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ON THE JAPANESE SPECIES OF THE GENUS
PROCANACE HENDEL, WITH
DESCRIPTIONS OF SEVEN NEW SPECIES.
(DIPTERA : CANACEIDAE)

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The genus *Procanace* Hendel, a small group of the Canaceidae, seems to be restricted to the Pacific region, being represented by six species. However, no species has hitherto been recorded in Japan. In the course of the present studies, I have found ten species in Japan including the Ryukyu Islands, of which seven are new to science.

The holotypes of the new species described herein are deposited in the collection of the Entomological Institute, Hokkaido University, Sapporo.

On this occasion I wish to express my gratitude to Prof. C. Watanabe for his constant guidance. Sincere thanks are also due to Dr. W. W. Wirth of the U. S. National Museum, Washington, D. C., U. S. A., Dr. A. G. Soika of the Museo Civico di Storia Naturale, Venezia, Italy, Dr. R. Dahl of the Zoological Institute, Lund, Sweden, and Dr. M. Sasakawa of the Entomological Laboratory, Kyoto Prefectural University, Kyoto, Japan, for their kindness in offering reprints of their valuable papers.

Genus *Procanace* Hendel

Procanace Hendel, Suppl. Ent. 2 : 93, 1913; Wirth, B. P. Bishop Mus. Occ. Pap. 20 : 253, 1951.

Type-species: *Procanace grisescens* Hendel, 1913.

This genus is characterized by the following aspects:—

(1) Mesofrons without prominent bristles. (2) Both anterior and posterior notopleurals present. (3) Prescutellar acrostichals absent. (4) Four marginal scutellars present. (5) Arista pubescent entirely.

The genitalia are very useful as taxonomic characters separating not only genera but also species in this family. The terminology of the genital parts used in this paper is explained by the figures.

The species occurring in Japan are distinguishable by the following key:—

Key to the species

1. Third segment of antennae brownish-yellow to yellow. 2
- Third segment of antennae brown to brownish-black. 4
2. Third segment of antennae brownish-yellow; tibiae and metatarsi of middle legs bearing long hairs; labium with several white, long and soft hairs ventrally. In male, sixth tergite bent inward

- on ventral side of the body. Body length, 3.0 mm. *P. fulva*, sp. nov.
- Third segment of antennae yellow; legs without conspicuous hairs and bristles. In male, sixth tergite not projecting inwardly. Body length, 2.0 mm.-2.5 mm. 3
3. Anterior margin of the frons tinged with orange-yellow; legs yellow; pleura and venter of abdomen bearing fine, whitish-yellow setae. In male, ventral lobe very short and slender, and dorsal lobe long and stout, with numerous marginal weak setae. Body length, 2.5 mm.
. *P. flavescens*, sp. nov.
- Frons uniformly colored; legs light brown; pleura and venter of abdomen bearing black setae; femora with ash-gray pollen. In male, ventral lobe slightly smaller and shorter than dorsal lobe, both bearing several fine setae. Body length, 2.3 mm. *P. flaviantennalis*, sp. nov.
4. Mesonotum with abundant well-developed setae except for prescutellar area. 5
- Mesonotum with a few fine setae only laterally or anteriorly; scutellum always without setae on its disk. 6
5. Scutellum provided with several fine setae on its disk; dorsal lobe gradually expanded apically, with a short cleft at anterocentral margin and with many long bristles. Body length, 2.3 mm.
. *P. nakazatoi*, sp. nov.
- Scutellum without fine setae on its disk; dorsal lobe gradually narrowed apically, with six strong anterodorsal bristles and about eight setae apically, without such a cleft. Body length, 2.0 mm.
. *P. williamsi*.
6. Mesonotum half-shining, violaceous-brown; postocellars always strong; fore femora with long and black bristles in a row anterodorsally. Body length, 3.2 mm. *P. cressoni*.
- Mesonotum dark brown to olivaceous-brown, with pollen; postocellars very weak or absent; fore femora without long and black bristles anterodorsally. 7
7. Frons dark gray, with anterior margin reddish. Body length, 2.0 mm. *P. grisescens*.
- Frons light brown to dark brown. 8
8. Frons and mesonotum brown, with several setae; third segment of antennae round. Lamellae and spines of ovipositor short and small. In male, ventral processes of ninth tergite (epandrium) divided into three lobes. Body length, 2.2 mm. *P. aestuaricola*, sp. nov.
- Frons and mesonotum dark brown, with a few setae; third segment of antennae oval. Lamellae and spines of ovipositor long and large. In male, ventral processes of ninth tergite divided into two lobes. 9
9. Middle femora with several black, short and stout setae posteroventrally. In male, middle tibiae with several long hairs apically. In female, lobe of eighth sternite with six or seven spines. Body length, 2.5 mm. *P. rivalis*, sp. nov.
- Legs without conspicuous setae and hairs; lobe of eighth sternite with seven spines. Body length, 1.8 mm. *P. suigoensis*, sp. nov.

Procanace rivalis, sp. nov.

Male: Frons uniformly dark brown; antennae, basal part of arista and eyes dark purple; cheeks, face and clypeus with coarse whitish-gray pollen; palpi orange-yellow, with whitish pollen. Pleura with grayish pollen; mesonotum and scutellum dark brown; abdomen brown, with whitish-gray pollen ventrally; halteres yellow. Wings light brownish hyaline; veins dark brown. Legs with grayish pollen; all metatarsi yellow; hind femora half-shining and dark purple laterally. All bristles and setae black.

