

A New Genus and Species of Japanese Pompilinae (Hymenoptera, Pompilidae)

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Abstract.—The new genus *Hanedapompilus* Shimizu belonging to Pompilinae, Pompilidae, is described from Japan, based on the new species *H. yamagishii* Shimizu.

In studying wasps of the family Pompilidae from Japan, Shimizu has recently discovered a species of the subfamily Pompilinae that we have never seen in collections and that fails to fit into established genera. Although we have only nine females and four males of this species, it is remarkable that most of the specimens were collected by use of Malaise and emergence traps set in evergreen and deciduous forests in Honshu. In the present paper, we describe this new taxon as *Hanedapompilus* Shimizu, based on the new species *H. yamagishii* Shimizu.

The terminology of the wing veins and cells follows Day (1988). The following abbreviations are used for morphological terms: LID, lower interocular distance; MID, middle interocular distance; OOL, ocello-ocular line; POL, postocellar line; SMC, submarginal cell of forewing; UID, upper interocular distance.

The names of institutions in which type specimens will be deposited are abbreviated as follows: FSAG, Zoologie générale et appliquée, Faculté universitaire des Sciences agronomiques, Gembloux, Belgique; TMU, Department of Natural History, Graduate School of Science, Tokyo Metropolitan University, Tokyo, Japan.

Hanedapompilus Shimizu, new genus

Type species.—*Hanedapompilus yamagishii* Shimizu, by original designation and monobasic.

Diagnosis.—Distinguished from other genera of Pompilinae by the combination of the following nine characters: (1) female clypeus with apical margin slightly produced at both median and lateral portions (Fig. 1); (2) claws of both sexes cleft (Figs. 11, 23, 24); (3) arolium large, sometimes extending beyond tip of tarsal claws (Fig. 13); (4) orbicula small (Fig. 12); (5) orbicular pecten consisting of 7 diverging setulae that are much longer than orbicula (Fig. 12); (6) tarsal comb absent (Fig. 9); (7) underside of tarsomere V without spines; (8) male antenna short; and (9) male pronotum strongly narrowing in front (Fig. 16).

Description. Female.—**Head:** Mandible bidentate (excluding apical point). Labrum notched apically, but completely concealed by clypeus. Clypeus wider than LID (Fig. 1). Frons without prominence (Fig. 3). Antennal socket separated from frontoclypeal suture by more than half the diameter of the socket. Antenna slender; flagellomere I considerably longer than scape or pedicel, but shorter than UID.

Maxilla with palpomeres IV–VI much longer than palpomere III (Fig. 4). *Mesosoma*: Pronotum gradually narrowed in front, not swollen dorsolaterally; posterior margin angularly emarginate at middle. Postnotum well developed, more than half the length of metanotum. Propodeum never with well-defined declivity, smooth with coarse, suberect, silvery pubescence and long, erect, white hairs. *Legs*: Not strongly spinose. Claws with basal ray broadly truncate (Fig. 11). *Wings*: Forewing with pterostigma large, its base much longer than crossvein 2r-rs (Fig. 8). Marginal cell very long, acute apically, less than its own length from wing-tip. SMCs 2 and 3 four-sided. Last abscissa of vein M straight, but not reaching wing margin. Discal cell 2 long. Crossvein 2m-cu arising considerably more than half way from base of vein CuA₁ to wing margin. Hindwing with jugal lobe large, about half the length of subbasal cell, subtriangular. Crossvein cu-a originating considerably basad to point of separation of vein M+CuA, confluent with vein 1A, forming a long, smooth arc. *Metasoma*: Sternum 2 without transverse concavity. Sternum 6 somewhat compressed laterally, but without a median carina. Metasomal tergum 6 with several scattered, slender, flexible setae.

