

A REVIEW OF THE HOLARCTIC GENUS *TERRILIMOSINA*
(DIPTERA: SPHAEROCERIDAE), WITH DESCRIPTIONS
OF NEW SPECIES FROM NEPAL AND JAPAN

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Abstract.—*Terrilimosina unio* from Nepal and Java, *T. smetanai* from Nepal and Pakistan, *T. deemingi* from Nepal, *T. brevipexa* from Japan, and *T. longipexa* from Japan and Nepal are described as new. A cladogram and a key to the nine world species of *Terrilimosina* are provided and new distributional data are given.

The genus *Terrilimosina* Roháček, widespread in the Holarctic and Oriental Regions, constitutes a distinctive monophyletic group within the sphaerocerid subfamily Limosininae. As the generic name suggests, species of this genus are largely terricolous and are often associated with small deposits of wet, decaying vegetation in forests or peatlands. One species, *T. racovitzai* Bezzi, is troglophilic and polysaprophagous. The major synapomorphies for *Terrilimosina* are a posteriorly rounded discal cell, a comb-like row of bristles on the surstylus, and a shortened, frame-like distiphallus. Members of this genus are further characterized by a telescoping female abdomen, weakly sclerotized distiphallus, wing venation with R_{4+5} and R_{2+3} sinuate, and the costa extending beyond the tip of R_{4+5} . A full generic description can be found in Roháček (1983) and a key to the four previously known species can be found in Marshall (1985). No eastern Palaearctic species were previously known, although Deeming (1969) mentioned the existence of undescribed species similar to *T. schmitzi* (Duda) in Nepal, and Richards (1961) recorded *T. racovitzai*, the type species of *Terrilimosina*, from Afghanistan. The identity of the spec-

imens from Afghanistan is confirmed, and the specimens previously examined by Deeming are included in the type series of new species described below.

Collection abbreviations.—Biosystematics Research Institute, Ottawa, Canada (CNC); University of Guelph Collection (GUE); the Silesian Museum, Opava, Czechoslovakia (OPAVA); the Geneva Museum (GM); British Museum of Natural History (BMNH); Universitetets Zoologiske Museet, Copenhagen, Denmark (UZMC).

KEY TO THE SPECIES OF *TERRILIMOSINA*

Terrilimosina species are superficially very similar, but each has distinctive, species-specific genitalic characteristics which should be examined to confirm identifications.

1. Eye height less than 1.5 times genal height. Mid tibia ventrally with only an apical bristle. Europe, Afghanistan and eastern North America. *racovitzai* (Bezzi)
- Eye height more than 2.0 times genal height. Mid tibia with a mid ventral bristle. 2
2. Wing shorter than body, even in dried specimens. Epiproct without bristles. Europe. *sudetica* (Roháček)

- Wing longer than body. Epiproct with 2 bristles. 3
- 3. Forecoxa yellow, contrasting with dark pleuron. Nepal *deemingi* n. sp.
- Forecoxa brown (sometimes very pale, appearing dirty yellow). 4
- 4. Sternite 5 of male concave and simple posteromedially. Epiproct twice as long as wide. Holarctic. *schmitzi* (Duda)
- Sternite 5 of male with a posteromedial lobe covered with modified setulae. Epiproct at most 1.5 times as long as wide. 5
- 5. Syntergite 1+2 at least 1.5 times as wide and as long as tergite 3 and at least partly darker than tergite 3. Surstylus with 2-5 very short, blunt bristles apically on posteroventral lobe (Figs. 2, 32). Hypoproct concave anteriorly, setulose on less than posterior half (Figs. 6, 34). 6
- Syntergite 1+2 not markedly darker or wider, and no more than 1.5 times as long as tergite 3. Surstylus with a comb-like row of bristles on inner ventral surface. Hypoproct convex anteriorly, setulose on more than posterior half. 7
- 6. Syntergite 1+2 entirely darkly pigmented, twice as long as tergite 3. Surstylus with about 5 very short, blunt bristles apically on posteroventral lobe (Figs. 1, 2). Anterior margin of epiproct excised (Fig. 8). Japan. *brevipexa* n. sp.
- Syntergite 1+2 with an anteromedial pale area, 1.5 times as long as tergite 3. Surstylus with 2 small blunt bristles apically on posteroventral lobe (Fig. 32). Anterior margin of epiproct entire (Fig. 36). Nepal, Java. *unio* n. sp.
- 7. Surstylus elongate, with a comb-like row of short bristles (Figs. 23, 24). Sternite 5 of male long, posteromedial lobe covered with single bristles. Tergite 8 of female entirely dark; extending lateroventrally as broad, shining lobes (Fig. 28). Nepal, Pakistan. *smetanai* n. sp.
- Surstylus subquadrate in lateral view, with a comb-like row of long bristles (Figs. 15, 16). Sternite 5 of male short, posteromedial lobe covered with tufts of setulae. Tergite 8 of female with tripartite pigmentation and not extending to ventral surface (Fig. 22). 8
- 8. Sternite 5 of male with a prominent, dark, basally narrowed posterior lobe covered with tufts of long, flattened setulae (Fig. 19). Spermathecae cup-shaped; invagination at about 140 degrees from base (Fig. 21). Japan, Nepal. *longipexa* n. sp.
- Sternite 5 of male with an inconspicuous, broadly based, posteromedial lobe covered with patches of short, flattened setae. Spermathecae peanut-shaped; invagination apical. Nearctic. *pexa* Marshall

