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A New Species of the Genus *Lispe* LATREILLE, with Notes on Two Related Species, *L. assimilis* WIEDEMANN and *L. microptera* SÉGUY (Diptera, Muscidae)[1)]

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Abstract *Lispe pacifica* n. sp. from various parts of the Oriental region is described and figured. Notes on two related species, *L. assimilis* WIEDEMANN and *L. microptera* SÉGUY, are given based on a study of their types. *L. incerta* MALLOCH is a new synonym of *assimilis*.

Key words: *Lispe pacifica* n. sp.; *L. assimilis*; *L. microptera*; Muscidae; new synonym.

Introduction

A study of numerous specimens of the genus *Lispe* LATREILLE from the Oriental and Australasian regions, together with the types of most of the described species, has shown that the species "*assimilis*" as recorded by ourselves (*e. g.* PONT, 1977, 1989; KANO & SHINONAGA, 1977; SHINONAGA, 1978; SHINONAGA & AFZAL, 1989; SHINONAGA & KANO, 1991; TUMRASVIN & SHINONAGA, 1982) and also by other authors (*e. g.* MALLOCH, 1925; SNYDER, 1965; KURAHASHI, 1991) actually consists of two species. One of these, to which the name *assimilis* WIEDEMANN is correctly applied, is widespread from the Mediterranean subregion eastwards through the Oriental region, Indonesia, the Papuan subregion and into the Pacific. The other, which is a new species here described as *pacifica* n. sp., is known to us from the Ryukyu and Ogasawara Islands, Taiwan, Thailand and Malaysia.

In this paper, we describe this new species, record a revised distribution and synonymy of *assimilis*, and re-describe the related species *microptera* SÉGUY from Pakistan.

The following acronyms are used for the institutes where material is located:

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ANIC–Australian National Insect Collection, Canberra, Australia; BMNH–Natural History Museum, London, U. K.; BPBM–Bernice P. Bishop Museum, Honolulu, U. S. A.; MCSNV–Museo Civico di Storia Naturale, Venice, Italy; MNHNP–Muséum National d'Histoire Naturelle, Paris, France; NSMT–National Science Museum, Tokyo, Japan; USNM–U. S. National Museum, Washington, D. C., U. S. A.; UZMC–University Zoological Museum, Copenhagen, Denmark.

Lispe pacifica SHINONAGA et PONT, n. sp.

(Figs. 1–3)

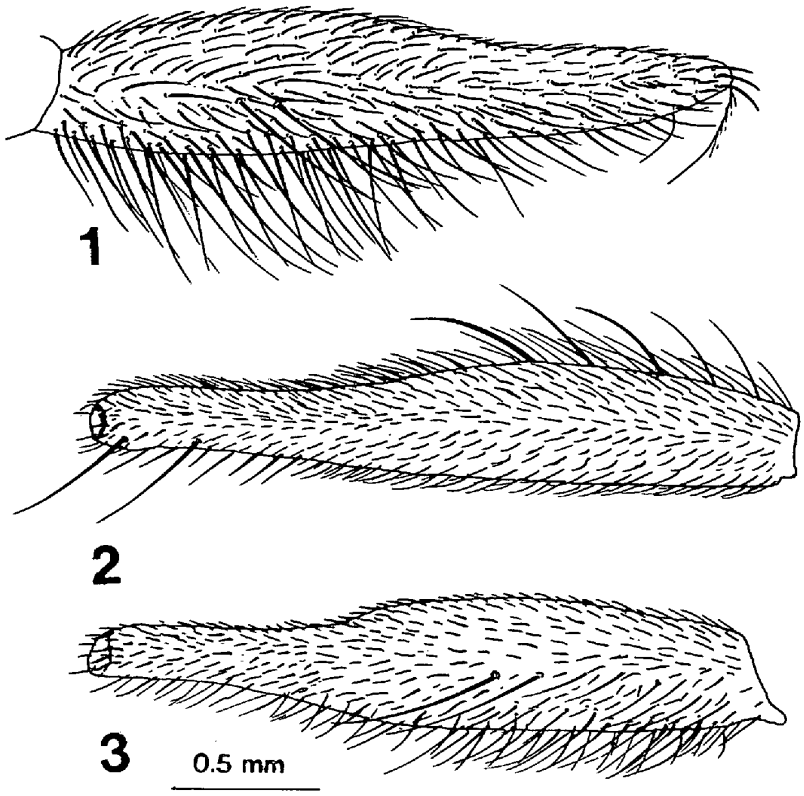
Lispe assimilis: KANO & SHINONAGA, 1977, 217 (Ryukyu Islands); SHINONAGA, 1978, 164 (Ogasawara Islands); TUMRASVIN & SHINONAGA, 1982, 198 (Thailand); KURAHASHI, 1991, 54 (on ship at Ocean Weather Station, 29°N, 135°E).