Male.—*Head*: Mandible unidentate. Apical margin of clypeus transverse (Fig. 14). Antenna short, not serrate, but each flagellomere slightly arched on ventral side (Fig. 17). *Legs*: Fore tarsomere V parallel-sided, not produced on inner margin. Fore tarsal claw asymmetrical; inner claw strongly curved, with basal ray large and rounded apically (Fig. 24). Outer fore tarsal claw (Fig. 23) and mid and hind tarsal claws cleft as in the female. *Metasoma*: Exposed portion of subgenital plate compressed laterally, but broadly flattened medially (Figs. 19, 20). *Genitalia*: Paramere extending far beyond apex of aedeagus (Fig. 18). Basal hooklets single.

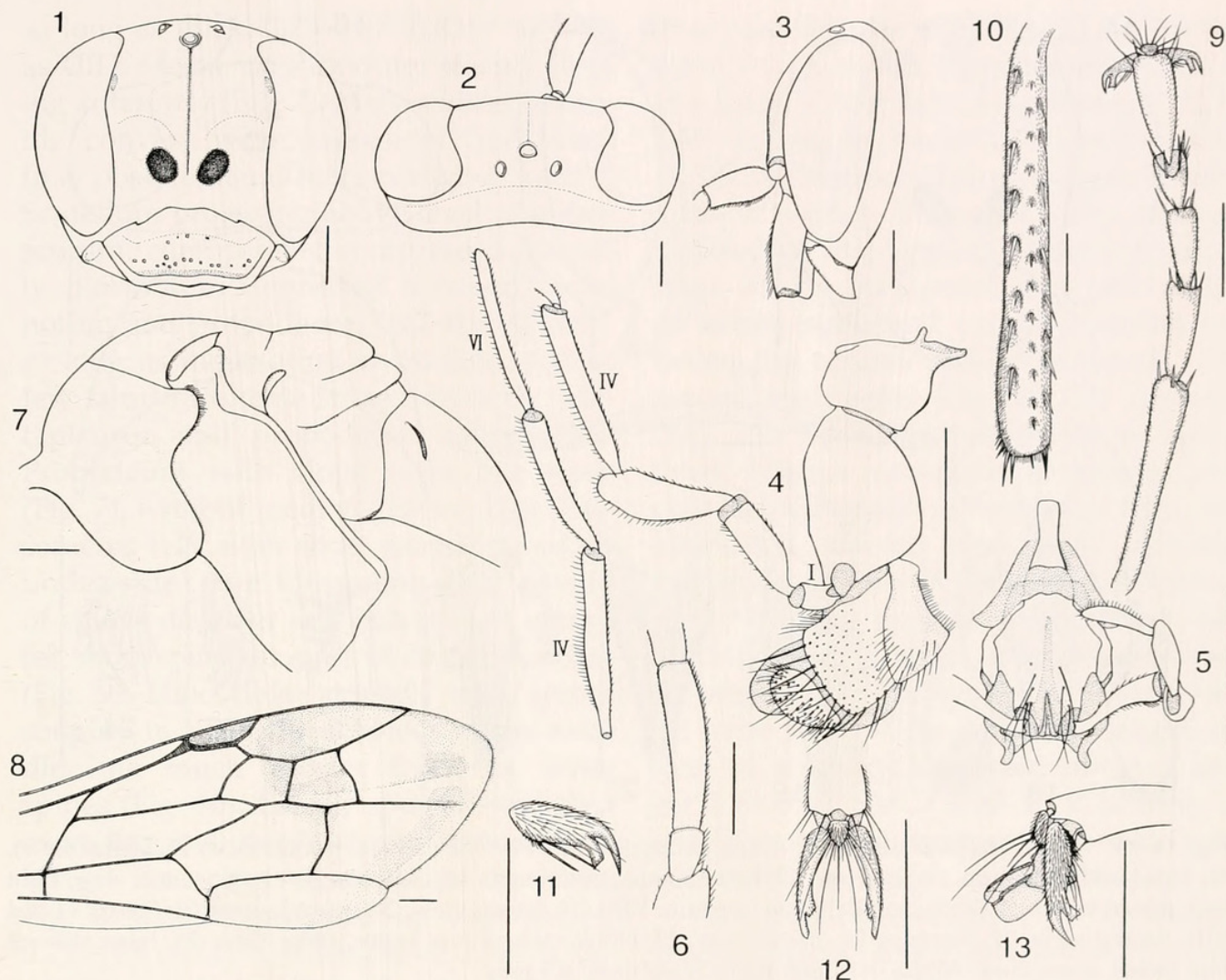
Biology.—Unknown.

