

# The Xylophagidae of Japan (Diptera)

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The Japanese *Xylophagus* is revised. It contains 4 species of which 2 seem to be new to science. It has been proved that *X. omogensis* Miyatake is a synonym of *X. matsu-murai* Miyatake (which was proposed as a new name for *X. maculatus* Matsumura).

The following symbols indicate the institutions in which the specimens are stored: HU (Hokkaido University, Sapporo), U. OP (University of Osaka Prefecture, Sakai), EU (Ehime University, Matsuyama), KU (Kyushu University, Fukuoka), KA. U (Kagoshima University, Kagoshima), USNM (U. S. National Museum, Washington, D. C.), and BM (British Museum (Nat. Hist.), London).

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## Genus *Xylophagus* Meigen

*Erima* Meigen, 1800, Nouvelle Classif., p. 21. Rejected name.

*Xylophagus* Meigen, 1803, Illig. Mag., 2: 266.

*Pachystomus* Latreille, 1809, Gen. Crust. et Ins., 4: 286.

*Archimyia* Enderlein, 1920, In Brohmer, P., Fauna von Deutschland, Ed. 2, p. 281.

*Anaxylophagus* Malloch, 1931, Ent. Soc. Wash. Proc. 33: 216. New Synonymy.

Body slender and resembling certain Ichneumon flies; eyes widely separated in both sexes; front and face each with sides parallel or roughly so, and latter as wide as or narrower than former; the part, which corresponds to facial swelling, is flat and appears to be not over 1/2 times as long as face; vertex distinctly or more or less concave; cheeks well developed below eyes; in ♀ area around antenna produced forward; antennal segment 1 longer than wide, segment 2 as long as or shorter than wide, and flagel-

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lum composed of 8 (rarely 7) divisions of which the last obtuse at tip; palpus 2-segmented. Mesonotum not strongly arched; postscutellum longer than scutellum. Tibial spurs 1 : 2 : 2. Five posterior cells present; 4th posterior cell widely open while anal cell closed at or before wing margin; veins  $R_{1+2}$  and  $R_3$  closely situated to each other at apices; vein  $R_4$  much shorter than 2nd section of  $R_4+R_5$ ; costa continuing around the wing. In ♂ abdomen with 7 visible segments (8th segment small and concealed by the 7th), and in ♀ abdominal segments 7-8 forming an ovipositor. In ♂ genitalia, epanthrium large and its posterior margin rounded, cerci small, hypandrium fused with basistyle which is large, dististyle rather small and simple. Pile on body short and thin.

Type-species: *Nemotelus cinctus* De Geer.

This genus is at once distinguishable from the genera of Rachiceridae, Coenomyiidae, Rhagionidae, and Solvidae (= Xylomyidae) by the shape of antenna.

Malloch et al. (1931) retained *Archimyia* Enderlein (type-species: *Xylophagus ater* Meigen) and *Anaxylophagus* Malloch (type-species: *Xylophagus nitidus* Adams) as subgenera. But it seems that the length of 1st antennal segment (which is 3 times or more as long as wide in *Archimyia* but 2 times or less in *Xylophagus* s. str.) and the presence of a small rounded tubercle on the inner side of hind coxa (which is a diagnosis of *Anaxylophagus*) are of not more than specific importance.

In the description, the antennal segment 1 was measured along mid-outer surface and the segment 2 and flagellum along mid-inner surface.

#### Key to species of *Xylophagus* known from Japan

1. Occiput, sides of mesonotum, and pteropleura without pollen ..... 2
- Occiput, whole surface of mesonotum (except humeral callus), and pteropleura (except antero-upper part) pale gray pollinose; antennal segment 1 less than twice as long as wide and about 1/2 as long as distance from antenna to median ocellus.....  
..... *merus* n. sp.
2. Metapleura pale gray pollinose; pile on abdomen pale in color in both sexes; antennal segment 1, 3 times or usually less as long as wide, and about as long as or shorter than distance from antenna to median ocellus ..... 3
- Metapleura without pollen; pile on abdomen black in ♀ but pale in ♂; antennal segment 1 over 3 times as long as wide and longer than distance from antenna to median ocellus ..... *matsumurai*
3. Metapleura wholly pilose; vertex and coxa pale gray pollinose; apical margin of wing in ♀ bordered with dark brown; antenna over 3 times as long as distance from antenna to median ocellus ..... *albopilosus*
- Pile on metapleura is confined to posterior part; vertex and coxa without pollen; apical margin of wing not bordered or practically so; antenna less than 3 times as long as distance from antenna to median ocellus ..... *nudatus* n. sp.

#### *Xylophagus albopilosus* Miyatake

(Figs. 1, 7, 11)

*Xylophagus albopilosus* Miyatake, 1965, Trans. Shikoku Ent. Soc. 8: 107.

This species may be distinguished from *sachalinensis* Pleske, 1925 in which "Abdomen...

... ; dans ses parties latérales bordé de poils noirâtres. Ventre....., pilosité rare, foncée." and from *ater* Meigen, 1804 in which metapleura has no distinct pile, 1st antennal segment is 3-4 times as long as wide, and in ♂ *mesonotum* practically has no pollen. It may be separated from *nudatus* by the characters given in the key.