Frons with eight to ten fine setae scattered on anterior half; three fronto-orbitals very strong, with four minute setae alternating with the bristles. Ocellars strong, with two or

three weak setae between them; postocellars very weak; inner and outer verticals strong; third segment of antennae oval and pubescent, with a long, finely pubescent arista. Face concave; cheeks broad, with three bristles, one being incurved and the rest strong and upcurved; palpi bearing three or four very fine yellow setae. Four dorsocentrals in a row, one humeral with three or four fine setae around, two notopleurals, one presutural, two supra-alars, and four marginal scutellars, all being strong. Mesonotum with a few fine setae anteriorly and laterally; no setae on scutellar disk; two mesopleurals, one being strong and the other moderate, with fine setae scattered around; one sternopleural strong. Abdomen with seven tergites visible and with many well-developed hairs; middle femora bearing about 10-14 black, short and stout setae posteroventrally in a row (Fig. 1, B); middle tibiae bearing several long hairs dorsally and three short setae posteroapically; metatarsus as long as the remaining segments combined.

Genitalia (Fig. 2, F): Dorsal lobe stout, long and thumb-like, with a membrane dorso-

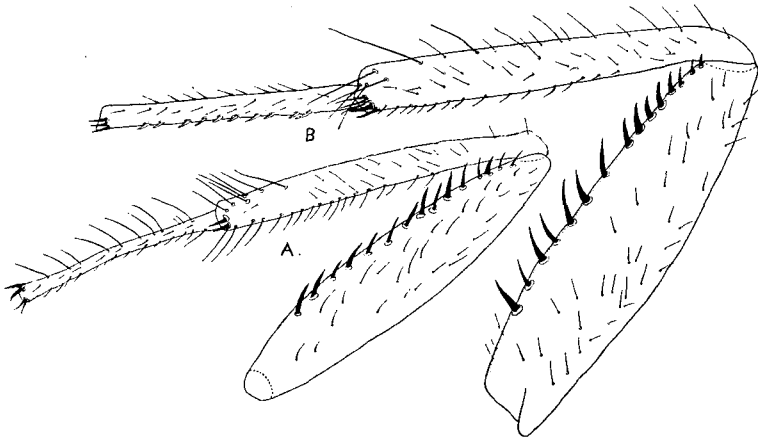


Fig. 1. Middle leg (lateral view).

A. *Procanace fulva*, sp. nov.; B. *Procanace rivalis*, sp. nov.

apically and with many scattered setae; ventral lobe slender and finger-like, half as long as dorsal lobe, bearing two long and three short setae apically.

Length 2.5 mm., wing 2.4 mm.

Female (Fig. 3, D): Similar to the male in color, but hairs on middle femora and tibiae not so conspicuous; eighth tergite of abdomen with four long hairs on posterior margin; posterior margin of seventh sternite indented at middle; lamellae of ovipositor long; lobe of eighth sternite with six or seven spine-like setae; pre-apical plate obsolete; posterior margin of apical plate convex, with many weak hairs.

Length 2.8 mm., wing 2.5 mm.

Holotype (♂) & paratypes (3♀, 1♂), Katsurasawa, Hokkaido, 14, June 1962. Paratypes: 2♀, 1♂, Jozankei, Hokkaido, 14, July 1961; 2♀, 1♂, Haruyama, Iwate-ken, Honshu, 25, Aug. 1962; 3♀, 3♂, Izu, Shizuoka-ken, Honshu, 20, July 1963; 7♀, 5♂, Chomonkyo, Yamaguchi-ken, Honshu, 4, Aug. 1963; 8♀, 6♂, Uwajima, Ehime-ken,

Sikoku, 9, Sept. 1963; 15 ♀♀, 10 ♂♂, Yakushima, Kyushu, 13, Aug. 1963.*

Habitat: This species occurs on the shores of brooks.

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

Remarks: Judging from the literature, this species, on account of its coloration, is much like *P. opaca* de Meijere, 1916, from Java, but is immediately distinguishable from the latter by its large size, grayish legs and yellowish-brown tarsi. Moreover, the male of this species is easily distinguished from that of any other species by the middle femora and tibiae which have conspicuous spine-like setae and hairs.

***Procanace flavescens*, sp. nov.**

Male: Frons dull brown, with anterior margin orange-yellow; third antennal segment, face and palpi orange-yellow; arista dark brown basally; cheeks, clypeus and pleura gray, with bluish pollen. Scutellum and mesonotum olivaceous-brown; abdomen dull brown, with grayish pollen; halteres and legs yellow; all coxae and hind femora with grayish pollen. Wings yellowish hyaline; veins yellowish-brown. Bristles and setae of legs, propleura and venter of abdomen yellowish, and otherwise black.

Frons with 12-13 fine setae scattered on anterior half; three fronto-orbitals strong, with four minute setae alternating with the bristles; ocellars strong, with two very weak setae between them; postocellars very weak; inner and outer verticals strong; third segment of antennae rounded and pubescent, with arista finely pubescent; palpi with one terminal fine seta and with some setae on dorsal part; three genal bristles strong, one being incurved and the rest upcurved, with a few fine setae in a row near oral margin. Four dorsocentrals strong, the third being slightly displaced inside and the fourth outside; two supra-alars strong; one humeral strong, with five to seven weak setae around; one presutural and two notopleurals strong; one mesopleural moderate, with a few fine whitish setae around; two yellowish propleurals strong; one sternopleural strong; mesonotum with several fine setae, the prescutellar area and scutellum being bare. Abdomen with scattered moderate hairs. Legs with both yellowish and blackish hairs; fore femora with four or five blackish, conspicuous and curved hairs on distal half; claws large and curved.

Genitalia (Fig. 2, D): Dorsal lobe finger-shaped, bearing dense hairs and about two times as long as the ventral one, which is slender with a tuft of about five fine hairs at the tip.