Distribution.—Japan (Honshu).

Etymology.—From 'Haneda', in honor of the provider of specimens, and 'Pompilus', a generic name in the subfamily Pompilinae. Gender: masculine.

Discussion.—The prementum with a preapical circular, or heart- or spade-shaped membranous area is considered to be one of the synapomorphies of Pompilinae (Shimizu 1994). Although it does not have this feature (Fig. 5), *Hanedapompilus* apparently belongs to the Pompilinae because it bears the following features unique to this subfamily, i.e. (1) spines at apex of hind tibia of unequal length, more or less splayed out, and irregularly spaced (Fig. 10); and (2) dorso-inner portion of hind tibia with strong, at most six, spines in a row (Fig. 10). The genus also has other characteristics common in the Pompilinae but rare in the other subfamilies: (1) basal portion of forewing vein CuA₁ deflected downward (Fig. 8); (2) a cluster of basal hamuli strongly proximal to point of separation of vein C from vein Sc+R+Rs; (3) dorso-inner surface of hind coxa distinctly raised and somewhat lamellate; and (4) mid and hind femora with minute spines set in pits near apex.

This genus shows certain morphological similarities to *Agenioideus*, such as (1) body and appendages black, with a white marking on hind tibia near base dorsally in both sexes and a white marking on metasomal tergum VII in the male; (2) propodeum with coarse, suberect, silvery pubescence; (3) legs not strongly spinose; (4) pterostigma large, at least 2.5× as long as high (Fig. 8); (5) orbicula small (Fig. 12); (6) orbicular pecten of about seven weak, divergent setulae (Fig. 12); (7) labrum notched apically; and (8) crossvein 2m-cu arising considerably more than half way from base of vein CuA₁ to outer wing margin (Fig. 8). Of these features, at least (4), (5), (6), and (8) are considered to be plesiomorphic (Shimizu 1994), and only (7) apomorphic in the Pompilidae. However, a labrum notched or cleft apically is found



Figs 1–13. *Hanedapompilus yamagishii* n. sp., holotype female. 1–3, Head (1, frontal view; 2, dorsal view; 3, lateral view). 4, Right maxilla, outer view. 5, Labium, posterior view. 6, Left antenna, dorsal view. 7, Mesosoma, lateral view. 8, Fore wing. 9, Left fore tarsus, dorsal view. 10, Right hind tibia, dorsal view. 11, Hind tarsal claw, outer view. 12–13, Pretarsus (12, dorsal view; 13, lateral view). Scale lines: 0.5 mm.