The specimen (1♀, Kifune, Kyoto-Pref., 1. v. 1938, S. Horio) described by Koizumi (1946) as *ater* Meigen seems to belong in *albopilosus*.

♀. Similar to *matsumurai* except as follows: Head: Vertex pale gray pollinose; pile on ocellar triangle, vertex, occiput, cheeks, palpus, and proboscis pale; space between antenna and eye about equal to width of ocellar triangle (1.0-1.2 times); space between antennae about 1/2 width of ocellar triangle (0.5-0.6 times); antenna about 3 times (3.2-3.3 times) and its segment 1, which is 2-2 1/2 times as long as wide, somewhat less than (0.8 times) distance from antenna to median ocellus respectively, and relative length of segments 1, 2, and flagellum 100: 41 (35-45): 248 (218-265) (based on 3 specimens); distance from antenna to median ocellus over 1/2 (0.8 times) that from proboscis to antenna and in specimens on hand 0.8-0.9 times width of front at median ocellus.

Thorax: Metapleura pale gray pollinose; base of attenuate, anterior part of pollinose region in *mesonotum* narrower than width of front at median ocellus (0.4-0.7 times); pile on thorax pale in color; in haltere, stem appears to be not darker than knob.

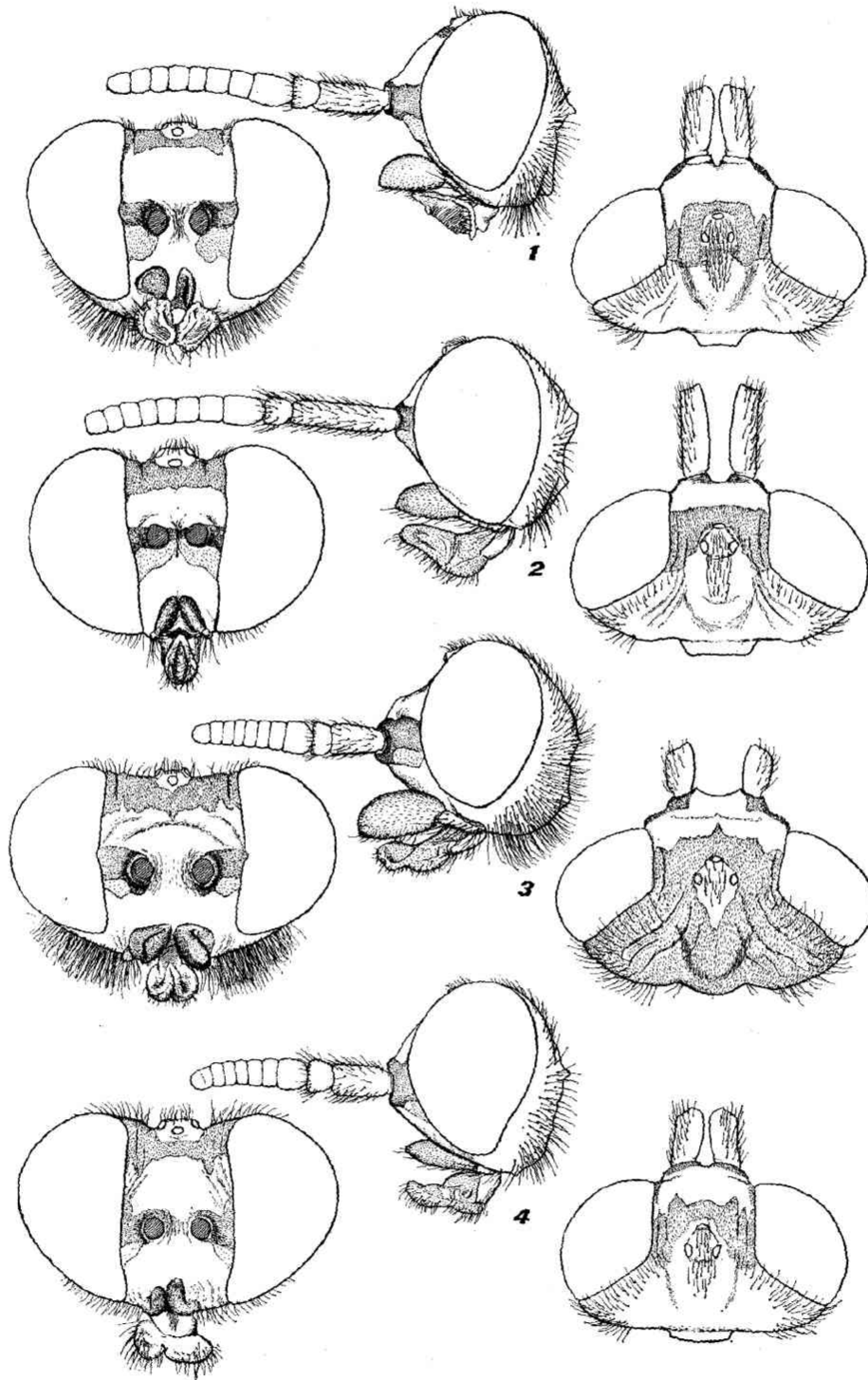
Wing: Wing margin from before vein  $R_4$  to beyond vein  $M_2$  (or to apex of anal cell) bordered with dark brown (Fig. 11).

