26	0.18
6	2.60	0.75	0.25	0.1	0.1+0.09	0.26	0.17
7	2.60	0.75	0.26	0.1	0.1+0.09	0.28	0.18

Life History: Unknown.

Etymology: The name refers to the chaetotaxy of the body – numerous, pointed hairs.

***Chaetosiphella longirostris* sp. nov.**

(Fig. 5)

Type material. – Holotype–apt. viv., Peniche, *A. arenaria*, 22 IV. 1959, No 79, (CAEAN), Oeiras, Portugal; Paratypes–apt. viv., Peniche, *A. arenaria*, 22 IV. 1959, No 79, (CAEAN), Oeiras, Portugal, apt. viv., Portugal; Baleal, *A. arenaria*, 22 IV. 1959, leg. F. Ilharco, No 79, BM 084-340, (BMNH), London, UK.

Diagnosis. – The new species can be distinguished from other species of the genus *Chaetosiphella* by the big size of the body, the length of antennae and hind legs, dorsal and head chaetotaxy but a prominent feature is the length and form of apical rostral segment.

Description. – apterous viviparous female (Fig. 5). Coloration of live specimens: not observed; pigmentation when mounted: light brown, III and IV antennal segment, tibiae, tarsi pale; I, II, V antennal segment, hind legs dusky, or hind legs black. Body elongate, oval-shaped, 2.45-2.62 mm long and 0.82-1.04 mm width. Head and prothorax not fused. Abdominal tergites sclerotized, II-VII fused, sculpture visible only on cauda. Proportion of thorax segments I:II:III:0.35:0.30:0.15; head + thorax + abdominal segment I as long as abdominal segments II-VIII. Dorsal chaetotaxy: hairs numerous, placed on wart-like bases which look like perforations of the dark sclerite, not arranged in visible rows. On thorax pointed, thorn-like 0.075-0.10 mm long; only a few 0.05 mm long hairs with forked apices. Marginal hairs of the abdominal tergites I-V 0.10-0.11 mm long, on the margin of the abdominal tergites VI-VIII 0.12-

0.15 mm long; almost all marginal hairs pointed, thorn-like (Fig. 5b); only few, short 0.05 mm hairs with forked apices. Across the abdominal tergites pointed 0.06-0.10 mm, forked 0.04-0.05 mm (Fig. 5c) and jagged 0.01-0.025 mm (Fig. 5d) hairs. Head chaetotaxy: hairs pointed, thorn-like, placed on wart-like bases, 0.12-0.15 mm long and 0.05-0.075 mm long; on the all surface of the head. Antenna (Fig. 5e) short, reaching just to anterior margin of mesothorax, 5-segmented, about 0.24-0.28 times the body length. Vb about 0.75-1.10 times Va; other antennal ratios are: Vb : III 0.30-0.40; V : III 0.65-0.83, V : IV 1.45-2.20. Antennal chaetotaxy: I segment with 3 hairs, II segment with 2-3 hairs, III segment with 5-7, IV segment with 2 hairs, Va with 2 hairs-one of them on the inner margin of the base, close to the secondary rhynarium, second opposite to the first one; at the tip of the processus terminalis 4 small sense-hairs. Antennal hairs pointed, about 0.06 mm long; the longest antennal hair III about 2.0-2.4 times the basal articular diameter of this segment. Frons convex. Eyes normal, ocular tubercles distinct. Rostrum long, reaching to hind coxae, with an apical segment (Fig. 5f) stiletto-shaped, very long 0.26-0.30 mm, 1.0-1.38 times III antenna segment and 1.40-1.70 times II segment of hind tarsus; with 2 secondary hairs. Hind legs long, about 1.75-1.85 mm, I tarsal segments (Fig. 5g) with 5 hairs, empodial hairs spatulate. Siphunculi pore-shaped, placed at anterior margin of V abdominal segment, 0.03 mm in basal diameter. Cauda broadly rounded 0.11-0.15 mm width, with four hairs (2-from 0.09 to 0.1 mm and others 2 around 0.075 mm).

Type locality: Baleal, Portugal.

