

✓ **NEW AND LITTLE KNOWN SPECIES
OF *LEUCOPHENG* MIK, 1886
(DIPTERA : DROSOPHILIDAE)
FROM SOVIET FAR EAST AND JAPAN**

Vasily S. SIDORENKO

Institute of Biology and Pedology, Far East Division USSR
Academy of Science, Vladivostok-22, USSR

Key words : new species, new locations, USSR, Japan.

Résumé. — *Leucophenga* nouveaux ou peu connus (Diptera : Drosophilidae) d'URSS et du Japon. — *Leucophenga japonica*, n. sp. et *Leucophenga todayi*, n. sp. sont décrites. La description de *L. stackelbergi* Duda, 1934 est complétée. *L. sorii* Kang, Lee & Bahng, 1965 et *L. quadripunctata* (de Meijere, 1908) sont signalées pour la première fois d'URSS.

Summary. — *Leucophenga japonica*, sp. n. and *Leucophenga todayi*, sp. n. are described. Additional description of *L. stackelbergi* Duda, 1934 is given. *L. sorii* Kang, Lee & Bahng, 1965 and *L. quadripunctata* (de Meijere, 1908) are recorded for the first time from the USSR.

About 170 species of the genus *Leucophenga* Mik have been hitherto described from various parts of the world, mainly from tropical and subtropical regions (Wheeler, 1981, 1986). Nineteen species are known from the Soviet Far East and Japan. This article adds two new species : one from Ussuri-region and Japan and the other from Japan.

Materials and methods

Part of the material for this study was collected by sweeping in various regions of the Soviet Far East. Japanese specimens were sent by Dr. M.J. Toda (Sapporo, Japan). Depositories, with their abbreviation as used throughout the text are as follows : (EHU) The Entomological Institute, Hokkaido University, Sapporo, Japan ; (IBP) Institute of Biology and Pedology, Far East Division USSR ; (MNHU) Museum für Naturkunde der Humboldt-Universität, Berlin, DR.

TAXONOMIC DESCRIPTIONS

✓ *Leucophenga (Leucophenga) japonica* Sidorenko, sp. n. ornato fr
Leucophenga sp. 4 : Beppu et al., 1977-14.

The new species is closely related to *L. quadripunctata* (Meijere, 1908) especially in wing coloration but differs from it by coloration of the abdomen and by having 9 bristles on the epandrium (4 in *L. quadripunctata*).

Holotype male : JAPAN, Morioka, Iwate Pref., 1/8-X-1980 (coll. M.J. Toda) (EHU).
Paratype : Japan, male, Lake Tōya, Hokkaido, 8-VIII-1978 (coll. M.J. Toda) (IBP).

Male. — *Head.* Eye red, bare. Antenna yellowish brown, second joint with prominent seta. Arista with 6 upper and 3 lower rays including small fork. Palpus yellow; slender, with 5 prominent setae, apical one longest. Periorbits yellow. Frons yellowish brown, with 12 fine frontal bristles, about one third as broad as head. Face yellow; carina flat. Clypeus yellowish brown. Cheek yellowish brown, about one eighteenth as broad as greatest diameter of eye. orb_2 as long as orb_3 ; only one prominent vi ; second oral bristle about one third as long as vi .

Thorax. Mesoscutum and scutellum yellowish brown. Thoracic pleura yellow with obscure spot. Humerus yellow; hu 2, upper longer. $Prsc$ long. Ac in about 12 irregular rows. Cross distance of dc more than 4 times length distance. Anterior scut divergent, posterior ones convergent. Sterno-index about 0.8.

Legs yellow; preapicals and apicals on all three tibiae.

Wing (fig. 1) hyaline with 4 black spots, one on each crossvein, one at the apex of R_{2+3} , large one at subbasal region. C-index : 2.2; 4C : 1.5; 4V : 2.2; 5x : 0.8; Ac : 3.4; Cx : 0.8; m : 0.2. C_3 -index : 0.96. C_1 bristles : 2, equal. Halteres white.