Leg: Coxa with pale gray pollen and with pale pile; in specimens on hand trochanter, basitarsus (except apex), base of tarsal segment 2, fore and mid tibiae, bases and apices of fore and mid femora, apex of coxa, knee of hind leg, basal portion of hind femur (whose length is variable and often occupies about 1/2 of femur) yellowish brown; relative length of segments (excluding coxa and trochanter) of fore leg 143 (138-151): 164 (162-167): 100: 29 (28-30): 21 (19-22): 13 (12-13): 21 (20-22), of mid leg 189 (181-200): 186 (182-192): 96 (92-98): 28 (27-30): 20 (19-21): 11 (10-12): 19 (17-21), of hind leg 263 (252-271): 287 (286-288): 111 (109-112): 34 (32-35): 21 (20-23): 13 (12-13): 21 (20-21), these were calculated from 3 specimens.

Abdomen: Pile on abdomen wholly pale in color.

Length: Body (with ovipositor but without antenna) 10-14 mm; wing 8-11; fore basitarsus 1.25-1.7.

♂. Similar to *matsumurai* except as follows: Head: Vertex pale gray pollinose as in ♀; space between antenna and eye somewhat over 1/2 width of ocellar triangle (0.6-0.7 times); antenna 3 1/2-4 times as long as, and its segment 1, which is 2 1/2-3 times as long as wide, about equal to (0.9-1.1 times) distance from antenna to median ocellus respectively, and relative length of segments 1, 2, and flagellum 100: 38 (34-44): 234 (215-259) (based on 4 specimens); distance from antenna to median ocellus somewhat less than that from antenna to proboscis (0.7 times; in *matsumurai* 0.4-0.6 times), and somewhat less than width of one eye on a mid line from a direct frontal view (0.8 times; in *matsumurai* 0.5-0.6 times); width of front at median ocellus somewhat more than that just above antenna (1.1-1.2 times), less than 1 1/2 width of face at narrowest point (1.2-1.4 times), and in specimens on hand 0.8-0.9 times width of one eye on a mid line from a direct frontal view.



Figs. 1-4. Head of *Xylophagus*, ♀ (1: *albopilosus*; 2: *matsumurai*; 3: *merus*; 4: *nudatus*) (left: anterior view; middle: lateral view; right: dorsal view).

Thorax : Metapleura (as in ♀) and posterior border of postscutellum pale gray pollinose.

Leg : Coxa with pale gray pollen as in ♀; in specimens on hand mid and hind coxae (each except apex), base of fore coxa, apical about 1/2 of hind femur, hind tibia (except knee), last 2 or 3 tarsal segments, and apices of tarsal segments 1-2 dark brownish to nearly blackish; relative length of segments of fore leg 128 (117-143) : 151 (130-160) : 100 : 32 (31-34) : 24 (23-25) : 14 (13-15) : 20 (19-22), of mid leg 160 (154-169) : 170 (164-177) : 93 (89-95) : 29 (28-30) : 22 (21-23) : 12 (11-13) : 19 (18-20), of hind leg 231 (211-257) : 241 (202-265) : 107 (100-113) : 36 (34-40) : 24 (23-26) : 14 (13-15) : 22 (18-25), these were calculated from 4 specimens.

Genitalia : See Fig. 7.

Length : Body (without antenna) 7.5-10 mm; wing 7-8.5; fore basitarsus 1.15-1.6.

Distribution : Japan (Hokkaido, Honshu, Shikoku, Kyushu).

Type-locality : Misaka-toge (Ehime-Pref.), Shikoku. Type in Ehime University, Matsuyama.

We studied all of type series (1♀, 1♂), as well as the following additional specimens (5♀♀, 5♂♂) : *Hokkaido* (1♀, 2♂♂) : 1♀, Moiwa, 1. vi. 1904, S. Matsumura (HU); 1♂, Sapporo, 31. v. 1965, K. Kusigemati (KA. U); 1♂, Mt Soranuma, 26. vi. 1965, Kusigemati (HU). *Honshu* (1♀, 3♂♂) : 1♂, Chuzenji, Nikko, vi. 1911, Matsumura (HU); 2♂♂, Senjodake, Shinano (Nagano-Pref.), 7. vii. 1963, A. Nagatomi (KA. U); 1♀, Senjodake, 20. vii. 1964, A. Nakanishi (KU). *Shikoku* (2♀♀) : 1♀, Mt Turugi, 3. vi. 1957, M. Sasakawa (KA. U); 1♀, Ishizuchiyama, 29. v. 1967, Nakanishi (KU). *Kyushu* (1♀) : 1♀, Hikosan, Fukuoka-Pref., 3. v. 1962, M. Shiga (KA. U).

### *Xylophagus matsumurai* Miyatake

(Figs. 2, 5-6, 8, 14-16)

*Xylophagus maculatus* Matsumura, 1916, Thousand Insects of Japan. Additamenta 2. p. 360. (preoccupied by *Xylophagus maculatus* Meigen, 1804 which is removed to the genus *Solva*).