Geographical Distribution (Fig. 6): The new species was found only at its typical locality. Ba-

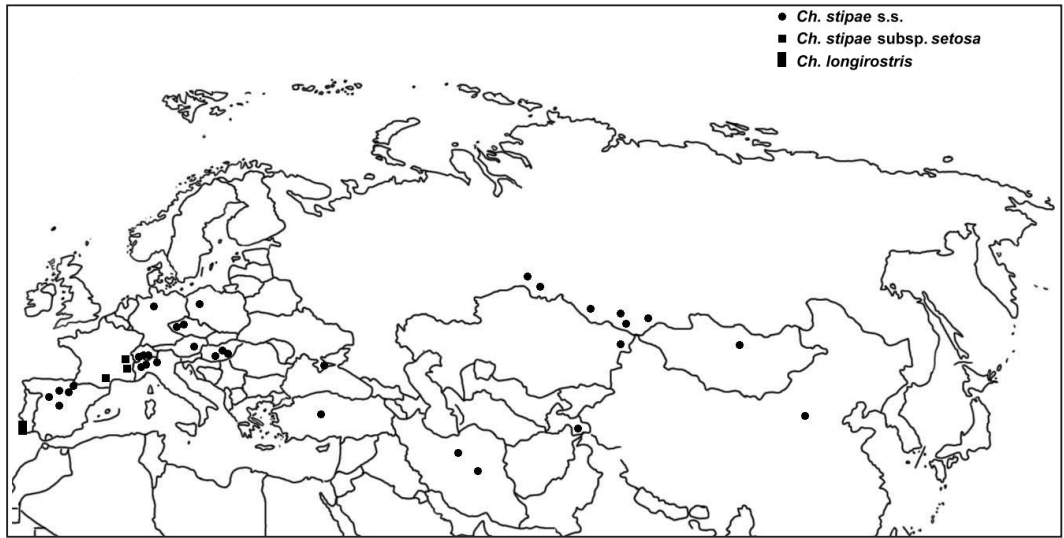


Fig. 6. *Chaetosiphella stipae* s.s., *C. stipae setosa* subsp. nov., *C. longirostris* sp. nov. - geographical distribution.

leal is a beach near Peniche, about 100 km north of Lisbon, Portugal.

Host Plant: *Ammophila arenaria* (L.) Link

Life History: Unknown

Etymology. – The name refers to the long rostrum, reaching to hind coxae and its very long apical segment.

Discussion

The most prominent feature for the species of the genus *Chaetosiphella* is a long rostrum and its very long, stiletto-shaped apical segment. On the basis of this character Hille Ris Lambers (1939) recognized a species described by del Guercio (1905) as *Sipha berleseii* and transferred it into the new genus *Chaetosiphella* (“I separate this genus from *Sipha*, because of the very abnormal shape of the ultimate rostral segment” Hille Ris Lambers 1939:84). Later (1947), the author transferred to this genus *C. tshernavini* which Mordvilko (1921) described also as *Sipha* in his key to the aphids of the European part of the USSR and established as its subspecies *C. stipae*, on the basis of material collected in the Valais (dry region in the inner Alpine valleys), Switzerland, by Dr. R. Stäger. The most significant character for distinguishing this subspecies was “the remarkable forked or fan-shaped dorsal hairs” (Hille Ris Lambers 1947: 329). Also dorsal hairs of *C. tshernavini* are fan-

shaped, but much shorter. Moreover, characters like head fused with prothorax, dorsum with visible sculpture and III antennal segment with I, very short hair differ between these two species. *C. stipae* also resembles aphids belonging to the genus *Atheroides* Haliday, 1839 and specimens collected from *Stipa capillata* L. in Germany were described as *A. stipae* by Börner (1950:3). Later on *A. stipae* was synonymized with *C. stipae* and the latter was raised to the species level (Börner 1952). *C. stipifolii* Bozhko (1959:23) is a synonym of *C. stipae* (Eastop & Hille Ris Lambers 1976: 135) as well as *C. pamirica* Narzikulov (1970: 360-362) (Eastop & Blackman 2005). Recently Kadyrbekov (2005) described *C. massagetica* from *S. capillata* and *Stipa* sp. in Kazakhstan. Judging from the original description this species seems to be closely related to *C. berleseii*, but slightly differs by the length of the antennal and dorsal hairs, proportion of processus terminalis and the base, proportion of an apical rostral segment and III antenna segment as well as the host plant. These two species are difficult to separate and *C. massagetica* was not included in Aphids on the World’s Herbaceous Plants and Shrubs (Blackman & Eastop 2006).