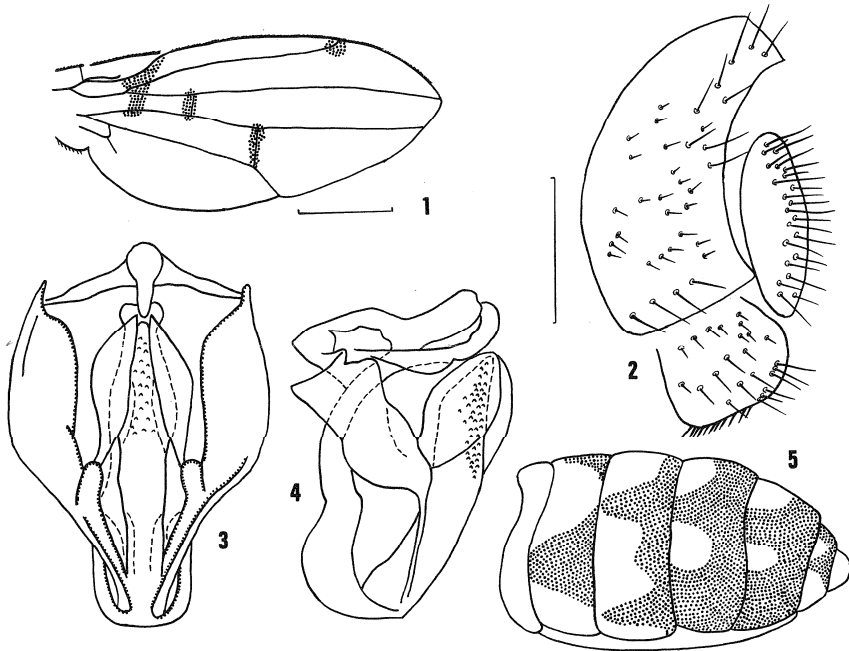


Fig. 1 to 4, *Leucophenga (Leucophenga) japonica*, sp. n. — 1, wing. — 2, periphallallic organs, lateral view. — 3, 4, phallic organs, dorsal and lateral views. — Fig. 5, *Leucophenga (Leucophenga) stackelbergi* Duda, abdomen, lateral view (Scaleline = 1 mm in 1, 0.14 mm in 2-4, 6-9).

Abdomen. Tergite nearly entirely black. First tergite entirely yellow; second one with anteromedial and lateral yellow spots; third tergite with narrow yellow band anteriorly and lateral small yellow spots. Average body length : 4.2 mm.

Periphallallic organs (fig. 2). Epandrium pubescent with 9 bristles (in 2 rows) in upper part. Surstylus pubescent almost quadrate with numerous bristles. Cercus separate from epandrium, elongate, with about 20 bristles.

Phallic organs (fig. 3, 4). Aedaegus with scaly sculpture on entire surface. Anterior paramere leaf-like, bare. Posterior paramere strongly chitinized, with basal bifurcated arms. Novasternum apically pointed.

Distribution. — Japan (Hokkaido, Honshu).

✓ *Leucophenga (Leucophenga) todai* Sidorenko, sp. n.

maculate pr

Leucophenga sp. 1 : Beppu et al., 1977 : 14.

This species is closely related to *L. stackelbergi* Duda, 1934 but differs from it by the larger body size and Ac-index.

Holotype male : USSR, Primorskij kraj, 15 km SWW Nezhino, River Ananevka, 10-VII-1989, ex *Polyporus* sp. (coll. V.S. Sidorenko) (IBP). **Paratypes** : USSR, male and 6 females, same data as holotype, 9/11-VII-1989; female, Primorskij kraj, Sukhanovskij Pass, 26-V-1987 (coll. V.S. Sidorenko). — JAPAN, male, Tomakomai, Hokkaido, 23-VIII-1988; female, same data, 9-VIII-1983; female, Sapporo, Hokkaido, 31-VIII-1982; male, Lake Tōya, Hokkaido, 7-VIII-1985 (coll. M.J. Toda) (IBP & EHU).

Male and female. — *Head.* Eye red, bare. Antenna yellowish brown, third joint (below base of arista) brown. Arista 6-7 upper and 2-3 lower rays including small fork. Palpus yellow, slender; apex yellowish brown, with 4 prominent setae. Periorbits yellow. Frons yellowish brown with about 10 fine frontals, about two fifths as broad as head. Face yellow. Clypeus yellowish brown. Cheek yellow, about one eighteenth as broad as greatest diameter of eye. Orb_2 , approximately, as long as orb_3 . Only one prominent vi ; or_2 about one half as long as vi .