*Xylophagus matsumurai* Miyatake, 1965, Trans. Shikoku Ent. Soc. 8 : 105. (new name for *Xylophagus maculatus* Matsumura, 1916).

*Xylophagus omogensis* Miyatake, 1965, Trans. Shikoku Ent. Soc. 8 : 106. (type-locality : Omogokei, Ehime-Pref., Shikoku; type in Ehime University, Matsuyama). New Synonymy.

This species is characterized among the Japanese forms by the long 1st antennal segment (Fig. 2). It is similar to *nudatus* in pruinosity but differing by having the anterior portion of pollinose region of mesonotum broader, metapleura wholly pilose and without pollen, coxa and femur in ♀ dark brownish to blackish, and pile on body in ♀ black. It is distinguished from *albopilosus* by having the anterior portion of pollinose region of mesonotum broader; vertex, metapleura, and coxa without pollen; insertion of antenna less (in ♀) or not (in ♂) produced forward; pile on body in ♀ black; and apical margin of wing in ♀ (as well as in ♂) not bordered with dark brownish.

Miyatake (1965) indicated that *matsumurai* could be separated from *omogensis* by "the proportion of the antennal segments, the coloration of tarsi, etc." But the differences



in question seem to fall within the individual variations.

♀. Head: Shining black; (1) area before and alongside ocellar triangle and (2) that around antenna are pale gray pollinose but of (2) the lower part is distinct; antenna and palpus blackish, and proboscis brownish to dark brownish; ocellar triangle, vertex, occiput, cheeks, palpus, proboscis and 1st 2 antennal segments with black hairs; distance from antenna to median ocellus about  $1/2$  that from proboscis to antenna (0.5–0.6 times), and less than width of front at median ocellus (0.7–0.8 times) which is about equal to that just above antenna (0.9–1.0 times) and width of one eye on a mid line from a direct frontal view (0.9–1.2 times), equal to or somewhat broader than width of face at narrowest point (1.0–1.3 times), and  $2\frac{1}{2}$  to 3 times width of ocellar triangle; space between antenna and eye  $1/2$  or somewhat more (0.5–0.7 times), and that between antennae over  $1/2$  (0.6–0.9 times) width of ocellar triangle respectively; antenna 4–5 times, and its segment 1, which is 3–4 times as long as wide,  $1\frac{1}{2}$  or roughly so (1.3–1.7 times) as long as distance from antenna to median ocellus respectively, and relative length of segments 1, 2, and flagellum 100 : 27 (24–29) : 185 (167–207) (based on 11 specimens); palpus distinctly over  $1/2$  distance from proboscis to antenna (0.8–1.0 times).

Thorax: Shining black, posterior callus, pteropleura, etc., with a brownish tinge; mesonotum, except humeral callus and area around it, lateral part of mesonotum, and posterior callus, and sometimes scutellum except outer margin, pale gray pollinose, and pollinose part of mesonotum divided by 3 (of which median one is narrow and the lateral are somewhat broader) paler gray vittae which appear to be shining black in certain lights; base of attenuate, anterior portion of pollinose region in mesonotum is nearly equal to or broader than width of front at median ocellus (0.9–1.6 times); mesonotum, scutellum, pro-, posterior and mid-upper parts of meso-, lower part of sterno-, ptero- (before metapleura) and metapleura with black pile; haltere is yellowish brown but stem may be somewhat darker.

Wing: Membrane faintly tinged with yellowish brown to brownish; stigma, area above stigma, and a band from stigma to base of 4th posterior cell dark brown (base of dark brownish stigma situated at or near insertion of vein  $R_4 + R_5$ ); basal section of vein  $M_2$ , and m crossvein (sometimes basal part of vein  $R_4$ , vein between 2nd basal cell and 5th posterior cell, and vein between anal cell and 5th posterior cell) bordered with dark brown; veins largely dark brown; see Figs. 14–16.

Leg: Shining dark brownish to blackish, basitarsus and knee yellowish brown; apex of coxa and base of femur may have a brownish tinge; sometimes apical part of basitarsus is darkened while basal portions of fore and mid tibiae become paler; in some individuals tarsal segment 2 (including base of segment 3) and apical parts of fore and mid femora yellowish brown and fore and mid tibiae wholly paler; pile on coxa, femur, and tibia black; relative length of segments (excluding coxa and trochanter) of fore leg 155 (148–161) : 176 (170–182) : 100 : 32 (29–36) : 24 (23–27) : 15 (13–16) : 24 (22–26), of mid leg 204 (197–215) : 203 (189–217) : 99 (95–103) : 29 (27–33) : 21 (19–25) : 13 (12–15) : 22 (20–23), of hind leg 285 (269–309) : 301 (276–324) : 113 (98–123) : 35 (28–42) : 24 (20–28) : 14 (12–16) : 24 (21–27), these were calculated from 10 specimens.

Abdomen: Shining blackish; above and below clothed with black pile; each tergum has a basal median triangular pale gray pollinose spot which may easily disappear in certain lights and according to condition of specimen and middle portion of each sternum may be pale gray pollinose.

Length: Body (with ovipositor but without antenna) 9–17 mm; wing 8–13.5; fore basitarsus 1.1–1.8.