Similarly, *C. stipae subsp. setosa* from France and *C. longirostris* from Portugal may be treated as a variant population of *C. stipae*. However, examination of cotypes of *C. stipae* (Switzerland),

samples from Mongolia, Iran, Turkey, Hungary, Czech Republic, Austria and Spain (about 40 specimens), as well as comparison with material from Portugal and France show significant differences in diagnostic characters like length and shape of the body, antennal ratios and chaetotaxy, length of the rostrum and its apical segment, proportion of apical segment of rostrum and III antenna segment, proportion of apical segment of rostrum and II segment of hind tarsus; proportion of thorax segments, head and dorsal chaetotaxy. In comparison with *C. stipae*, *C. longirostris* is much bigger, oval-shaped, with longer antennae and hind legs and is characterized by rostrum reaching to the hind coxae and its very long apical segment (0.26-0.30 mm). The rostrum of *C. stipae* also reaches to the hind coxae, but an apical segment is much shorter (0.17-0.20 mm). The chaetotaxia also differs between these two species. In *C. stipae* we can observe the variability of number and shape of hairs - abdominal ones are arranged in regular rows of pleural and spinal hairs with forked and jagged apices and numerous, short fan-shaped hairs. Marginal hairs, except VII and VIII segment, are usually forked or jagged, not numerous and rather short. However, some specimens, from Switzerland, Spain or Iran, among forked hairs have also pointed, long hairs at the margin of the abdomen. *C. longirostris* chaetotaxically resembles *C. stipae* but differs by numerous thorn-like, pointed hairs on the head and the margin of the body. Across the abdominal tergites there are pointed, forked and jagged hairs, lack hairs with fan-shaped apices. Moreover, on antennae and legs hairs are always pointed whereas in *C. stipae* (e.g. specimens from Mongolia and Hungary) have forked apices.

C. stipae subsp. *setosa* is characterized by the length of an apical segment of rostrum which is very short (0.12-0.15 mm), but still stiletto-shaped; rostrum is short, reaching second coxae. Chaetotaxically it resembles *C. stipae* but differs by numerous pointed hairs on the head and the margin of the body, abdominal hairs are not arranged in visible rows. In apterous viviparous females across abdominal tergites these hairs are forked, jagged and fan-shaped, whereas in sexuales, especially in males, they are only pointed. *C. stipae*, and especially its subspecies, is similar to *Atheroides hirtellus* Haliday, 1839 but differs by the shape of the apical segment of rostrum, length and shape of abdominal hairs and especially the

length and colour of the hind legs which in *C. stipae* and its subspecies are black and very long. Differences from species of the genus *Chaetosiphella* are given in the key.

Key to the species of the genus *Chaetosiphella* (apterous viviparous female):

Rostrum long, reaching to hind coxae, an apical segment of rostrum stiletto-shaped, longer than III antennal segment and II segment of hind tarsus. Antenna 5-segmented. Empodial hairs spatulate. Siphunculi pore-shaped, placed at anterior margin of V abdominal segment. Cauda broadly rounded.

1. Dorsal hairs pointed 2
 - Dorsal hairs with pointed, forked, jagged or fan-shaped apices 3
2. III antennal segment with 2-4 hairs. Apical rostral segment 1.1-1.8 x III antennal segment. On various grasses *C. berleseae*
 - III antennal segment with 4-6(8) hairs. Apical rostral segment 1.1-1.3 x III antennal segment. On *Stipa* sp. *C. massagetica* (based on original description, Kadyrbekov, 2005)
3. Head fused with prothorax, dorsum sclerotic with visible sculpture. Dorsal hairs short, fan-shaped. III antennal segment with 0-1 short hairs. An apical segment of rostrum stiletto-shaped, 0.25 mm long. On *Corynephorus canescens* *C. tshernavini*
 - Head not fused with prothorax, dorsum sclerotic without visible sculpture. Dorsal hairs with pointed, forked, jagged or fan-shaped apices 4.
4. Marginal hairs forked or jagged, hairs with pointed apices only on the margin of the VII and VIII abdominal segment. III antennal segment with 3-5 hairs. An apical segment of rostrum stiletto-shaped, 0.17-0.22 mm long. On *Stipa* sp *C. stipae* s.s.
 - Almost all marginal hairs pointed, thorn-like 5
5. III antennal segment with 4-7 hairs. Apical segment of rostrum stiletto-shaped, short, 0.12-0.15 mm long. On *Stipa* sp., *Calamagrostis argentea* *C. stipae* subsp. *setosa*
 - III antennal segment with 5-7 hairs. Apical segment of rostrum stiletto-shaped, long, 0.26-0.30 mm long. On *Ammophila arenaria* *C. longirostris*

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