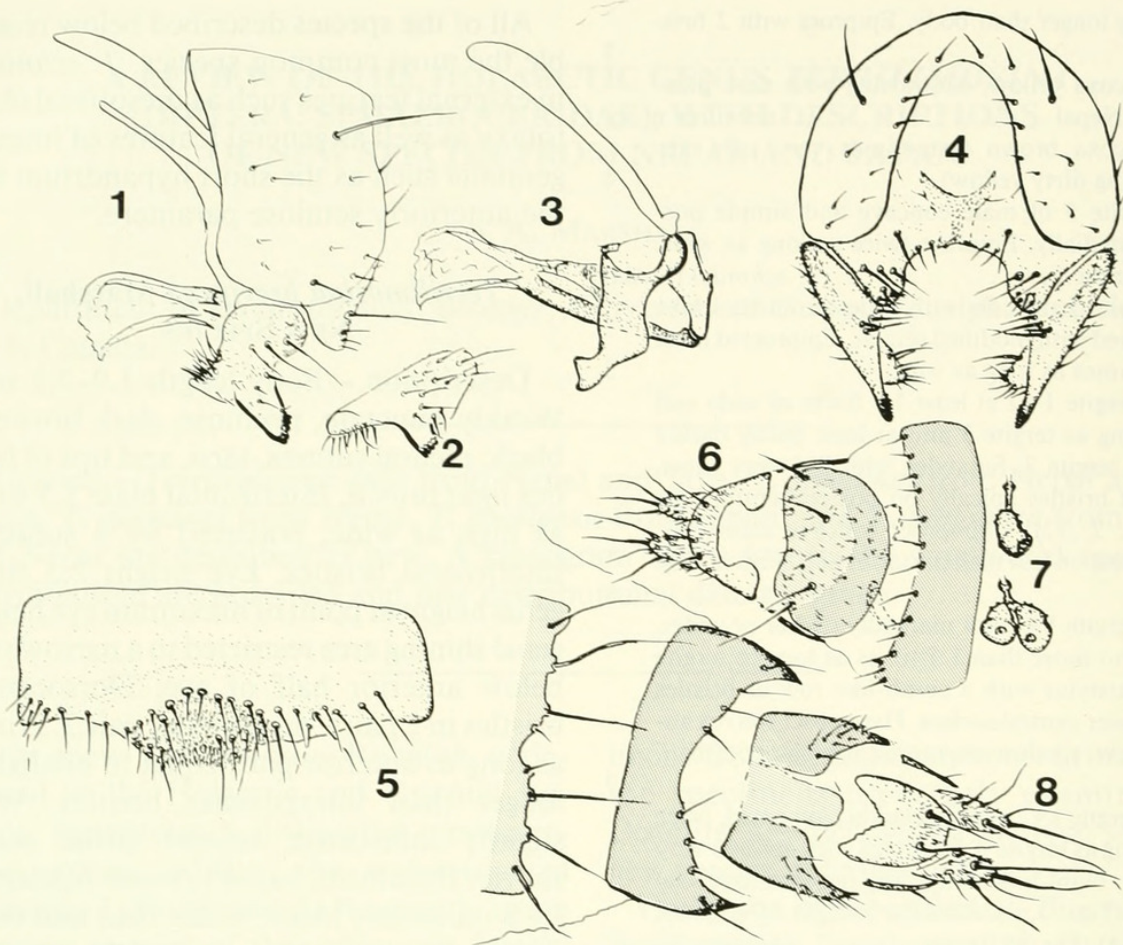
All of the species described below resemble the most common species, *T. schmitzi*, in external features such as mesotibial chaetotaxy as well as general features of internal genitalia such as the short hypandrium and the anteriorly setulose paramere.

Terrilimosina brevipexa Marshall,
NEW SPECIES

Description.—Body length 1.9–2.1 mm. Weakly punctate, pruinose, dark brown to black; pleural sutures, tarsi, and tips of femora light brown. Interfrontal plate 1.5 times as high as wide, bordered by 4 subequal interfrontal bristles. Eye height 2.5 times genal height at point of maximum eye height; genal shining area restricted to a narrow strip below anterior half of eye. Dorsocentral bristles in 2 pairs, prescutellar pair 2.5 times as long as anterior pair, equal to or slightly longer than intrapostalar bristles. Wing slightly infuscated; second costal sector shorter than third; halter luteous. Syntergite 1+2 uniformly black, wider than and twice as long as tergite 3; tergite 3 light brown.

Male terminalia.—Sternite 5 convex and densely setulose posteromedially; these setulae enlarged and flattened at apex of posteromedial lobe (Fig. 5). Surstylus laterally setulose at base; ventrally with anterior and posterior lobes, posterior lobe with an internal comb of short, stout bristles at apex (Figs. 1, 2). Paramere broad, strongly bent; apex broadly bifid (Fig. 3). Basiphallus narrow, not extending ventrally beyond point of articulation with distiphallus. Distiphallus very long, narrow; with relatively dark proximal dorsal and ventral sclerites and pale distal dorsal and ventral sclerites.

Female terminalia.—Tergite 8 with tripartite pigmentation, wide median area pale and shining, lateral areas pruinose, ventrolateral lobes shining brown; epiproct slightly longer than wide, emarginate anteriorly, setulose and with 2 bristles on posterior third (Fig. 8). Sternite 8 simple, darker and more than twice as large as hypoproct. Hypoproct deeply emarginate anteriorly, setulose on



Figs. 1–8. *Terrilimosina brevipeza*. 1, Male terminalia, left lateral. 2, Surstylus, ventral. 3, Aedeagus and associated parts. 4, Male terminalia, posterior. 5, Male sternite 5. 6, Female terminalia, ventral. 7, Spermathecae. 8, Female terminalia, dorsal.

posterior third (Fig. 6). Spectacles-shaped sclerite visible only as 2 lightly sclerotized rings. Spermathecae cylindrical, bent and widened apically, with a small apical invagination (Fig. 7).