♂. Similar to ♀ except as follows: Pile on head (except antenna), thorax, leg, and abdomen pale yellowish. Head: Width of front at median ocellus narrower than that just above antenna (0.7–0.9 times) and width of one eye on a mid line from a direct frontal view (0.7 times),  $1\frac{1}{2}$  or more width of face at narrowest point (1.5–1.9 times), and twice or roughly so width of ocellar triangle (1.8–2.6 times); space between antenna and eye less than  $\frac{1}{2}$  (0.2–0.4 times), and that between antennae less than  $\frac{1}{2}$  (0.2–0.4 times) width of ocellar triangle respectively; in specimens at hand, distance from antenna to median ocellus 0.5–0.6 times width of one eye on a mid line from a direct frontal view and 0.7–1.0 times width of front at median ocellus; relative length of antennal segments 1, 2, and flagellum 100: 29 (25–33): 177 (157–219) (based on 13 specimens).

Thorax: Often median vitta on mesonotum becomes broader and shining black (this may be true of ♀); in haltere stem appears to be not darker than knob.

Leg: Yellowish brown but base of hind coxa and tarsal segments 4–5 dark brownish to blackish; often in tarsus apices of segments 2–3 (or 1–3) and in hind leg apices of tibia and femur (sometimes larger part of hind tibia and almost whole surface of hind femur) infuscated with dark brown; relative length of segments of fore leg 149 (132–170): 172 (153–186): 100: 34 (30–37): 26 (22–30): 16 (14–18): 24 (19–27), of mid leg 194 (169–219): 193 (169–214): 98 (86–103): 31 (26–35): 24 (21–27): 15 (13–18): 23 (19–26), of hind leg 271 (239–286): 285 (253–302): 115 (102–128): 41 (36–47): 26 (23–33): 15 (13–19): 24 (21–26), these were calculated from 10 specimens.

Abdomen: Pile on dorsum longer than in ♀.

Genitalia: As in Figs. 5–6 and 8.

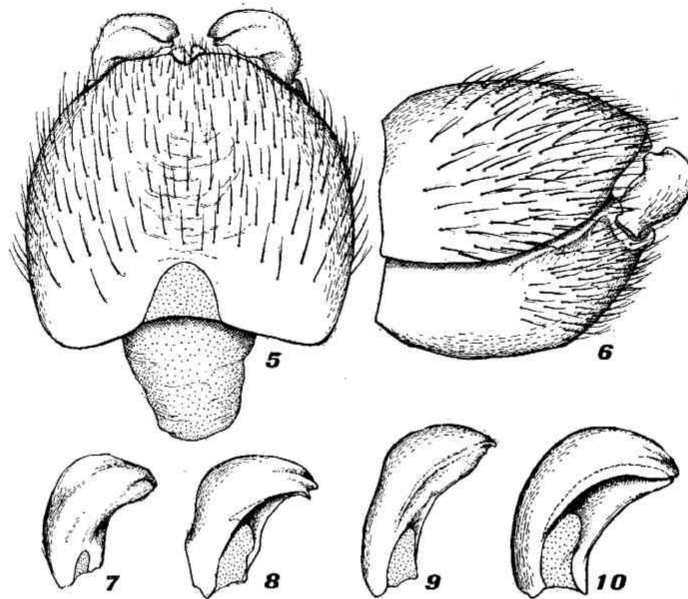
Length: Body (without antenna) 7.5–14 mm; wing 7–12; fore basitarsus 0.95–1.75.

Distribution: Japan (Hokkaido, Honshu, Shikoku, Kyushu).

Type-locality: Chuzenji, Nikko, Honshu. Type in Hokkaido University, Sapporo.

One of us (Nagatomi) examined the type and we studied all of the type series (3 ♀♀) of *omogensis* Miyatake, as well as the following additional specimens (19 ♀♀, 33 ♂♂): *Hokkaido* (14 ♀♀, 21 ♂♂): 1 ♀, Sapporo, 26. v., S. Matsumura (HU); 2 ♂♂, Sapporo, 2. vi. 1935, & 10. vi. 1937, I. Okada (HU); 1 ♂, Sapporo, 23. v. 1961, S. Takagi (HU); 1 ♂, Sapporo, 27. v. 1958, K. Kamijo (HU); 2 ♀♀, Sapporo, 2. vi. 1964 & 31. v. 1965, K. Kusigemati (HU); 1 ♂, Jozankei, 21. vi. 1953, T. Oku (HU); 1 ♀, Jozankei, 25. vi. 1964, Kusigemati (HU); 1 ♀, 2 ♂♂, Mt Soranuma, 26. vi. 1965, Kusigemati (HU); 3 ♀♀, 2 ♂♂, Tenninkyo, 9. vii. 1967, T. Saigusa (KU); 1 ♂, Nukabira, 21. v. 1964, A. Nagatomi (KA.U); 1 ♀, Nukabira, 14. vi. 1967, Saigusa (KU); 2 ♀♀, 6 ♂♂, Nukabira, 7. vii. 1966, Kusigemati (KA. U); 1 ♀, Yukomanpetsu, 8. vii. 1962, Takagi (HU); 1 ♀, 1 ♂, Yukomanpetsu, 14–15. vii. 1965, Kusigemati (KA. U); 1 ♂, Yukomanpetsu, 26. vi. 1967, Saigusa (KU); 1 ♂, Aizankei, 7. vii. 1964, Nagatomi (KA. U); 1 ♀, Tokachidake, 13. vii. 1938, H. Takahashi (HU); 2 ♂♂, Upepesanke, 13. vii. 1953, S. Ito (U. OP). *Honshu* (3 ♀♀, 7 ♂♂): 1 ♂, Kuroyu, Akita, 14. vi. 1951, Ito (U. OP); 1 ♂, Oginosen, Tajima, 26. v. 1955, E. Fujita (KA. U); 2 ♀♀, 4 ♂♂, 4–7. vii. 1963, Senjodake, Shinano, A. Nagatomi & T. Naito (KA. U); 1 ♂, Senjodake, 4. vii. 1963, Saigusa (KU); 1 ♀, Mt Kimpu, Kai, 1. vii. 1963, Nagatomi (KA. U). *Shikoku* (2 ♀♀, 3 ♂♂): 1 ♀, 1 ♂ Ishizuchi, 22. v. 1949, T. Edashige