Length 2.4 mm., wing 2.0 mm.

Female (Fig. 4, A): Similar to the male in color; eighth tergite of abdomen with four long bristles and a few short setae on posterior margin; lamellae of ovipositor long and slender, posterior margin of seventh sternite shallowly concave; lobe of eighth sternite with seven or eight curved, small, black, spine-like setae; pre-apical plate very small; apical plate membranous, with fine hairs at anterior margin.

Holotype (♂) & paratypes (18 ♀♀, 4 ♂♂), Ibusuki, Kagoshima-ken, Kyushu, 17, Oct. 1961. Paratype: 1♂, Matsuyama, Shikoku, 5, Sept. 1962.

Habitat: This species occurs on shores around estuaries.

* Specimens without stating collectors are taken by I. Miyagi.

Distribution: Japan (Shikoku; Kyushu).

Remarks: This species is similar to *P. grisescens* Hendel, 1913. Having examined a paratype of *grisescens* afforded from the U.S. National Museum, I have concluded that the new species is apparently distinct from *grisescens* by the orange-yellow margin of the frons, by the fourth pair of dorsocentrals which is displaced outside and by the shape of the male genitalia.

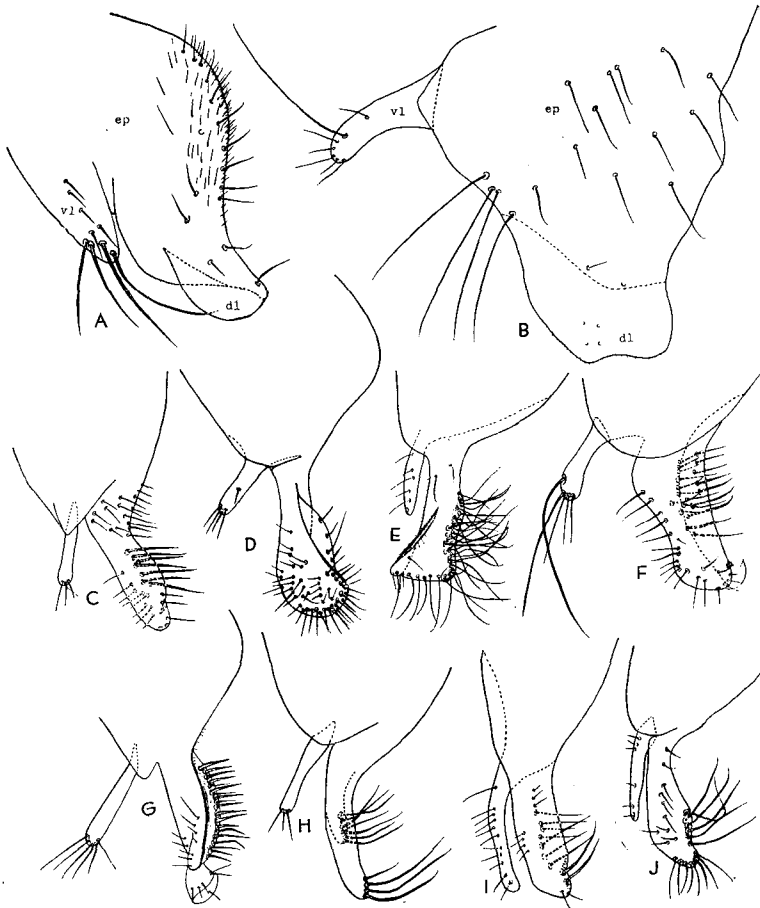


Fig. 2. Male genitalia (lateral view).

A. *Procanace cressoni* Wirth; B. *P. fulva*, sp. nov.; C. *P. suigoensis*, sp. nov.; D. *P. flavescens*, sp. nov.; E. *P. nakazatoi*, sp. nov.; F. *P. rivalis*, sp. nov.; G. *P. grisescens* Hendel; H. *P. aestuaricola*, sp. nov.; I. *P. flaviantennalis*, sp. nov.; J. *P. williamsi* Wirth.

ep: epandrium; dl: dorsal lobe; vl: ventral lobe.

***Procanace aestuaricola*, sp. nov.**

Male: Frons dull brown; antennae and basal part of arista blackish-brown; cheeks, face and clypeus with grayish pollen, somewhat whitish in certain angles; palpi yellow. Mesonotum and scutellum dull olivaceous-brown, with ash-gray pollen; halteres yellow.

Coxae and femora with grayish pollen; tibiae and tarsi yellow. Wings hyaline, with yellowish veins. All bristles and setae black.

Frons with 11 or 12 fine setae scattered on anterior half; three fronto-orbitals strong, with four minute setae alternating with the bristles; ocellars strong, postocellars very weak; inner and outer verticals strong; third segment of antennae rounded, with arista short and finely pubescent; palpi with a fine seta at apex; three genal bristles strong, one being incurved and the rest upcurved, with a few fine setae around; four dorsocentrals strong, the third being displaced inside and the fourth slightly displaced laterally; one humeral strong, with a few fine setae around; one presutural and two supra-alars moderate; two notopleurals strong; one mesopleural and sternopleural moderate; mesonotum with several fine setae scattered laterally and anteriorly. Abdomen with abundant fine and moderate setae. Legs with both black and yellow setae, which are short and scattered in whole; dorsal part of fore femora with three or four moderate hairs.

Genitalia (Fig. 2, H): Dorsal lobe large with terminal hairs, produced below on inner side into a small lobule bearing five to seven long sharp hairs dorsoapically. Ventral lobe small, with a few terminal bristles.