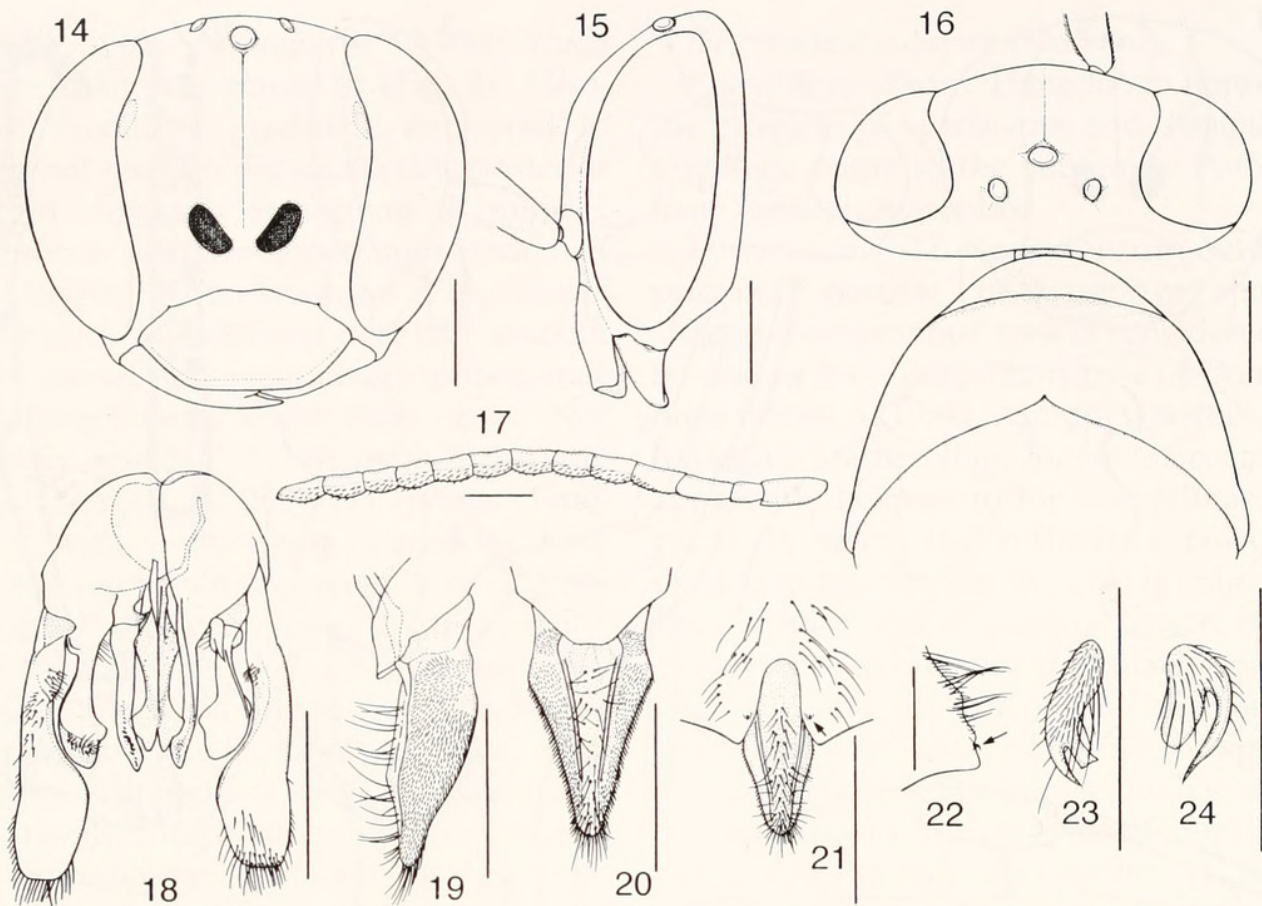
not only in *Agenioideus* but also in several other genera of Pompilinae, such as *Anospilus*, *Argyroclitus*, *Kyphopompilus*, *Pedinpompilus* and *Spuridiophorus*. Thus, it is not certain that *Hanedapompilus* is closely related to *Agenioideus*.

***Hanedapompilus yamagishii* Shimizu,
new species**
(Figs. 1–24)

In the following descriptions, measurements of the holotype are given in parentheses.