(EU) ; 1 ♂, Tosa, 4. v. 1951, Takeuchi (U. OP) ; 1 ♀, 1 ♂, Omogo, 14. v. 1963, Takagi (HU). *Kyushu* (2 ♂♂) : 1 ♂, Hikosan, 5. v. 1962, Saigusa (KU) ; 1 ♂, Fukuoka-Pref., 22. v. 1962, Saigusa (KU).



Figs. 5-6. Male genitalia of *Xylophagus matsumurai* (left: dorsal view; right: lateral view). Figs. 7-10. Dististyle of *Xylophagus*, antero-dorsal view (7: *ablopilosus*; 8: *matsumurai*; 9: *merus*; 10: *nudatus*).

***Xylophagus merus* Nagatomi and Saigusa, new species**

(Figs. 3, 9, 12)

This species may be differentiated from *sachalinensis* Pleske, 1925 in which occiput and sides of mesonotum appear to have no pollen. It is characterized among the Japanese forms by having the occiput, cheeks, whole surface of mesonotum (except humeral callus) and almost whole surface of pteropleura pale gray pollinose.

♀. Head: Shining black ; (1) upper front just before and alongside ocellar triangle, (2) vertex, (3) occiput, (4) cheeks, and (5) a region around antenna pale gray pollinose, although a triangular patch just behind ocellar triangle, whose size and form are about equal to ocellar triangle, and an area just below lower corner of each eye without pollen and of (5) only lower part is distinct ; antenna and palpus blackish but proboscis yellowish brown to brownish ; ocellar triangle, and 1st 2 antennal segments with short black hairs, and (1) vertex, (2) occiput, (3) cheeks, (4) 1st segment of palpus, and (5) proboscis with pale pile which is longer on (3) and (4) and is often wholly or partially black on (1), (2), and (5) ; distance from antenna to median ocellus over 1/2 that from proboscis to antenna (0.7-0.8 times), and less than width of front at median ocellus (0.7-0.8 times), which is about equal to that just above antenna (0.9-1.0 times), broader than width of one eye on a mid line from a direct frontal view (1.1-1.4



times), about equal to width of face at narrowest point (0.9–1.1 times), and  $2\frac{1}{2}$ – $3\frac{1}{2}$  times width of ocellar triangle; space between antenna and eye equal to or nearly so (0.8–1.1 times), and that between antennae *equal to or roughly so* (0.7–1.3 times) width of ocellar triangle respectively; antenna  $2\frac{1}{2}$  times, and its segment 1, which is *less than twice* (1.1–1.7 times) as long as wide, *about*  $\frac{1}{2}$  (0.5–0.6 times) as long as distance from antenna to median ocellus respectively, and relative length of segments 1, 2, and flagellum 100 : 51 (43–60) : 258 (238–300) (based on 10 specimens); palpus equal to or somewhat longer than distance from proboscis to antenna; structural characters similar to *albopilosus* but differing by having the points shown in *italic*.

Thorax: Shining black, posterior callus, pteropleura, etc., with a brownish tinge; thorax covered with pale gray pollen which is absent on humeral callus, meso- (except anterior and upper margins), sterno- (except antero-upper part and posterior margin), and antero-upper part of pteropleura; mesonotum with 3 paler gray pollinose vittae (of which median one is narrower than the lateral) which appear to be shining black in certain lights; mesonotum, scutellum, pro-, mid-upper and posterior parts of meso-, lower part of sterno-, ptero- (before metapleura), and metapleura pale pilose; haltere is yellowish brown to brownish but stem may be darker than knob.