Types.—Holotype ♂ (CNC) and 9 ♀ paratypes (GUE, CNC). JAPAN. Shikoku, Isizuchi Mt. National Park, Tsuchigoya, 1400 m, 11–18.viii.1980, S. Peck.

Etymology.—The specific epithet refers to the short comb-like row of short bristles on the surstylus.

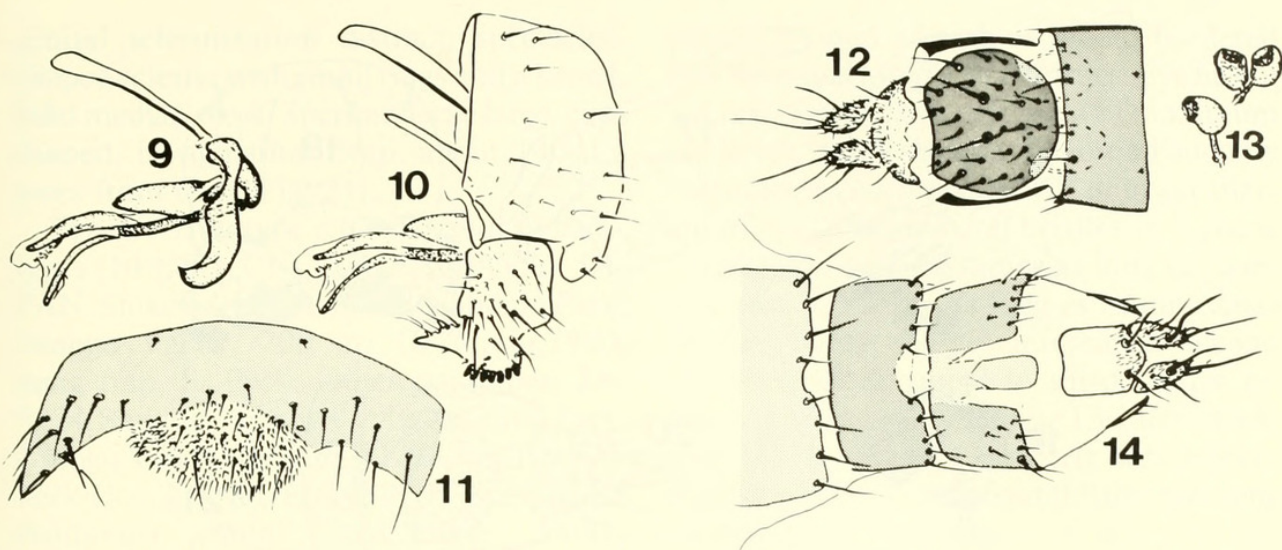
Comments.—This species is most easily recognised on the basis of distinctive characters of the abdomen, including the large, dark syntergite 1+2, the very distinctive distiphallus, the bent paramere, the short comb of bristles on the surstylus, and the deeply emarginate hypoproct.

Terrilimosina deemingi Marshall,

NEW SPECIES

Figs. 9–14

Description.—Body length 1.8–2.0 mm. Body pruinose brown, legs light brown, coxa yellow. Interfrontal plate subequal in height and width, bordered by 4 subequal interfrontal bristles. Eye height 2.5–2.8 times genal height at point of maximum eye height; genal shining area restricted to a narrow strip below anterior half of eye. Dorsocentral bristles in 2 pairs, prescutellar pair 3 times as long as anterior pair, 1.5 times as long as intrapostalar bristles. Wing clear; second costal sector shorter than third; halter luteous. Abdominal syntergite 1+2 uniformly brown, slightly wider and 1.4 times as long as tergite 3; tergite 3 similarly pigmented.



Figs. 9–14. *Terrilimosina deemingi*. 9, Aedeagus and associated parts. 10, Male terminalia, left lateral. 11, Male sternite 5. 12, Female terminalia, ventral. 13, Spermathecae. 14, Female terminalia, dorsal.

Male terminalia.—Sternite 5 convex and uniformly setulose posteromedially (Fig. 11). Surstylus basally subquadrate and laterally setulose; ventrally with a long, tapered anterior lobe and a posteroventral lobe with a loose comb of 7 stout bristles (Fig. 10). Paramere bent anteriorly and apically pointed (Fig. 9). Basiphallus narrow, not extending ventrally beyond point of articulation with distiphallus. Distiphallus long, narrow; with a dark, flat proximal dorsal sclerite, large lateroventral sclerite, and pale, thin distal dorsal and ventral sclerites surrounded by finely spinulose membrane.

Female terminalia.—Tergite 8 entirely pruinose, with tripartite pigmentation, median part pale brown; epiproct slightly longer than wide, posterior third setulose and with 2 bristles (Fig. 14). Sternite 8 large, shield-shaped, very darkly pigmented, setulose and setose (Fig. 12). Hypoproct small, transverse, setulose on posterior third. Spectacles-shaped sclerite not visible except as large, weakly sclerotized rings. Spermathecae small, bent apically, with invagination at about 120 degrees from duct (Fig. 14).