Female.—*Length*: Body 9.7–12.0 (11.0) mm; forewing 9.0–10.2 (9.9) mm. *Coloration*: Black. Inner orbit usually with a

small reddish-yellow spot at its dorsal third. Maxillary palpomeres IV–VI and labial palpomeres III–IV, together with apical portions of maxillary palpomere III and labial palpomere II more or less yellowish brown. Lower portion of pronotum pale brown. Hind tibia with a large ivory-white spot near base on dorsal side. Apical half of mandible and sometimes preapical narrow portion of clypeus ferruginous. Wings hyaline; forewing (Fig. 8) with preapical fascia narrow and obscure; inner fascia occupying marginal cell, apical portion of SMC2, SMC3, and apical portion of discoidal cell 2; hindwing slightly fuscous along outer margin. *Punc-*



Figs 14–24. *Hanedapompilus yamagishii* n. sp., paratype male. 14–15, Head (14, frontal view; 15, lateral view). 16, Head and pronotum, dorsal view. 17, Left antenna, outer view. 18, Genitalia (left half, ventral view; right half, dorsal view). 19–20, Subgenital plate (sternum VIII) (19, lateral view; 20, ventral view). 21, Sterna VI and VIII, ventral view. 22, Sternum VI, lateral view. 23, Outer claw of fore tarsus, outer view. 24, Inner claw of fore tarsus, outer view. Arrow = lateral hook. Scale lines: 0.5 mm.

tation: Body almost devoid of punctures. *Pubescence and setae*: Body and appendages covered with comparatively long, silvery-white pubescence, which is dense on lower frons, clypeus and posterolateral portion of propodeum. Gena, postgena, propleuron, fore coxa, lateral sides of propodeum and metasomal tergum I with grayish white hairs long and abundant. Vertex, pronotum, scutellum, metanotum, mid and hind coxae, lateral side of metasomal tergum II, and median portion of sternum I with short gray hairs. Metasomal tergum VI and sterna II–VI with sparse, brown setae. *Head*: 1.1–1.2 (1.1)× as broad as long. Vertex slightly convex between eye tops (Fig. 1). Frons in lateral view (Fig. 3) gently convex above, feebly concave below antennal sockets, with median line fine from antennal base to ante-

rior ocellus. Antennocular line (anterior margin of frons in dorsal view) feebly inclined from antennal base toward eye (Fig. 2). Inner orbits convergent distinctly above but feebly below; MID 0.55–0.58 (0.55)× head width. UID:MID:LID = 7.4–7.8:10.9:1–9.6 (7.6:10:9.3). Ocelli forming obtuse triangle. POL:OOL = 1:0.64–0.90 (1:0.74). Clypeus 2.0–2.2 (2.1)× as broad as long, elevated above level of lower frons, with comparatively large, preapical setiferous pores; apical rim not depressed, alutaceous and mat. Malar space much shorter than half the length of antennal pedicel. Gena in dorsal view strongly receding (Fig. 2), in profile 0.4–0.6 (0.5)× eye width. Antenna thin and long; flagellomeres I and II in a ratio of 10:7.1–7.5 (10:7.2); flagellomere I feebly curved outward, thickest near middle (Fig. 6), 4.5–4.9 (4.5)×

as long as thick, $0.73\text{--}0.87$ (0.83) \times as long as UID. *Mesosoma*: Pronotum steeply sloping anteriorly (Fig. 7). Mesoscutum in profile convex, with parapsidal lines very fine; posterolateral margin slightly raised. Scutellum projecting above level of mesoscutum, considerably compressed laterally. Postnotum depressed between metanotum and propodeum, $0.42\text{--}0.60$ (0.60) \times as long as metanotum at midline, with a few faint transverse striae anteriorly. Metapleuron and propodeum subpolished. Propodeum with slope even but steep (Fig. 7), without median groove. *Legs*: Tarsomeres I–IV with short sparse spines on under side. Fore tarsomeres I–IV devoid of spines on inner and outer sides, except for short spines at apex of each tarsomere (Fig. 9). Hind tibiae dorsally with spines roughly in three lines; spines in the middle line much shorter than the other spines (Fig. 10). Longer spur of hind tibia exceeding two-thirds of hind tarsomere I. *Wings*: Forewing venation as shown in Fig. 8. SMC2 narrowed on vein Rs by $0.71\text{--}0.78$ (0.71) \times its length on vein M, receiving crossvein 1m-cu at apical $0.29\text{--}0.36$ (0.31). SMC3 $0.95\text{--}1.1$ (1.1) \times as long as SMC2 on vein M, narrowed on vein Rs by $0.39\text{--}0.60$ (0.56) \times its length on vein M, receiving crossvein 2m-cu near middle. Crossvein cu-a originating at point of separation of vein M+CuA.