Length 2.1 mm., wing 1.6 mm.

Female (Fig. 4, D): Similar to the male in color; eighth tergite of abdomen with four long hairs on posterior margin. Dorsal lamellae of ovipositor very short; seventh sternite split into lateral halves; lobe of eighth sternite with eight to ten curved, small, black, spine-like setae; pre-apical plate obsolete; apical plate large and rounded posteriorly, with many fine hairs.

Length 2.2 mm., wing 1.8 mm.

Holotype (♂) & paratypes (1 ♀, 2 ♂♂), Matsuyama, Shikoku, 4, Oct. 1961. Paratypes: 3 ♀♀, 1 ♂, Matsuyama, Shikoku, 27, Aug. 1962; 2 ♀♀, 2 ♂♂, Kin, Okinawa, Ryukyus, 11, May 1962; 2 ♂♂, Kagoshima, Kyushu, 30, Apr. 1963, S. Takagi leg.

Habitat: This species occurs on shores around estuaries.

Distribution: Japan (Shikoku; Kyushu) and Ryukyus.

Remarks: This species is very closely related to the preceding species, *P. flavescens*, from which it is readily distinguished by the blackish-brown antennae and by the grayish-brown anterior margin of the frons. It resembles also *P. williamsi* Wirth, 1951, and *P. townesi* Wirth, 1951, but may be distinguishable from *williamsi* by having a few setae on the head and thorax. Having examined a female paratype of *townesi* I have concluded that the new species is apparently distinct from *townesi* by the fourth pair of dorsocentrals displaced outside. Moreover, this species is distinguished from any other species by the shape of the genitalia in both sexes.

***Procanace flaviantennalis*, sp. nov.**

Male: Frons dull, olivaceous-brown; second antennal segment and arista blackish-brown; third antennal segment yellow; cheeks and clypeus with gray pollen; face with grayish pollen; palpi yellow. Mesonotum and scutellum dull olivaceous-brown, with pollen; pleura with ash-brown pollen; tarsi yellow, the apical segment being brown. Wings

brownish hyaline, with yellowish-brown veins. Abdomen with ash-gray pollen.

Frons with 13-15 various setae scattered on anterior half, and with three strong fronto-orbitals, with four minute setae alternating with the bristles. Ocellars strong, with two or three fine setae between them; postocellars weak; inner and outer verticals strong; third antennal segment rounded, with pubescence. Palpi whitish pubescent, with a whitish setae apically; three genal bristles strong, one being incurved and the rest upcurved, with a few fine setae in a row near oral margin. Four dorsocentrals strong; scutellum with four strong marginals, disk of the scutellum without fine setae; mesonotum with several fine setae laterally and anteriorly. One humeral, with six to seven fine setae, one presutural, two notopleurals, with two or three fine setae, all strong. Legs with numerous weak or moderate, scattered setae; claws large and curved. Abdomen with weak or moderate scattered setae.

Genitalia (Fig. 2, I): Dorsal lobe large, bearing about ten strong bristles on inner surface; ventral lobe slender, as long as or a little shorter than dorsal lobe, bearing several setae on ventral margin.

Length 2.0 mm., wing 1.9 mm.

Female (Fig. 4, F): Similar to the male in color. Abdomen with long scattered bristles; eighth tergite with four long hairs on posterior margin. Lamellae of ovipositor slender; posterior margin of seventh sternite with a V-shaped indentation at middle; lobe of eighth sternite with six or seven yellow spine-like setae; pre-apical plate obsolete; apical plate membranous, with fine hairs.

Length 2.6 mm., wing 2.1 mm.

Holotype (♂) & paratypes (20 ♀♀, 10 ♂♂), Ishigaki-jima, Ryukyus, 14, Apr. 1962.

Habitat: This species occurs on shores around estuaries.

Remarks: This species resembles *P. williamsi* Wirth and *P. aestuaricola* Miyagi, but may be distinguishable from those species by the yellow third segment of the antennae and by the structures of the male genitalia.

***Procanace fulva*, sp. nov.**

Male: Large species. Frons dull brown; second antennal segment and basal part of arista dark brown; third antennal segment brownish-yellow; face and clypeus with yellowish-brown pollen; palpi yellow, with white pollen; cheeks, pleura and abdomen with ash-gray pollen. Mesonotum and scutellum with dull brown pollen; halteres yellow; wings light brown hyaline, with dark brown veins. Coxae and femora with bluish-gray pollen; tibiae and metatarsi yellow.

Frons with about eight fine setae scattered on anterior half; three strong fronto-orbitals, with four minute setae alternating with the bristles; ocellars strong, postocellars very weak; inner and outer verticals strong; third segment of antennae oval and pubescent, with a long pubescent arista; palpi with very fine yellow setae; genae with three bristles, one being incurved and the rest strong, upcurved, and mingled with three weak setae in a row near oral margin; labium bearing several white, long and soft hairs ventrally. Four dorsocentrals, one humeral, with three weak setae around, one presutural, two supra-alars,