Types.—Holotype ♂ (CNC) and 172 paratypes (47 ♂, 125 ♀, GUE, CNC, OPAVA). NEPAL. Between Ghopte and Thare Pati,

3200 m, 23–26.iv.1985, Flight Intercept Trap, A. Smetana. Other paratypes: NEPAL. Below Thare Pati, 3300 m, 9–13.iv.1981, pitfall trap on a clearing in a mixed *Abies*, *Acer*, *Rhododendron* forest, A. Smetana (3 ♀, GUE); Taplejung Distr., Sangu, c. 6200', mixed vegetation by stream in gully, xi.1961–i.1962, R. L. Coe (1 ♂, BMNH). The latter specimen was listed as *Leptocera* (*Limosina*) sp. (2) near *paraminima* (Duda) by Deeming (1969).

Etymology.—This species is named after J. Deeming, in recognition of his 1969 paper on Sphaeroceridae from Nepal.

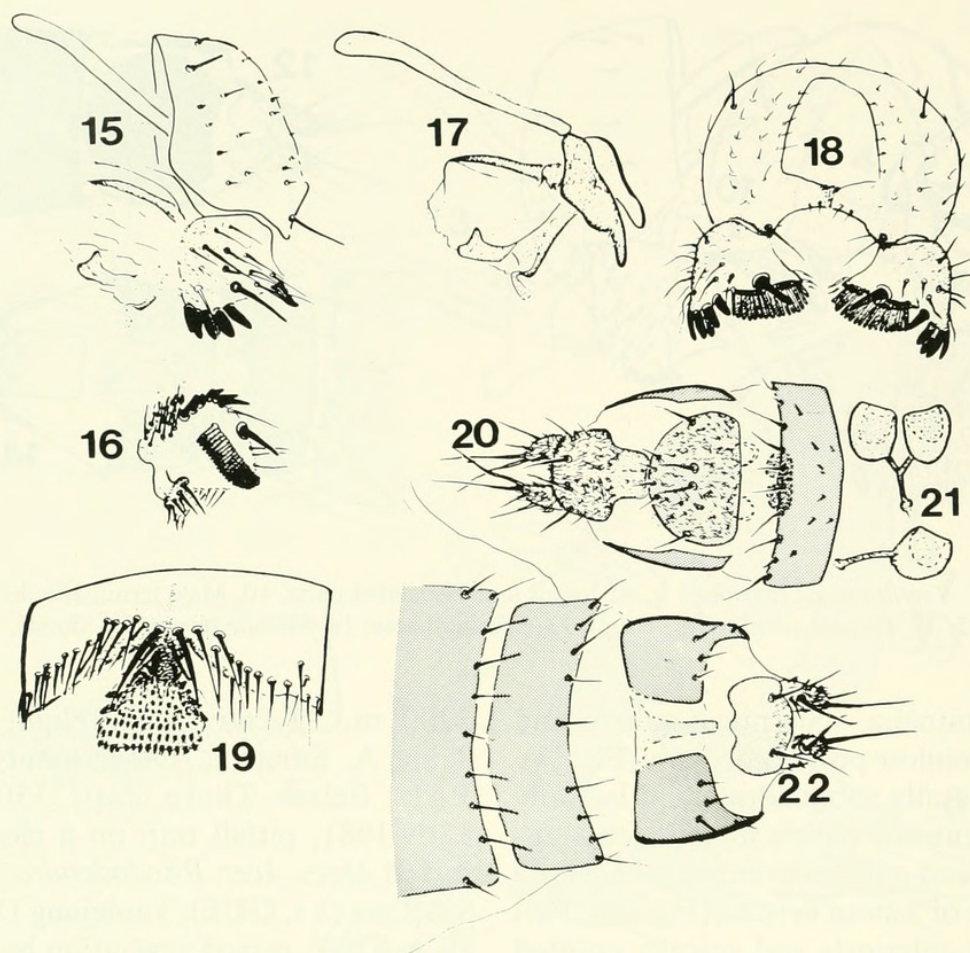
Comments.—*Terrilimosina deemingi* is easily recognized by its pale legs, especially the yellow coxae, and is further characterized by unique male terminalia and distinctive features of the female terminalia such as the dark, shield-shaped sternite 8.

Terrilimosina longipexa Marshall,

NEW SPECIES

Figs. 15–22

Description.—Body length 1.6–1.9 mm. Body pruinose brown; legs light brown. Interfrontal plate 1.5 times as high as wide, bordered by 4 short interfrontal bristles. Eye 1.9–2.1 times as high as gena at point of maximum eye height; anterior part of gena



Figs. 15–22. *Terrilimosina longipexa*. 15, Male terminalia, left lateral. 16, Surstylus, ventral. 17, Aedeagus and associated parts. 18, Male terminalia, posterior. 19, Male sternite 5. 20, Female terminalia, ventral. 21, Spermathecae. 22, Female terminalia, dorsal.

with a triangular shining area. Dorsocentral bristles in 2 pairs, prescutellar pair twice as long as anterior pair, 1.5 times as long as intrapostalar bristles. Mid tibia with anteroapical bristle over half as long as ventroapical bristle (much smaller in all congeners). Wing clear, second and third costal sectors subequal, halter luteous. Abdominal syntergite 1+2 with a large anteromedial pale area, as wide and 1.5 times as long as tergite 3; pigmentation of tergite 3 similar to pale part of syntergite.

Male terminalia.—Sternite 5 transverse, shorter than sternite 4, darkly pigmented; posterior margin long setose; posteromedial lobe constricted basally, distally with several short, stout marginal bristles and covered with tufts of small, flat setulae (Fig. 19). Surstylus subquadrate in lateral view, with

6 stout bristles anteroventrally, a comb-row of long bristles on inner ventral surface, and a distally expanded, setose lobe on inner dorsal surface (Figs. 15, 16, 18). Paramere simple, broad basally, strongly narrowed apically (Fig. 17). Basiphallus very narrow, frame-like, extending ventrally beyond point of articulation with distiphallus. Distiphallus broad, with lightly pigmented dorsal and ventral sclerites subequal in length.