Male. Body length 6.0–7.5 mm. Greyish species.

Head: Frons broad, at narrowest point (just below lunula) about 0.35 of head-width, at widest part (at vertex) 0.38; frontal stripe black, frontal triangle brownish and reaching almost to lunula; parafrontalia black with short setae along entire length, lower part with silver pollinosity often yellow on margin; 3–4 inclinate *ori* and 2 reclinate *ors* present; parafacialia silver pruinose with several short setulae; antennae black, 3rd segment twice as long as 2nd; arista long plumose; palpi yellow; proboscis glossy. Thorax: Mesonotum black with greyish dust and 3 dark longitudinal stripes; *ac* 0+0; *dc* 2+4, *prst* and anterior 2 *post* pairs weak; *nt* 2; *pra* absent; *ps* 1; *sa* 2; *scut* 1 apical, 1 lateral; prosternum and propleuron bare; pteropleuron with short setulae; meso- and metathoracic spiracles yellowish brown; *stpl* 1+2, lower one equidistant from upper two; metathoracic spiracle with strong setae on posterior margin; hypopleuron bare. Wings: Hyaline; r_1 and r_{4+5} bare; m_{1+2} curved forward before wing-margin; upper and lower squamae creamy with concolorous marginal ciliae; haltere yellow to brown. Legs: Femora black, yellow at tip; tibiae partly to mainly yellowish, darker apicad; f_1 with a full row of long, fine *pv* setae; t_1 without *p*-seta; f_2 with numerous long bristles on ventral surfaces, the longest twice femoral depth; 2 preapical *p*; t_1 with 1 *pd*; f_3 with a row of *ad*, 2 *av* (at middle and before tip) and usually 1 short *pv* before tip; t_3 with 1 *ad*, 1 *av*, 1 *pd*; hind metatarsus without long bristles. Abdomen: black with greyish pollen; 2nd tergite without dark markings; 3rd and 4th tergites with large and unclear trapezoidal marks, grey anterolaterally; 5th tergite with a dark mark on middle part, broadly grey laterally; sternite 1 setulose.

Female: Body length 7.0–8.0 mm. General characters as in male. Frons 0.38–0.44 of head width; t_1 with *p*-seta; f_2 with several strong bristles on basal half of anterior surface (Fig. 2), and numerous erect setulae on anteroventral to posteroventral surfaces (Fig. 3); dark mark on 5th tergite divided by a grey stripe.

Holotype: Male, Mt. Maeshi, Ishigaki Is., Okinawa, 6 Nov. 1971, S. SHINONAGA (in NSMT).



Figs. 1–3. *Lispe pacifica*, n. sp. —— 1, Anterior view of male mid femur; 2, dorsal view of female mid femur; 3, anterior view of female mid femur.

Paratypes: 15 ♂, 56 ♀, same data as holotype; 32 ♂, Ohgiura, Chichi-jima, Ogasawara Is., 24 June 1972, S. SHINONAGA (5 ♂, 3 ♀ in BMNH; 2 ♂, 2 ♀ in BPBM; 2 ♂, 2 ♀ in MNHNP; 2 ♂, 2 ♀ in UZMC; 2 ♂, 2 ♀ in USNM).