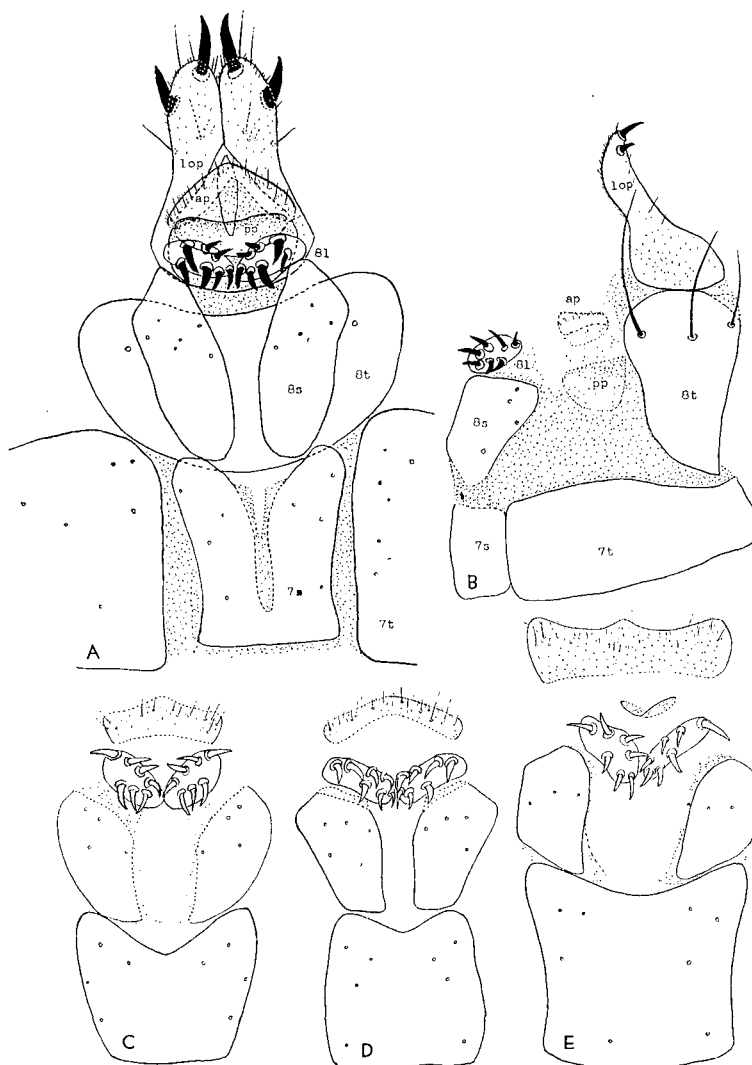


Fig. 3. Female genitalia (A, C-E, ventral view; B, lateral view).

A. *Procanace nakazatoi*, sp. nov.; B. *P. cressoni* Wirth; C. *P. grisescens* Hendel; D. *P. rivalis*, sp. nov.; E. *P. suigoensis*, sp. nov.

ap: apical plate; lop: lamellae of ovipositor; pp: pre-apical plate;
7s: 7th sternite; 7t: 7th tergite; 8l: lobe of 8th sternite; 8s:
8th sternite; 8t: 8th tergite.

two notopleurals, four scutellars, all strong; scutellum without setae on its disk; mesonotum with weak setae between humeral and first dorsocentral. Femora with several long and yellow setae in a row laterally; middle legs (Fig. 1, A) with conspicuous hairs and setae; femora with about 15 black, short and stout setae in a row posteroventrally; tibiae with about ten long setae, and with two stout and short setae on distal half; metatarsi with a row of about nine long dorsal bristles. Abdomen bearing many moderate and weak setae, fifth tergite widest, with six or seven moderate bristles on posterior margin; apical tergite bent inward on ventral side of the abdomen.

Genitalia (Fig. 2, B): Ventral processes of epandrium gradually narrowed apically; apical margin of dorsal lobe indented at middle, with dense minute setae apically and four strong hairs ventrally; ventral lobe small and slender, with one long and four weak bristles on apical margin.

Length 3.0 mm., wing 2.5 mm.

Female (Fig. 4, E): Similar to the male in color. Middle tibiae and metatarsi with hairs less conspicuous than in the male. Eighth tergite with four long hairs; lamellae of ovipositor long, with several fine white hairs; posterior margin of seventh sternite membranous; lobe of eighth sternite with six or seven spine-like setae; pre-apical plate very small; posterior margin of apical plate convex, with many fine hairs.

Length 3.1 mm., wing 2.8 mm.

Holotype (♂) & paratypes (16 ♀♀, 8 ♂♂), Okoppe, Hokkaido, 16, July 1962. Paratypes: 1 ♂, Nukabira, Hokkaido, 11, July 1961; 20 ♀♀, 10 ♂♂, Miyako, Iwate-ken, Honshu, 25, Aug. 1962; 4 ♀♀, 3 ♂♂, Hiraizumi, Iwate-ken, Honshu, 25, Aug. 1962; 4 ♀♀, 3 ♂♂, Tsushima, Kyushu, 6, Aug. 1963; 2 ♀♀, 1 ♂, Ichinohe, Iwate-ken, Honshu, 23, Aug. 1962; 4 ♀♀, 4 ♂♂, Izu, Shizuoka-ken, Honshu, 20, July 1963.

Habitat: This species occurs on shores around flowing fresh water.

Distribution: Japan (Hokkaido; Honshu; Kyushu).

Remarks: This species is closely related to *P. opaca* de Meijere from Java and *P. rivalis* Miyagi from Japan, being distinguished from those by the third antennal segment brownish-yellow, its larger size, and the conspicuous hairs of the middle tibiae and metatarsi of the male. Moreover, it is very distinct by the shape of the epandrium in the male.

***Procanace suigoensis*, sp. nov.**

Male: Frons dark brown uniformly; antennae dark brown; face and cheeks with ash-gray pollen; clypeus with light brown pollen; palpi yellowish-brown; pleura with grayish pollen; mesonotum and scutellum dull brown; abdomen dark brown, with grayish pollen; halteres yellow. Wings light brown. Legs with ash-gray pollen; metatarsi yellowish-brown; femora dark purple, without pollen laterally.