Male.—*Length*: Body $6.5\text{--}8.4$ mm; forewing $5.6\text{--}7.8$ mm. *Coloration*: Similar to the female. Ventral sides of scape, pedicel, and flagellomere I more or less brown. Scape with an apical yellow spot on ventral side. Pronotal tubercle and metasomal tergum 7 with an ivory-white marking. *Head*: $1.2\times$ as broad as long. Antennocular line more convex than in the female (compare Fig. 16 with Fig. 2). Inner orbits distinctly convergent above and below (Fig. 14). MID $0.56\text{--}0.59\times$ head width. UID: MID:LID = $7.8\text{--}8.0:10:7.8\text{--}8.3$. POL:OOL = $1:0.54\text{--}0.70$. Clypeus $2.0\text{--}2.1\times$ as broad as long. Gena in dorsal view thinner and more strongly receding than in the female

(compare Fig. 16 with Fig. 2), in profile $0.2\text{--}0.3\times$ eye width. Flagellomeres I and II in a ratio of $10:8.9\text{--}10$. Flagellomere I $2.2\text{--}2.4\times$ as long as thick, $0.37\text{--}0.44\times$ as long as UID. *Metasoma*: Apical margin of sternum VI with a U-shaped, deep emargination (Fig. 21); a pair of hooks very small (Figs. 21, 22). Subgenital plate with a pair of strong sublateral carinae; portion between the carinae almost flattened, with several erect setae (Fig. 19, 20). *Genitalia* (Fig. 18): Paramere broadened in apical third. Digitus volsellaris broadened and club-shaped apically. Parapenial lobe parallel-sided, curved downward apically, extending slightly beyond apex of aedeagus. Aedeagus gradually constricted subapically, with a large, arrowhead-shaped terminal. *Wing*: Forewing SMC2 narrowed on vein Rs by $0.76\text{--}0.81\times$ its length on vein M, receiving crossvein 1m-cu at apical $0.30\text{--}0.42$. SMC3 $0.93\text{--}1.1\times$ as long as SMC2 on vein M, narrowed on vein Rs by $0.40\text{--}0.51\times$ its length on vein M.

Type material.—Holotype ♀, Mount Sanage, Aichi, Evergreen Forest, Malaise Trap, 11–17.ix.1992, T. Kanbe (TMU). Paratypes: 1♀, Yamanaka, Takahama-cho, Fukui, 30.vi.2000, S. Inoue (TMU); 1♀, same data except for date, 16.viii.2001 (TMU); 1♀, Katsumi, Obama-shi, Fukui, 15.viii.2002, S. Inoue (TMU); 1♀, same locality as holotype, Deciduous Forests, Emergence Trap, 14–20.viii.1992, K. Shima (TMU); 1♀, Seto, Tougoku, Aichi, Evergreen Forest, Malaise Trap, 3–9.VIII.1997, M. Kenmotsu (FSAG); 1♂, Seto, Johkoji, Aichi, Evergreen Forest, Malaise Trap, 29.VIII.2000, C. Mizuno & N. Suzuki (FSAG); 1♀, Toyota, Sanage, Aichi, Evergreen Forests, Malaise Trap, 10.vi–16.vi.2002, Mizue Kiyota (TMU); 2♀1♂, same data except for date, 22.vii–28.vii.2002 (TMU); 1♂, same data except for date, 19.viii–25.viii.2002 (TMU); 1♂, same data except for date, 2.ix–8.ix.2002 (TMU).

Etymology.—In honor of the provider of specimens.

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