Other specimens examined: RYUKYU ISLANDS. 3 ♂, Inoda, Ishigaki Is., 10 July 1974, S. SHINONAGA; 1 ♂, Kubuta, Yonaguni Is., 3 Aug. 1954, R. KANO; 1 ♀, Funaura, Iriomote Is., 20–21 Oct. 1971, S. SHINONAGA. OGASAWARA ISLANDS. 2 ♀, Kita-fukurozawa, Chichijima Is., 26 May 1973, R. KANO; 2 ♂, 3 ♀, Fukiage-dani, Chichijima Is., 25 May 1973, R. KANO; 3 ♂, 6 ♀, ditto, S. SHINONAGA; 10 ♂, 4 ♀, Kita-fukurozawa, Chichijima Is., 19 May 1973, S. SHINONAGA; 7 ♂, 5 ♀, ditto, R. KANO; 1 ♂, Fukurozawa, Chichijima Is., 13 May 1972, Y. KUSUI; 3 ♂, Fukiagedani, 18 June 1972, Y. KUSUI; 3 ♂, Fukiage-dani, 18 June 1972, Y. KUSUI. TAIWAN. 1 ♂, 1 ♀, Nanwan, Ping-tung Hsien, 4 Apr. 1965, S. TAKAGI; 1 ♂, Yen-Swei, 14 Oct. 1953, S. Y. LIU. MALAYSIA. 1 ♂, Ulo-gombach Road, 30 km E. Kuala Lumpur, 20 Oct. 1975, S. SHINONAGA. THAI-LAND. 5 ♂, Salt pond, Chon Buri, 25 Dec. 1975, S. SHINONAGA; 4 ♂, Doi Pui, 17 Dec. 1975, S. SHINONAGA; 1 ♂, Doi Inthanon, Chiang Mai, 19 Dec. 1975, H. SHIMA; 1 ♂, Pak Chong, 24 Dec. 1975, S. SHINONAGA; 2 ♂, Kasesart Univ., Ban Khen, 31 Aug. 1975, R. KANO.

Lispe assimilis WIEDEMANN, 1824

(Figs. 4–6)

Lispe assimilis WIEDEMANN, 1824, 51. Lectotype ♂, EAST INDIES, in UZMC (present designation, see below).

Lispe quadrilineata MACQUART, 1835, 315. Syntype(s) ♀, FRANCE, Bordeaux, lost.

Lispa incerta MALLOCH, 1925, 337. Holotype ♂, AUSTRALIA, Eidsvold, in ANIC (not seen). **N. syn.**

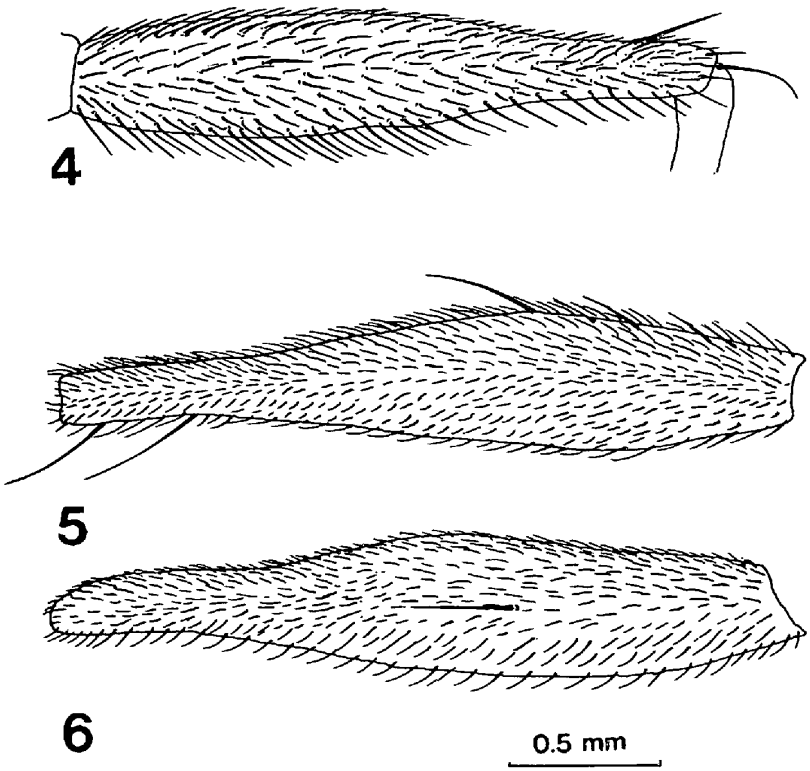
Lispe inexpectata CANZONERI et MENEGHINI, 1966, 139. Holotype ♂, TURKEY, Tarsus, in MCSNV (not seen).