Frons with five or six setae on anterior half; three strong fronto-orbitals, with four minute setae alternating with the bristles; ocellars strong, postocellars very weak, four weak setae on ocellar triangle; inner and outer verticals strong. Third segment of antennae oval, with white pubescence. Four dorsocentrals, the fourth being slightly removed laterally, one humeral, with three fine setae around, one presutural, two notopleurals, one meso-

pleural and one sternopleural, all distinct; mesonotum with several minute setae anterolaterally; scutellum without setae on disk. Seventh tergite of abdomen visible, with many well-developed setae. Legs bearing scattered, moderate setae; metatarsus as long as the remaining segments combined.

Genitalia (Fig. 2, C): Dorsal lobe stout, long and thumb-like, with setae and seven to ten stout bristles on inner surface dorsally, ventral lobe slender, round apically, with two or three apical fine setae.

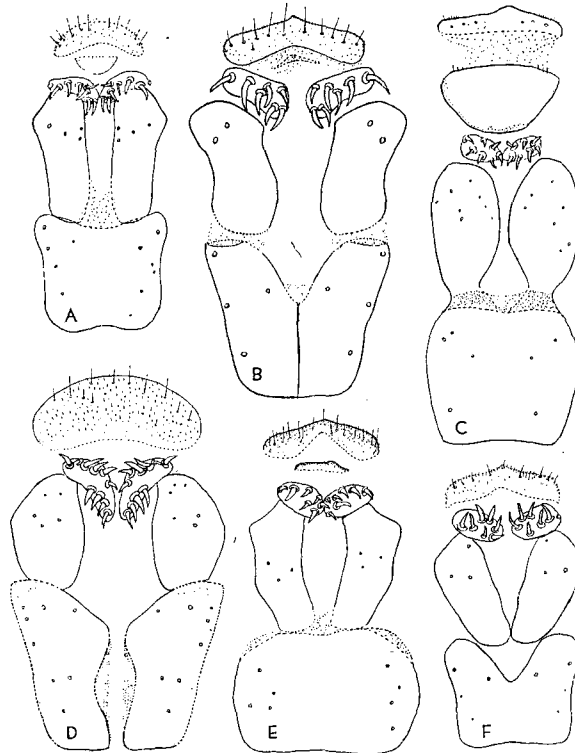


Fig. 4. Female genitalia (ventral view).

A. *Procanace flavescens*, sp. nov.; B. *P. williamsi* Wirth; C. *P. cressoni* Wirth; D. *P. aestuaricola*, sp. nov.; E. *P. fulva*, sp. nov.; F. *P. flaviantennalis*, sp. nov.

Length 1.8 mm., wing 1.7 mm.

Female (Fig. 3, E): Similar to the male in color. Eighth tergite with two pairs of long bristles; lamellae of ovipositor moderate; posterior margin of seventh sternite concave; pre-apical plate very small; apical plate large, sinuate posteriorly, with many fine hairs. Lobe of eighth sternite with seven spine-like setae.

Length 2.0 mm., wing 1.9 mm.

Holotype (♂) & paratypes (18 ♀♀, 3 ♂♂), Suigo, Chiba-ken, Honshu, 27, Aug. 1962. Paratypes: 4 ♀♀, 3 ♂♂, Kagoshima, Kyushu, 16, Aug. 1963.

Habitat: This species occurs on shores around flowing fresh water.

Distribution: Japan (Honshu; Kyushu).

Remarks: This species is closely allied to the preceding species *P. rivalis* in general appearance, but is immediately distinguishable from the latter by its smaller size and by lacking conspicuous hairs and bristles on the legs.

***Procanace nakazatoi*, sp. nov.**

Male: Frons dull brown; antennae and arista brown; face and clypeus with dense gray pollen; cheeks with dense brownish-gray pollen; palpi yellow. Mesonotum and scutellum dull brown, with pollen; pleura with ash-gray pollen; halteres yellow. Legs with ash-gray pollen; tarsi brownish-yellow, the apical segment being dark brown. Wings grayish-brown, hyaline; veins brown. Abdomen with ash-gray pollen. All bristles and setae black.

Frons with about 15 various setae scattered on anterior half; three strong fronto-orbitals, with four minute setae alternating with the bristles. Ocellars strong, with two minute setae between them; postocellars weak; inner and outer verticals strong; third antennal segment rounded, with whitish pubescence and with a whitish seta apically; three genal bristles strong, one being incurved and the rest upcurved with a few fine setae in a row near oral margin. Four dorsocentrals strong; scutellum with four strong marginals and with six to eight setae on the disk; mesonotum with many fine setae; one presutural, two notopleurals, one humeral and mesopleural with several fine setae, and one sternopleural, all these bristles being strong. Legs with numerous weak or moderate setae; coxae with several weak and white setae. Abdomen with weak or moderate setae.

Genitalia (Fig. 2, E): Dorsal lobe long; gradually expanded apically, with a short cleft at anterocentral margin, with many long bristles. Ventral lobe small and short, gradually narrowed apically, with three to five fine setae on ventral margin.

Length 2.3 mm., wing 2.3 mm.

Female (Fig 3, A): Similar to the male in color. Abdomen with long scattered bristles; eighth tergite with four long hairs on posterior margin. Dorsal lamellae of ovipositor long; posterior margin of seventh sternite deeply and narrowly indented medially; lobe of eighth sternite with seven spine-like setae; pre-apical plate very small; apical plate convex at posterior margin, with many fine hairs.

Length 2.3 mm., wing 2.3 mm.