Female terminalia.—Tergite 8 with tripartite pigmentation, narrow median part pale and shining, lateral parts pruinose, ventrolateral lobes shining brown; epiproct broader than long, posterior third setulose and with 2 bristles (Fig. 22). Sternite 8 simple, entirely setulose, twice as large as hypoproct; hypoproct setulose except for convex anterior process (Fig. 20). Internal

genital sclerotization distinct, spectacles-shaped sclerite with small rings and a broad, bifid median piece. Spermathecae large, cup-shaped, invagination deep, about 140 degrees from duct (Fig. 21).

Types.—Holotype ♂ (CNC) and 19 paratypes (10 ♂, 9 ♀, CNC, GUE, OPAVA). JAPAN. Shikoku, Ishizuchi Mt. National Park, Omogo Valley, 700 m, 18–25.viii.1980, dung trap, S. Peck. Other paratypes: JAPAN. Shikoku, Ishizuchi Mt. National Park, Omogo Valley, 1400 m, 11–18.viii.1980, S. Peck (1 ♂, 2 ♀, GUE). NEPAL. Katmandu, Godavari, 5000', 1.v.1967; 5400', 2.viii.1967; 6000', 12.viii.1967, Canadian Nepal Expedition (3 ♂, CNC); Taplejung Distr., Dobhan, c. 3500', spray-splashed rocks in River Maewa, 25.i.1962, R. L. Coe (1 ♂, BMNH). The latter specimen was listed in Deeming (1969) along with 2 specimens of *P. unio* as *Leptocera* (*Limosina*) sp. (1) near *paraminima* (Duda).

Etymology.—The specific epithet refers to the long, comb-like row of long bristles on the surstylus.

Comments.—This species is most easily recognized by its complex surstylus, distinctive male sternite 5, large cup-shaped spermathecae, and the unique internal sclerotization in the female abdomen. It is closely related to the Nearctic *T. pexa*, as indicated by the similar surstylus and pattern of ornamentation on the male fifth sternite. The deeply invaginated, cup-shaped spermathecae are more similar to those of *T. racovitza* and *T. sudetica* than to the long-cylindrical spermathecae of *T. pexa*, but this is interpreted as homoplasious similarity resulting from superficially similar modifications of the plesiomorphic long-cylindrical type of spermatheca.

***Terrilimosina smetanai* Marshall,**

NEW SPECIES

Figs. 23–30

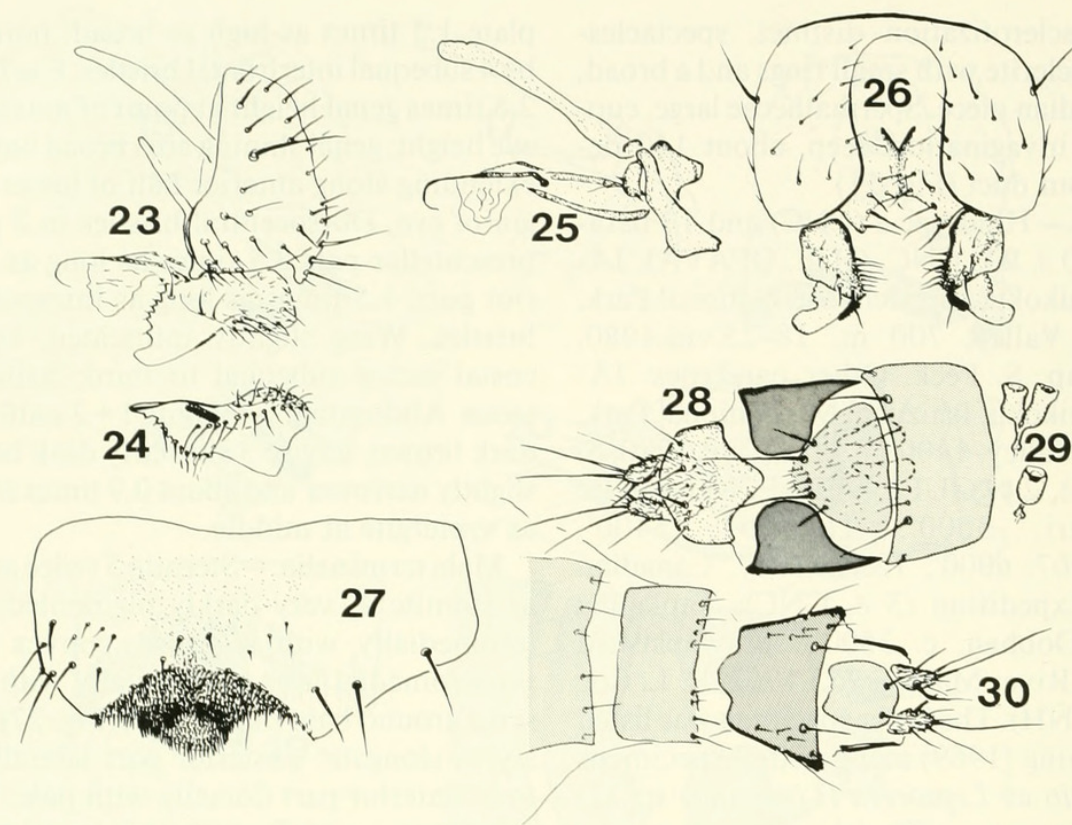
Description.—Body length 2.2–2.6 mm. Body dark brown to black, pruinose, minutely punctate; legs brown. Interfrontal

plate 1.5 times as high as broad, bordered by 4 subequal interfrontal bristles. Eye height 2.5 times genal height at point of maximum eye height; genal shining area broad but only extending along anterior half of lower margin of eye. Dorsocentral bristles in 2 pairs, prescutellar pair 2.5 times as long as anterior pair, 1.5 times as long as intrapostalar bristles. Wing slightly infuscated, second costal sector subequal to third; halter luteous. Abdominal syntergite 1 + 2 uniformly dark brown; tergite 3 similarly dark brown, slightly narrower and about 0.9 times as long as syntergite at middle.