The species *assimilis* and *pacifica* are very similar in general appearance, but can be separated by the leg chaetotaxy as follows:

—♂: mid femur with long fine ventral setae on the anterior through anteroventral to posteroventral surfaces, the row along the posteroventral surface complete and the longest setae almost equal to twice femoral depth (Fig. 1); fore femur with a complete row of fine curved hair-like setae that equal femoral depth; hind femur with a row of longish fine anteroventral setulae slightly longer than half femoral depth; fore tibia without seta. ♀: mid femur with long, erect, rather dense setulae on anteroventral to posteroventral surfaces which in basal half almost equal femoral depth, becoming shorter toward apex (Fig. 3); in basal half of anterior surface with several strong subequal setae (Figs. 2–3) ..... *pacifica* SHINONAGA et PONT, n. sp.

—♂: mid femur without anteroventral setae, and with only short posteroventral setulae which even in basal part do not equal half femoral depth (Fig. 4); fore femur with long posteroventral setae only in apical half, where there are 4–5 setae equal to femoral depth, those in basal half short and setulose; hind femur with anteroventral setulae short and decumbent; fore tibia usually with a posterior seta. ♀: mid femur with only short decumbent setae on anteroventral to posteroventral surfaces (Fig. 5); in basal half of anterior surface with 1 strong seta and a few much shorter ones (Figs. 5–6) ..... *assimilis* WIEDEMANN

Specimens examined: PHILIPPINES. 1 ♂, Tagun, Davao, Mindanao, 4 Feb. 1975, S. SHINONAGA; 2 ♂, 2 ♀, Basey, Samar, 17–18 Feb. 1975, S. SHINONAGA; 1 ♀, Mindanao, Atugan Riv. Valley, Bukidon, 23 Apr. 1968, D. E. HARDY (BPBM). MALAYSIA. 1 ♂, Bukit Mandul, 20 km W. of Kuala Lumpur, 1 Nov. 1975, S. SHINONAGA. INDONESIA. 44 ♂, 15 ♀, Ambon, 0–150 m, 2–6 Dec. 1973, R. KANO & S. SHINONAGA; 1 ♂, 2 ♀, Kairatu, Ceram, 0–300 m, 4–5 Dec. 1973, S. SHINONAGA; 1 ♂, 1 ♀, Soerabaya, Java, 20 July 1906, E. BRUNETTI; 1 ♂, Macassar, Sulawesi, no data, A. R. WALLACE (BMNH). SOLOMON ISLANDS. 1 ♂, 1 ♀, Honiara, Guadalcanal, 21–23 Jan. 1978, S. SHINONAGA. VANUATU (NEW HEBRIDES). 1 ♂, 1 ♀, 10 km NW of Vila, Efate, 12–14 Feb. 1978, S. SHINONAGA; 1 ♂, ditto, H. SHIMA. FIJI. 1 ♂, 2 ♀, Nandi, Viti Levu, 12 Mar. 1978, S. SHINONAGA; 1 ♂, 1 ♀, ditto, H. KURAHASHI; 1 ♂, ditto, 1 Mar. 1978, S. SHINONAGA; 1 ♂, 2 ♀, 70 km W. of Suva, 0–200 m, 2 Mar. 1978, H. KURAHASHI; 1 ♀, Natova, Apr.



Figs. 4–6. *Lispe assimilis* WIEDEMANN. —— 4, Anterior view of male mid femur; 5, dorsal view of female mid femur; 6, anterior view of female mid femur.