Holotype (♂) & paratypes (6 ♀♀, 5 ♂♂), Nago, Okinawa, Ryukyus, 2, May 1962. Paratypes; 4 ♀♀, 7 ♂♂, Oku, Okinawa, Ryukyus, 13, May 1962. 9 ♀♀, 14 ♂♂, Amamioshima, Ryukyus, 18, March 1964, H. Takada leg.

Habitat: This species occurs on shores around estuaries.

Distribution: Ryukyus.

Remarks: This species is closely related to *P. williamsi* in coloration and chaetotaxy, differing from the latter by having six to eight setae on the disk of the scutellum. Moreover, the present species is distinct from any other species by the genital features of the male.

Procanace grisescens Hendel

Procanace grisescens Hendel, Suppl. Ent. 2: 93, 1913; Wirth, Occ. Pap. B. P. Bishop Mus. 20: 258 1951.

Specimens examined:—1♂, paratype of *grisescens* (U. S. N. M., 40640), Tainan, Formosa, Aug. 1908, H. Sauter leg.; 1♀, 1♂, Bangkok, Tailand, Sept. 1962, J. Scanlon leg.; 1♀, 1♂, Lahore, W. Pakistan, June 1956, H. Barnett, leg.; 4♀♀, 2♂♂, Suigo, Chiba-ken, Honshu, 27, Aug. 1962; 2♀♀, 1♂, Izu, Shizuoka-ken, Honshu, 20, July 1963; 3♀♀, 3♂♂, Wajima, Ishikawa-ken, Honshu, 28, July 1963; 4♀♀, 3♂♂, Tenri, Nara-ken, 10, Oct. 1961; 1♀, 5♂♂, Uwajima, Ehime-ken, Shikoku, 9, Sept. 1962; 3♀♀, 7♂♂, Karihama, Ehime-ken, Shikoku, 11, Sept. 1962; 4♀♀, 3♂♂, Tsushima, Kyushu, 5, Aug. 1963; 5♀♀, 2♂♂, Satsumako, Kagoshima-ken, Kyushu, 17, Oct. 1961; 5♀♀, 5♂♂, Yakushima, Kyushu, 13, Aug. 1963; 3♀♀, 1♂, Nago, Okinawa, Ryukyus, 2, May 1962; 10♀♀, 5♂♂, Miyako-jima, Ryukyus, 24, Apr. 1962; 2♀♀, 2♂♂, Ishigaki-jima, Ryukyus, 12, Apr. 1962; 1♂, Iriomote-jima, Ryukyus, 16, Apr. 1962.

Habitat: This species lives on the shores of fresh water.

Distribution: Japan (Honshu; Shikoku; Kyushu), Ryukyus, Formosa, Tailand and W. Pakistan.

This species is widely distributed in Asia. It is distinguished from any other known species by the small size, the yellow legs, the reddish anterior portion of the frons and the features of the male genitalia.

As a supplement to the original description of *grisescens* the following note may be given below:—

Hind femora shining and blackish-brown ventrally, with grayish-brown pollen dorsally; third segment of antennae blackish-brown and oval; palpi yellow, without setae; ocellars strong, with two fine setae between them; postocellars moderate or weak; presutural absent; one mesopleural moderate, with two or three minute setae, sternopleural lacking.

Male genitalia (Fig. 2, G): Dorsal lobe stout, thumb-like, with a row of about 19 strong spine-like bristles on dorsal margin, and with a somewhat membranous small flap apically; ventral lobe slender, its apical margin rounded with four to six setae.

Female genitalia (Fig. 3, G): Posterior margin of the seventh sternite with a V-shaped indentation at middle; lobe of eighth sternite with six or seven spine-like setae; pre-apical plate obsolete; apical plate, gently sinuate posteriorly, with several fine hairs.

The specimens taken from Shikoku have a weak or moderate sternopleural, a fine humeral, and two to several strong propleurals.

Procanace williamsi Wirth

Procanace williamsi Wirth, Occ. Pap. B. P. Bishop Mus. 20: 257, 1951.

Specimens examined:—10♀♀, 5♂♂, Izu, Sizuoka-ken, Honshu, 20, July 1963; 10♀♀, 5♂♂, Omaezaki, Sizuoka-ken, Honshu, 22, July 1963; 2♀♀, Matsuyama, Shikoku, 4, Oct. 1961; 5♀♀, 6♂♂, Nagahama, Ehime-ken, Shikoku, 8, Sept. 1962; 20♀♀, 20♂♂, Uwajima, Ehime-ken, Shikoku, 9, Sept. 1962; 3♀♀, 4♂♂, Ibusuki, Kagoshima-ken, Kyushu, 17, Oct. 1961; 20♀♀, 13♂♂, Yakushima, Kyushu, 13, Aug. 1963; 7♀♀, 12♂♂, Tsushima, Kyushu,

6, Aug. 1963.

Habitat: This species lives on shores around estuaries.

Distribution: Japan (Honshu; Shikoku; Kyushu) and Hawaiian Is.

On the basis of the specimens examined, the genitalia are stated below:—

Lobe of eighth sternite of the female (Fig. 4, B) with seven small spine-like setae; posterior margin of seventh sternite with a V-shaped indentation at middle; pre-apical plate faintly visible; posterior margin of apical plate convex at middle, with several fine hairs. Male genitalia (Fig. 2, J): Dorsal lobe finger-like, with six strong dorsoapical bristles and about eight setae apically; ventral lobe slender, with a few fine setae ventrally.

This species comes near the preceding species, *P. flaviantennalis* Miyagi, but is immediately distinguished therefrom by the brown antennae and by the structures of the male genitalia.

Procanace cressoni Wirth

Procanace cressoni Wirth, Occ. Pap. B. P. Bishop Mus. 20: 256, 1951.