Male terminalia.—Sternite 5 twice as long as sternite 4, very darkly pigmented; posteromedially with a setose, convex lobe; posteromedial lobe pale distally with dark setae around base of pale part (Fig. 27). Surstylus elongate; posterior part laterally setose; anterior part dorsally with pale, blunt serrations, ventrally with an internal comb-like row of short bristles (Fig. 24). Paramere distally broad, apex broadly bifid. Basiphallus short, broad relative to congeners, not extending ventrally (Fig. 25). Distiphallus very narrow, elongate; with proximal and distal ventral and dorsal sclerites; distal dorsal sclerite long and apically curved.

Female terminalia.—Tergite 8 completely pigmented, shining and bare medially, pruinose laterally and with very dark, bare lateroventral lobes. Epiproct subequal in length and width, weakly emarginate anteriorly, bare except for 2 posterior bristles (Fig. 30). Sternite 8 simple, entirely setulose, subequal in size to hypoproct; hypoproct convex anteriorly, setulose on posteromedial half only (Fig. 28). Spectacles-shaped sclerite visible as lightly sclerotized rings only. Spermathecae long-cylindrical, slightly widened and with a small evagination apically (Fig. 29).

Types.—Holotype ♂ (CNC) and 19 paratypes (13 ♂, 6 ♀, CNC, GUE, OPAVA). NEPAL. Below Thare Pati 3300 m, 13.iv.1981, pitfall trap on a clearing in a mixed *Abies*,



Figs. 23–30. *Terrilimosina smetanai*. 23, Male terminalia, left lateral. 24, Surstylus, ventral. 25, Aedeagus and associated parts. 26, Male terminalia, posterior. 27, Male sternite 5. 28, Female terminalia, ventral. 29, Spermathecae. 30, Female terminalia, dorsal.

Acer, *Rhododendron* forest, A. Smetana. Other paratypes. NEPAL. Between Ghopte and Thare Pati, 3200 m, 23–26.iv.1985, FIT, A. Smetana (100 ♂, 100 ♀, labeled as paratypes out of a much longer series, GUE, CNC); North slope above Syabru, intercept trap on wet meadow in subalpine formation, 3800 m, 17–19.iv.1985, A. Smetana (2 ♂, 2 ♀, GUE); Taplejung Distr., Sangu, c. 6200', mixed vegetation by stream in gully, xi.1961, R. L. Coe (1 ♂, BMNH, listed by Deeming (1969) as *Leptocera* (*Limosina*) sp. (1) near *schmitzi* (Duda)); Kuwapani, 2250 m, 6.iv.1984, I. Lobl, no. 6 (1 ♀, GM). PAKISTAN. Marghuzar, 1300 m, 8.v.1983, C. Besuchet—I. Lobl, No. 2b (1 ♂, 2 ♀, GM); Malam Jabba, 2500–2600 m, 18.v.1983, C. Besuchet—I. Lobl, No. 17a (1 ♂, GM); Murree, 2100 m, 5.vi.1983, C. Besuchet—I. Lobl, No. 40 (1 ♂, GM). The latter 5 specimens have not been examined by the author and are included as paratypes at the request of Dr. L. Papp, Hungarian Natural

History Museum, who has compared them to the above description and illustrations.

Etymology.—*Terrilimosina smetanai* is named after A. Smetana, the collector of much of the type series of this species and of many other important series of sphaerocerids from Nepal.

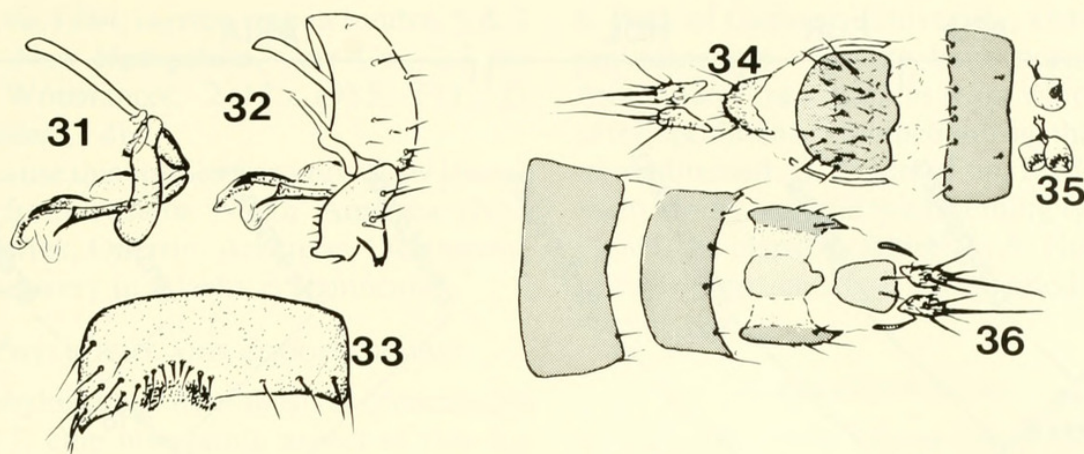
Comments.—This species is unique in the genus in having a completely sclerotized female abdominal tergite 8. This dark, lateroventrally shining sclerite is even distinctive on dried, pinned specimens. *Terrilimosina smetanai* is also easily recognized by its distinctive elongate distiphallus, short basiphallus, and elongate surstylus with a short internal comb-like row of bristles.