1918, R. VEITCH (BEZZI, 1928: 174); 1 ♀, Lautoka, 12 Feb. 1919, W. GREENWOOD (BEZZI, 1928: 174); 1 ♀, Nanaka, 20 Aug. 1943, R. A. LEVER; 1 ♀, Nandi, Viti-Levu, Feb. 1945, D. G. HALL (USNM). WESTERN SAMOA. 3 ♂, 19 ♀, Apia, Upolu Is., 14 Mar. 1978, H. SHIMA; 1 ♂, 12 ♀, Apia, Upolu Is., 14–16 Mar. 1978, S. SHINONAGA. INDIA. 1 ♂, Calcutta, 25–30 Jan. 1909, E. BRUNETTI; 5 ♂, 6 ♀, A. P., Hyderabad, 26 Oct.–5 Nov. 1971, A. C. PONT; 1 ♂, 1 ♀, Jubbelpore, 3 May 1905, E. BRUNETTI; 1 ♂, 1 ♀, Calcutta, 1–12 Jan. 1909, E. BRUNETTI; 4 ♂, same data, 20 Dec. 1908; 9 ♂, 15 ♀, same data, 25–30 Jan. 1909; 2 ♀, same data, 25 Mar. 1907; 2 ♂, same data, 22 Jan. 1908; 2 ♀, Calcutta environs, Dec. 1908, E. BRUNETTI (BMNH); 1 ♂, Chabua, Assam, 25 Nov. 1943, D. E. HARDY (USNM). IRAN. 1 ♂, Mazan deran, Behshahr, Tin Tash, 20 Aug. 1970, R. H. ALLEN. PORTUGAL. 4 ♂, Nazare, 7 July 1961, E. A. FONSECA; 4 ♂, 6 ♀, Carcavelos, 14 July 1967, E. A. FONSECA. CHINA. 1 ♀, Suifu, Szechuen, D. C. GRAHAM (USNM). AUSTRALIA. 7 ♀, Warriewood, N. S. W., 2 Dec. 1956, W. W. WIRTH; 3 ♀, Argalong, Buccleugh, N. S. W., T. T. VAUGHAAN-SHERRIN (USNM); 4 ♂, 19 ♀, Criff Creek, on wetmud, 29 Mar. 1906, W. STALKER (BMNH) (Det. as *incerta* by MALLOCH). PAKISTAN. 1 ♂, Karachi, no further data. SRI LANKA. 4 ♀, Periakulam, 1 Mar. 1891 and 28 June 1891, J. W. YERBURY (Det. as *modesta* by

MALLOCH); 1 ♀, Mahaganay, 20 Dec. 1891, J. W. YERBURY (Det. as *modesta* by MALLOCH); 1 ♀, Trinocomali, 21 Sept. 1890, J. W. YERBURY (Det. as *modesta* by MALLOCH); 2 ♀, Trincomali, Hot Wells, 27 July 1890, J. W. YERBURY (Det. as *modesta* by MALLOCH) (BMNH). BURMA. 3 ♂, 4 ♀, Rangoon, 23 Dec. 1904–Jan. 1905, E. BRUNETTI (1 ♂ det. by STEIN as "*assimilis* var. *modesta*") (BMNH). TONGA. 3 ♂, 5 ♀, Tongatapu, Government Experimental Farm, various dates 18 Nov. 1974–Jan. 1975, W. H. PIERCE; 1 ♀, Tongatapu, Nuku' alofa, 0–100 m, Dec. 1979, N. L. KRAUS (BMNH).

The species occurs widely in the Mediterranean subregion (Turkey, Italy, Sardinia, Portugal, south-west France, Morocco, Tunisia, Egypt (see PONT, 1986, 184), and extends through the Middle East into Oriental region, where it is widespread right through the region on to northern Australia and the Pacific (PONT, 1977, 1989; SHINONAGA & AFZAL 1989; SHINONAGA & KANO, 1991).

Notes on the synonymy

Lispe assimilis. We have each studied WIEDEMANN's syntype series in UZMC. There are 3 ♂ and 1 ♀ syntypes. 1 ♂, without labels, belongs to *assimilis* as defined in this paper; we designate it herewith as lectotype. 1 ♀ is conspecific with the lectotype, while 2 ♂ belong to *Lispe orientalis* WIEDEMANN. These have been labelled as paralectotypes. The type-series will be discussed in more detail by PONT (in prep., a).

Lispe quadrilineata. Described by MACQUART as having a forwardly-curved vein m_{1+2}, this can only be *longicollis* MEIGEN (yellow tibiae) or *assimilis*, and MACQUART's description agrees best with *assimilis* (see PONT, 1986, 184; in prep., b).