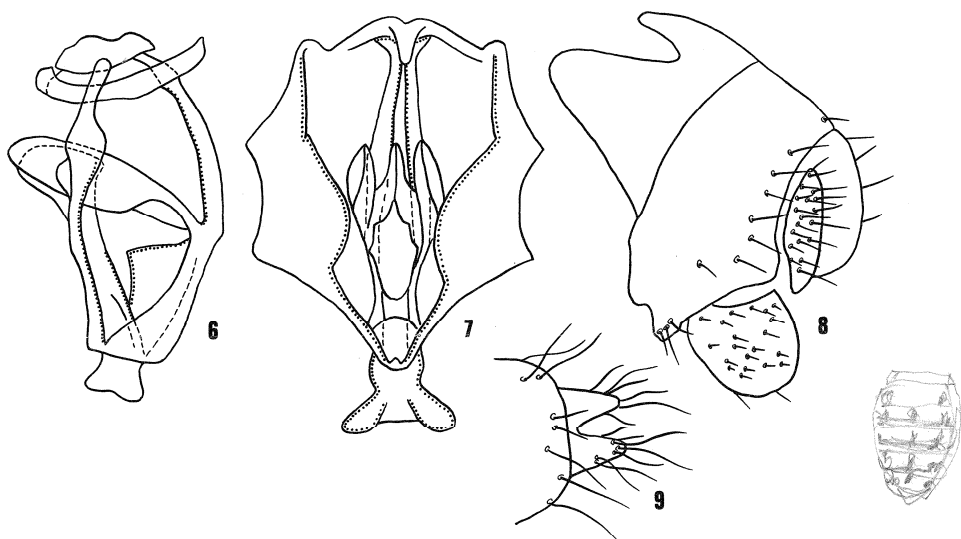


Fig. 6 to 9, *Leucophenga (Leucophenga) todai*, sp. n. — 6, 7, phallic organs, lateral and dorsal views. — 8, periphallalic organs, lateral view. — 9, egg-guides, ventral view.

Thorax. Mesoscutum and scutellum uniformly brown. Thoracic pleura yellowish brown with brownish black longitudinal stripe. Humerus yellowish brown, hu 2, upper longer. Prsc long. Ac in about 12 irregular rows. Cross distance of dc more than 3 times the length. Anterior scut divergent. Sterno-index about 0.9.

Legs whitish yellow; preapicals and apicals on all three tibiae.

Wing membrane tinged slightly with greyish brown, toward anterior margin darker. Cross-vein margined slightly with greyish brown. R_1 dark. C-index : 2.8; 4C : 1.0; 4V : 2.0; 5x : 1.3; Ac : 2.6; Cx : 0.9; m : 0.2. C_3 -index : 0.8. C_1 bristles 2, equal. Halteres whitish yellow.

Abdomen. Tergites yellowish brown. Second tergite with two laterodorsal black spots. Third to fifth tergites with black bands along posterior margin; black stripes on each tergite medially and laterally projected forward. Middle projection reaches anterior margin on fifth tergite only. Sixth tergite with three black spots : two broad lateral spots and one small medially. Seventh tergite with two small lateral black spots. Average body length : 3.5-4.0 mm.

Periphallalic organs (fig. 8). Epandrium yellowish brown, with 5 bristles at middle to upper part, 2 in lower part. Surstylus pubescent, ovoid, with 2 bristles on ventral margin. Cercus separate from epandrium, elongate, with 20 long bristles.

Phallic organs (fig. 6, 7). Aedeagus apparently bare, cylindrical, apically pointed in ventral view. Anterior paramere yellowish grey, bare. Posterior parameres strongly chitinized and slightly arcuate. Novasternum apically pointed.

Egg-guides (fig. 9) proximally fused to each other, with several long and numerous fine bristles.

Distribution. — USSR, Far East. — JAPAN (Hokkaido).

Remarks. This species is named in honor of Dr. M.J. Toda (Sapporo, Japan).

√ *Leucophenga (Leucophenga) stackelbergi* Duda, 1934

Leucophenga stackelbergi Duda, 1934 : 40.

Thorax. Cross distance of dc more than 2.5 times of length distance. Sterno-index : 0.75.

Legs yellow; preapicals on middle and hind tibiae, apical on middle one.

Wing indices : C : 3.0; 4C : 1.0; 4V : 1.0; 5x : 1.3; Ac : 2.0; Cx : 1.0; m : 0.22. C₃-index : 0.75. C₁ bristles 2, equal. Halteres white.

Abdominal tergites (fig. 5) yellow. Second tergite with black spots, third to fifth tergites with black bands along posterior margin.