Terrilimosina unio Marshall,

NEW SPECIES

Figs. 31–36

Description.—Body length 1.4 mm. Body dark brown, pruinose; legs light brown. In-



Figs. 31–36. *Terrilimosina unio*. 31, Aedeagus and associated parts. 32, Male terminalia, left lateral. 33, Male sternite 5. 34, Female terminalia, ventral. 35, Spermathecae. 36, Female terminalia, dorsal.

terfrontal plate 1.5 times as high as wide, bordered by 4 short interfrontal bristles. Eye 2.5 times as high as gena at point of maximum eye height; anterior part of gena with a small triangular shining area. Dorsocentral bristles in 2 pairs, prescutellar pair twice as long as anterior pair; 1.5 times as long as intrapostalar bristles. Wing clear to faintly infuscated anteriorly, second costal sector 0.7 times as long as third; halter dark brown. Syntergite 1+2 with an anteromedial pale area and dark anterolateral patches; 1.5 times as wide and as long as tergite 3. Tergite 3 pale brown, very pale around its edges.

Male terminalia.—Sternite 5 pale posteromedially, with 2 spinulose lobes (Fig. 33). Surstylus laterally setulose at base; ventrally with a small anterior lobe and an elongate posteroventral lobe terminating in two short, stout bristles (Fig. 32). Paramere simple, broadest distally (Fig. 31). Basiphallus narrow, not extending ventrally beyond point of articulation with distiphallus. Distiphallus long, narrow; with a large, dark proximal dorsal sclerite and paler proximal lateroventral sclerites; distally with a finely spinulose membrane.

Female terminalia.—Tergite 8 with tripartite pigmentation, wide median area pale and shining, lateral areas pruinose, ventrolateral lobes shining brown; epiproct slightly longer than wide, anterior edge entire, bare except for 2 bristles (Fig. 36). Sternite

8 simple, darker and more than twice as large as hypoproct (Fig. 34). Hypoproct deeply emarginate anteriorly, setulose on posterior third. Spectacles-shaped sclerite visible as 2 large, lightly sclerotized rings. Spermathecae short cylindrical, bent and widened apically, with a distinct apical invagination (Fig. 35).

Types.—Holotype ♂ (BMNH). NEPAL. Taplejung Distr., river banks below Tamrang Bridge, c. 5500', x–xi.1961, R. L. Coe. Paratypes: NEPAL. Taplejung Distr., between Sangu and Tamrang, c. 5200', mixed shrubs in deep gorge, x–xi.1961, R. L. Coe (1 ♂, abdomen missing, BMNH); mixed plants by damp cliff in deep river gorge, i–ii.1962, R. L. Coe (1 ♂, 2 ♀, BMNH); JAVA. “Kandang Badok. v. Tjibodas, 18.viii.1922, Dr. Th. M. /1/6, 1922” (Chibodas, near Mt. Gede, 3000 m) (1 ♂, 3 ♀, UZMC).

Comments.—The holotype and one male paratype were among the specimens listed as *Leptocera (Limosina)* sp. (1) near *paraminima* (Duda) by Deeming (1969). Specimens of *T. longipexa* were also included in that series. Another paratype male and one female were included by Deeming (1969) as *Leptocera (Limosina)* sp. 2 near *schmitzi* (Duda). One type female was listed by Deeming (1969) under *Leptocera (Limosina)* sp. (2) near *paraminima* (Duda) with some uncertainty as to its placement. The distinctive pigmentation and size of both