Lispe incerta. We have not studied MALLOCH's holotype, but it is clear from his description of this species and from his notes on *assimilis* that his "*assimilis*" is actually our *pacifica*, with long anteroventral to posteroventral setae on the male mid femur, and that his *incerta* is the true *assimilis*, with only decumbent setulae on the ventral surface of the male mid femur. MALLOCH's interpretation has been followed by other authors, including SNYDER (1965).

Lispe inexpectata. CANZONERI and MENEGHINI (1966) stated that this species differed from *assimilis* by the 2–4 posteroventral setae in the apical part of fore femur which are "short and strong, quite different from the long fine posteroventral setulae of *assimilis*". From these remarks it is clear that their "*assimilis*" is actually *pacifica*, and that their *inexpectata* is the true *assimilis*. This synonymy was proposed by PONT (1986, 184).

Lispe microptera SÉGUY, 1937

(Fig. 7)

Lispe microptera SÉGUY, 1937, 458. Holotype ♂, PAKISTAN, Karachi, in MNHNP (seen by S. SHINONAGA).

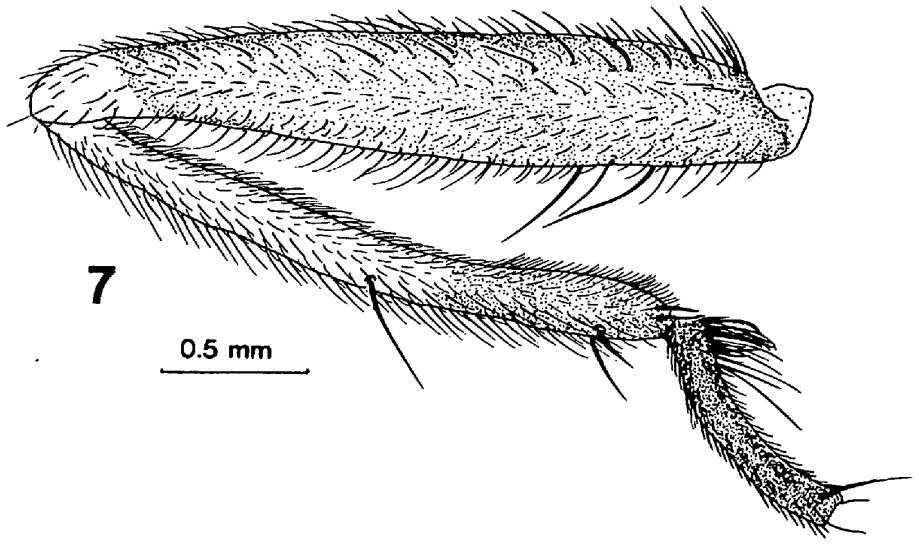


Fig. 7. *Lispe microptera* SÉGUY, anterior view of male hind leg (holotype).

Male. Body length 7 mm in original description, posterior part of abdomen broken; greyish species, similar to *L. assimilis* and *L. pacifica* n. sp. Head: Frons broad, about 1/3 of head-width (0.3–0.4), black with frontal triangle greyish; parafrontalia black with 3 *ori* and 2 inclinate *ors* present; antennae black, 3rd segment about 1.2 times as long as 2nd; arista short plumose; palpi brownish. Thorax: Grey with silvery pollen; mesonotum and scutellum black; *ac* 0+1; *dc* 2+3; *h* 2; *ph* 0; *prs* 1; *ia* 0+2; *nt* 2; *sa* 1; *scut* 1 apical and 1 lateral; *pra* absent; propleuron bare; pteropleuron setulose. Wings: Hyaline; veins dark brown; r_1 and r_{4+5} bare; m_{1+2} curved forward before wing-margin; haltere brown; squamae yellowish-white, lower squama tongue-shaped with concolorous marginal cilia. Legs: Femora black, knees brown; tibiae dark brown; tarsi black; t_1 with *p*-seta; hind metatarsus with numerous ventral setulae in basal part (Fig. 7). Abdomen: Black. Genitalia unknown.

Remarks. From the original description, one of the authors (S. S.) thought that this species might not be distinct from *assimilis*. However, examination of the type specimen confirms that this is good species and not the same as *assimilis*.

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