Leg: Yellowish brown to brownish; last 2 segments of tarsus, apical portion of hind femur and base of hind coxa darkened; often extreme bases of fore and mid coxae, tarsal segments 1–3 especially at apices, hind tibia especially at apex become darker; coxa with pale gray pollen and longer pale pile which appears to be sometimes black; relative length of segments of fore leg 142 (134–151) : 163 (153–173) : 100 : 33 (32–36) : 24 (22–27) : 15 (12–18) : 21 (19–23), of mid leg 180 (173–189) : 180 (170–193) : 91 (88–97) : 30 (26–33) : 22 (20–25) : 13 (12–15) : 20 (17–21), of hind leg 253 (239–269) : 280 (272–296) : 110 (104–120) : 35 (32–41) : 24 (22–27) : 14 (11–16) : 20 (18–21), these were calculated from 10 specimens.

Wing: As in *matsumurai*; see Fig. 12.

Abdomen: Shining blackish; abdomen except ovipositor more or less pale gray pollinose; pile on abdomen is black but that on sides of terga 1–2 becomes longer and pale.

Length: Body (with ovipositor but without antenna) 12–19 mm; wing 8–13; fore basitarsus 1.4–1.9.

♂. Similar to ♀ except as follows: Head: Pile on ocellar triangle pale in color; width of front at median ocellus somewhat narrower than width of one eye on a mid line from a direct frontal view (0.8–0.9 times), broader than width of face at narrowest point (1.2–1.4 times), and less than 3 times width of ocellar triangle (2.2–2.6 times); space between antenna and eye slightly over  $\frac{1}{2}$  (0.6 times), and that between antennae less than  $\frac{1}{2}$  (0.25–0.3 times) width of ocellar triangle respectively; in specimens on hand distance from antenna to median ocellus 0.8–0.9 times width of front at median ocellus, which is 1.1 times that just above antenna, and antenna 1.8–2.3 times as long as distance from antenna to median ocellus.

Leg: Relative length of segments of fore leg 140 (133–161) : 167 (158–183) : 100 : 34 (31–37) : 26 (25–27) : 15 (13–16) : 22 (20–24), of mid leg 177 (164–204) : 177 (156–196) : 91 (84–98) : 31 (27–35) : 24 (22–24) : 13 (12–14) : 22 (20–24), of hind leg 233 (204–270) : 267 (251–293) : 107 (98–113) : 37 (33–41) : 24 (22–27) : 14 (13–16) : 21 (20–22),

these were calculated from 6 specimens.

Abdomen : Segment 1 distinctly pale gray pollinose ; pile on abdomen at least chiefly pale in color.

Length : Body (without antenna) 9–13 mm ; wing 7–9 ; fore basitarsus 1.1–1.6.

Genitalia : See Fig. 9.

Distribution : Saghalien and Japan (Hokkaido).

Holotype : 1♀, Mt Daisetsu, Hokkaido, 10. vii. 1962, S. Takagi (HU).

Paratypes (18 ♀♀, 8 ♂♂) : *Saghalien* (2♀♀) : 1♀, 1. viii. 1932, T. Shimizu (HU) ; 1♀, Kashibo, 10. vii. 1933, Uchida, Okada and Sawamoto (HU). *Hokkaido* (16 ♀♀, 8 ♂♂) : 3♀♀, same data as holotype ; 1♂, Sapporo, 9. v. 1918, S. Matsumura (HU) ; 9♀♀, 4♂♂, Mt Daisetsu, 12–16. vii. 1960, S. Takagi (HU, USNM, BM, KA. U) ; 1♂, Soun-kyo, 16. vi. 1960, K. Kamijo (HU) ; 1♂, Mt Soranuma, 23. vi. 1962, Takagi (HU) ; 1♀, Mt Daisetsu, 10. vii. 1962, I. Miyagi (HU) ; 1♀, no data (HU) ; 1♀, Yukomanpetsu, 26. vi. 1967, T. Saigusa (KU) ; 1♀, 1♂, Nukabira, Tokachi, 12. vi. 1965, H. Ono (KU).

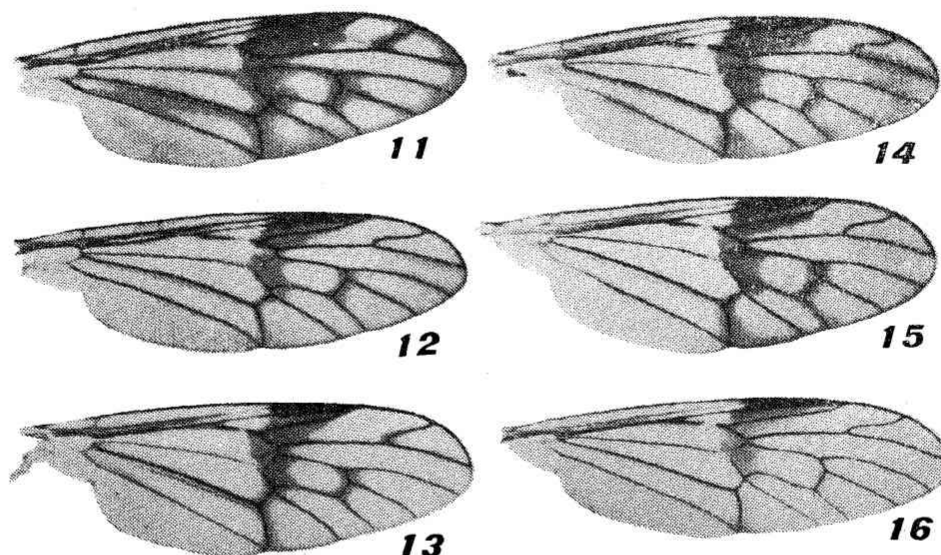
### *Xylophagus nudatus* Nagatomi and Saigusa, new species

(Figs. 4, 10, 13)

This species may be differentiated from *sachalinensis* Pleske, 1925 by having the pile on abdomen wholly pale yellowish in color. It may be characterized among the Japanese forms by having the pile on metapleura which is confined to the posterior part.