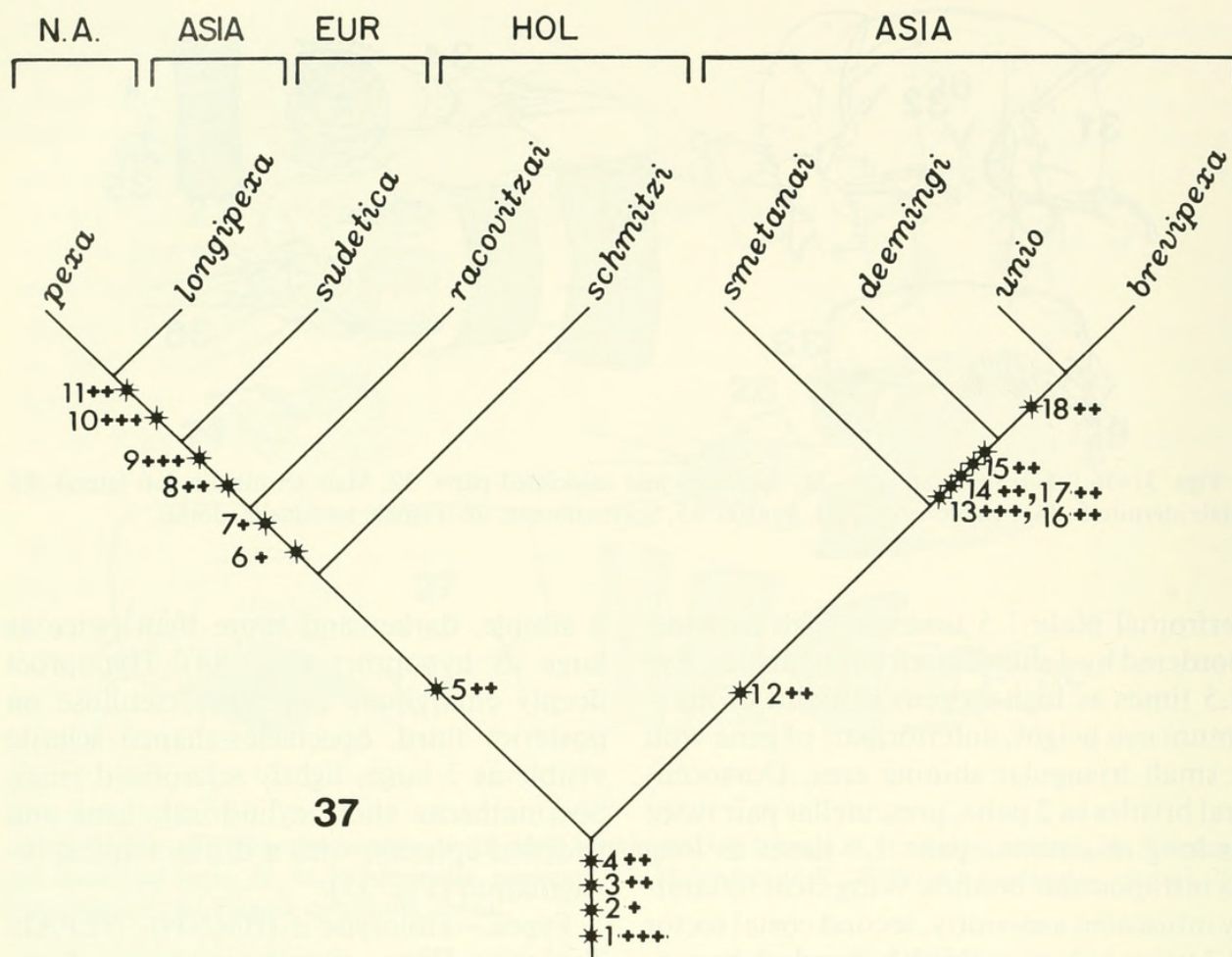


Fig. 37. Phylogenetic hypothesis for the genus *Terrilimosina*. Characters marked (+) are thought to be especially subject to misinterpreted polarity or homoplasy. Those marked (++) or (+++) are thought to have a higher probability of being true synapomorphies. The numbers refer to the following putative synapomorphies: 1, surstylus with a row of bristles. 2, discal cell rounded. 3, basiphallus short, frame-like. 4, distiphallus largely membranous. 5, row of bristles on surstylus comb-like with bristles long and appressed. 6, distiphallus shortened and distally expanded. 7, paramere basally broadened. 8, posteromedial setulae on male sternite 5 flattened. 9, basiphallus extending posteriorly beyond posterior junction between distiphallus and basiphallus. 10, flattened bristles of male sternite 5 in small, scale-like tufts. 11, surstylus short, with an internal comb of long bristles. 12, sternite 5 of male densely setose posteromedially. 13, distiphallus elongate, with additional distal sclerites. 14, subanal plate broadened. 15, hypoproct reduced, emarginate. 16, paramere distally enlarged. 17, comb-row of surstylus on ventral lobe. 18, greatly enlarged syntergite 1+2.

male and female syntergites 1+2 was the major character used to associate the sexes, an association confirmed by chaetotaxy, venation, eye:gena ratios and the congruent cladistic affinities of both male and female specimens listed above with male and female specimens of the closely related *T. brevipeza*.

Etymology.—The name *unio*, Latin for “one,” was chosen because the holotype was first recorded by Deeming as *Leptocera* (*Limosina*) sp. (1) near *paraminima* (Duda).

Terrilimosina pexa Marshall 1985

New distributional records.—UNITED STATES. Alaska, Elliot Highway, mi. 27.8, White Mountain Trail, 16–18.vii.1985, dung traps, S. Marshall; Chena Ridge Road, 5 mi. W Fairbanks, 27.vii–12.viii.1984, malaise trap in birch and spruce, S.&J. Peck; Chena Hot Springs, mi. 50 Hot Springs Road, 28.vii–12.viii.1984, FIT, spruce moss taiga, S.&J. Peck; 12 mi. E Summit, 86 mi. ENE Fairbanks, 54 mi. SW Circle Rt. 6, 1105 m,

6–13.vii.1984, carrion trap in tundra, S.&J. Peck. New Hampshire, Carr Co., 2.5 mi. NW Wonalancet, 2–17.x.1985, FIT, D. Chandler (1 ♂).

Because this species was previously known only from eastern North America (New Brunswick, Ontario, Arkansas, Oklahoma), its discovery in Alaska is significant.

PHYLOGENY AND ZOOGEOGRAPHY

A phylogenetic hypothesis is presented in Fig. 37. One interesting aspect of this hypothesis is the suggestion that *T. longipexa*, common to Nepal and Japan, shares a more recent common ancestor with the Nearctic species *T. pexa* with any other species. These species in turn form the sister group of a European species. The other major species group of *Terrilimosina* is entirely Asian or Oriental in distribution.

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S. Peck of Carleton University, Ottawa for providing me with the large numbers of Asian insect trap samples from which most of the specimens examined during this study were obtained. B. Pitkin of the British Museum kindly sent me the Deeming type material from Nepal. J. Roháček, A. Norrbom, and L. Papp read and commented on the manuscript.

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