Material examined. — **Holotype female** : USSR, “pv Rjabokon, S. Chanka, Ussur. kraj, 18-VII-1927, Stackelberg” / Ussuri-region, South coast of Lake Chanka, Peninsula Rjabokon /, “604”, “*Leucophenga stackelbergi* sp. n. female? det. Dr. O. Duda Typus” (MNHU).

Other material examined. — Female, Primorskij kraj, Rjazanovka, 75 km SW Vladivostok, 19-VI-1987 (coll. V.N. Makarkin); female, Amurskaja oblast, Khinganskij Preserve, Kundur, 23-VII-1988 (coll. V.S. Sidorenko) (IBP).

Distribution. — USSR : Far East.

√ *Leucophenga (Leucophenga) quadripunctata* (de Meijere, 1908)

Drosophila quadripunctata de Meijere, 1908 : 154.

Leucophenga quadripunctata : Duda, 1924 : 186.

Material examined. — USSR, 2 females, Primorskij kraj, Jakovlevka, ex *Peziza* sp., 28-VI-1986 (coll. V.S. Sidorenko). — JAPAN : male, Sapporo, Hokkaido, 30-VI-1988; male, Hiroshima-cho, Hokkaido, 15-VI-1984; male, Tomakomai, Hokkaido, 27-VII/3-VIII-1983; female, Tomakomai, Hokkaido, 27-VII-1983; male, Morioka, Iwate Pref., 5-X-1980; female, Kiyosumi, Chiba Pref., 16-X-1980; female, Ashu, Kyoto-fu, 21-V-1987 (coll. M.J. Toda) (IBP).

Distribution. — USSR (new record) : Far East. — JAPAN (Hokkaido, Honshu), S. Korea, Hong Kong, Taiwan, China, Thailand, Malaysia, Indonesia, Australia.

√ *Leucophenga (Leucophenga) sorii* Kang, Lee & Bahng, 1965

Leucophenga sorii Kang, Lee & Bahng, 1965 : 98.

Material examined. — USSR, male, Primorskij kraj, Gogolevka, 3-VIII-1986; female, Ussurijskij Preserve, valley of River Komarovka, ex *Pleurotus cornucopiae* (?), 10-VIII-1988; female, 15 km SWW Nezhino, River Ananevka, 10-VI-1989 (coll. V.S. Sidorenko). — JAPAN : 3 males, 1 female, Sapporo, Hokkaido, 30-VI-1988 (coll. M.J. Toda) (IBP).

Distribution. — USSR (new record) : Far East. — JAPAN (Hokkaido). S. Korea.

Acknowledgements

My sincere thanks are due to Dr. H. Schumann (Berlin) for the sending type of *L. stackel-*

bergi and Dr. M.J. Toda (Sapporo) for the loan material. I am very grateful to Dr. M.J. Toda for remarks on part of manuscript.

LITERATURE CITED

- BEPPU K., KANEKO A., TODA M.J. & KIMURA M.T., 1977. — Methods in the studies of wild drosophilid flies in Hokkaido. 2. Key to species of *Drosophilidae* in Hokkaido, with a supplementary notes on phylogeny. — *Seibutsu Kyozai*, 12 : 1-40 (In Japanese).
- DUDA O., 1924. — Beitrag zur Systematik der Drosophiliden unter besonderer Berücksichtigung der Paläarctischen u. orientalischen Arten (Dipteren). — *Arch. Naturgesch.*, 90 (A). 3 : 172-234.
— 1934. — Fam. 58 g. *Drosophilidae* : 1-64 in : LINDNER, E. (ed.) : Die Fliegen der Palaearctischen Region, Stuttgart.
- KANG Y.S., LEE T.J. & BAHNG K.W., 1965. — Two new species of the *Drosophilidae* from Korea. — *Annot. zool. japon.*, 38 : 97-100.
- MEIJERE J.C.H. de, 1908. — Studien über südostasiatische Dipteren. II. — *Tijdschr. Ent.*, 51 : 103-180.
- WHEELER M.R., 1981. — The *Drosophilidae* : A taxonomic overview. 3a : 1-91 in : ASHBURNER M., CARSON H.L. and THOMPSON J.N. (eds.), *The genetics and biology of Drosophila*. Academic Press, London.
— 1986. — 40. Additions to the Catalog of the World's *Drosophilidae*. 3° : 395-409, *ibidem*.