♀. Head : Shining black ; area before and alongside ocellar triangle and that around antenna pale gray pollinose ; antenna and palpus dark brownish to blackish but proboscis yellowish brown ; ocellar triangle, vertex, occiput, cheeks and palpus with pale yellowish pile but 1st 2 antennal segments and proboscis with black hairs ; distance from antenna to median ocellus over 1/2 that from proboscis to antenna (0.8 times) and about equal to width of front at median ocellus (0.9–1.0 times) which is equal to or roughly so that just above antenna (1.0 times), width of one eye on a mid line from a direct frontal view (1.0–1.2 times) and width of face at narrowest point (1.1–1.2 times) respectively, and over twice width of ocellar triangle (2.4–2.7 times) ; space between antenna and eye *narrower than* (0.7 times), and that between antennae *less than 1/2* (0.3–0.4 times) width of ocellar triangle respectively ; antenna *roughly twice* (2.0–2.4 times), and its segment 1, which is about twice or less (1.3–1.9 times) as long as wide, *1/2 or somewhat more* (0.5–0.7 times) as long as distance from antenna to median ocellus respectively, and relative length of segments 1, 2, and flagellum 100 : 53 (50–60) : 226 (214–250) (based on 3 specimens) ; in flagellum, number of segments is sometimes indistinct and may be 7 ; palpus nearly equal to distance from proboscis to antenna ; structural characters similar to *albopilosus* but differing by having the points shown in *italic*.

Thorax : Shining black, posterior callus, pteropleura, etc., with a brownish tinge ; mesonotum with pollen as in *matsumurai* or *albopilosus* but anterior portion of pollinose region opposite to humeral callus very narrow (about as wide as ocellar triangle) ; metapleura more or less pale gray pollinose ; mesonotum, scutellum, pro-, mid-upper and posterior margins of meso-, ptero- before metapleura, and posterior part of metapleura pale yellowish pilose (in *matsumurai*, *albopilosus* and *merus* whole surface of meta-



Figs. 11-16. Wing of *Xylophagus*, ♀ (11: *albopilosus*; 12: *merus* 13: *nudatus*; 14-16: *matsumurai*).

pleura with pile); haltere yellowish brown.

Leg: Yellowish brown, but last 2 or 3 tarsal segments, hind tibia except knee, apical portion of hind femur, and extreme base of hind coxa dark brownish to blackish and apices of tarsal segments 1-2, fore and mid femora each except basal portion, and mid tibia except knee somewhat darker; coxa with pale yellowish pile and without pollen; relative length of segments (excluding coxa and trochanter) of fore leg 156 (151-160) : 175 (173-177) : 100 : 29 (29-30) : 21 (21-22) : 14 (13-15) : 27 (25-28), of mid leg 208 (202-215) : 215 (212-217) : 97 (94-100) : 29 (28-29) : 19 (19-20) : 14 (13-15) : 24 (23-27), of hind leg 281 (256-302) : 311 (306-315) : 124 (122-126) : 35 (34-38) : 23 (22-25) : 15 (15) : 26 (25-27), these were calculated from 3 specimens.

Wing: As in *matsumurai*; see Fig. 13.

Abdomen: Shining dark brownish to blackish; abdomen above and below pale yellowish pilose; sterna 1-5 each with a median, narrow, pale pollinose stripe which extends to posterior margin of segment.

Length: Body (with ovipositor but without antenna) 8-11.5 mm; wing 7.5-9; fore basitarsus 1.0-1.15.

♂. Similar to ♀ except as follows: Head: Space between antenna and eye 0.4 times width of ocellar triangle, and width of front at median ocellus 0.8 times width of one eye on a mid line from a direct frontal view and in specimen on hand 1.1 times width of front just above antenna; in specimen on hand antennal segment 1 just twice as long as wide and relative length of segments 1, 2, and flagellum 100 : 50 : 200.

Leg: In specimen on hand, hind tibia and hind femur (each except apex) not so darker; relative length of segments of fore leg 153-183-100-33-22-17-31, of mid leg 206-208-94-31-22-14-25, of hind leg 275-306-122-39-28-17-28 (based on 1 specimen).

Genitalia: See Fig. 10.

Length: Body (without antenna) 6.5 mm; wing 6.5; fore basitarsus 0.9.

Distribution : Japan (Hokkaido).

Holotype : 1♀, Nukabira, Tokachi, 13. vi. 1967, T. Saigusa (KU).

Paratypes : 1♂, same data as holotype (KA.U) ; 1♀, Soun-kyo, 12. vi. 1963, T. Kumata (HU) ; 1♀, Akanko, 20. vi. 1967, Saigusa (KA.U).

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