Specimens examined: 1 ♂, paratype of *cressoni* (U. S. N. M., no. 7589), China, July, 1935, M. S. Yang leg.; 12 ♀♀, 6 ♂♂, Abashiri, Hokkaido, 14, Aug. 1962; 7 ♀♀, 14 ♂♂, Otaru, Hokkaido, 25, July 1962; 3 ♀♀, 2 ♂♂, Ogahanto, Akita-ken, Honshu, 1, Sept. 1963; 2 ♀♀, 1 ♂, Hegura-jima, Ishikawa-ken, Honshu, 28, Aug. 1963; 3 ♀♀, 2 ♂♂, Omaezaki, Shizuoka-ken, Honshu, 23, July, 1963; 2 ♀♀, 5 ♂♂, Hamanako, Shizuoka-ken, Honshu, 23, July 1963; 11 ♀♀, 10 ♂♂, Inubo, Chiba-ken, Honshu, 27, Aug. 1962; 7 ♀♀, 3 ♂♂, Nagahama, Ehime-ken, Shikoku, 8, Sept. 1962; 3 ♀♀, 1 ♂, Uwajima, Ehime-ken, Shikoku, 9, Sept. 1961; 2 ♀♀, 3 ♂♂, Wakasugi, Fukuoka-ken, Kyushu, 3, May 1963, S. Takagi leg.; 2 ♀♀, Tsushima, Kyushu, 6, Aug. 1963; 1 ♂, Kagoshima, Kyushu, 30, Apr. 1963; 2 ♀♀, Yakushima, Kyushu, 13, Aug. 1963; 2 ♀♀, 1 ♂, Beppu, Oita-ken, Kyushu, 14, Oct. 1962; 2 ♀♀, 1 ♂, Nobeoka, Miyazaki-ken, Kyushu, 14, Oct. 1962.

Habitat: This species is usually found on the wet rocks of sea-shores.

Distribution: Japan (Hokkaido; Honshu; Shikoku; Kyushu) and China.

On the basis of the specimens examined a brief description is given below:—

Ocellars and postocellars strong; palpi yellow, pubescent, with one or two whitish setae apically; legs light brown, fore femora with about 15 conspicuous bristles anterodorsally. Female genitalia (Fig. 3, B & Fig. 4, C): Posterior margin of seventh sternite membranous and indistinct; lobe of eighth sternite with six to ten small spine-like setae; pre-apical plate well developed; apical plate convex posteriorly. Male genitalia (Fig. 2, A): Dorsal lobe large and rounded, without setae apically; ventral lobe small, short, finger-like, with four long hairs apically.

This species was originally described from China. It should be noted that in the specimens at hand from Hokkaido the body is larger (3.0–3.5 mm.) and the mesonotum is shining black, with brown pollen sparingly.

APPENDIX

In the following lines is given a list of the species of the genus *Procanace*.

1. ***Procanace aestuaricola*** Miyagi (sp. nov.)
Distribution: Japan and Ryukyus.
2. ***Procanace cressoni*** Wirth
Procanace cressoni Wirth, Occ. Pap. Bishop Mus. 20: 256, 1951.
Distribution: China and Japan.
3. ***Procanace flavescens*** Miyagi (sp. nov.)
Distribution: Japan.
4. ***Procanace flaviantennalis*** Miyagi (sp. nov.)
Distribution: Ryukyus.
5. ***Procanace fulva*** Miyagi (sp. nov.)
Distribution: Japan.
6. ***Procanace grisescens*** Hendel
Procanace grisescens Hendel, Suppl. Ent. 2: 93, 1913; Wirth, Occ. Pap. Bishop Mus. 20: 258, 1951.
Distribution: Formosa, Tailand, W. Pakistan, Japan and Ryukyus.
7. ***Procanace nakazatoi*** Miyagi (sp. nov.)
Distribution: Ryukyus.
8. ***Procanace nigroviridis*** Cresson
Procanace nigroviridis Cresson, Proc. Hawai. Ent. Soc. 6: 277; Wirth, Occ. Pap. Bishop Mus. 20: 254, 1951.
Distribution: Hawaiian Is.
9. ***Procanace opaca*** de Meijere
Procanace opaca de Meijere, Tijdschr. voor ent. 59: 272, 1916; Wirth, Occ. Pap. Bishop Mus. 20: 258, 1951.
Distribution: Java.
10. ***Procanace rivalis*** Miyagi (sp. nov.)
Distribution: Japan.
11. ***Procanace suigoensis*** Miyagi (sp. nov.)
Distribution: Japan.
12. ***Procanace townesi*** Wirth
Procanace townesi Wirth, Occ. Pap. Bishop Mus. 20: 255, 1951.
13. ***Procanace williamsi*** Wirth
Procanace williamsi Wirth, Occ. Pap. Bishop Mus. 20: 257, 1951.
Distribution: Hawaiian Is. and Japan.

Errata

- Vol. 26, No. 1, 1963, p. 37, line 11 from bottom, for "ing" read "shading".
Vol. 26, No. 2, 1963, p. 79, line 10 from top, for "apically" read "basally".
Vol. 26, No. 2, 1963, p. 79, line 15 from top, for "basally" read "apically".
Vol. 27, No. 2, 1965, p. 82, line 9 from top, for "VII" read "VIII".
Vol. 27, No. 2, 1965, p. 98, between lines 3 and 4 from bottom add
"Distribution: Marshall Is. and Caroline Is."
Vol. 27, No. 2, 1965, p. 114, line 10 from bottom; p. 115, line 15 from
top; p. 116, line 7 from bottom; p. 117, line 17 from top and line 3 from
bottom; p. 118, line 14 from bottom; p. 119, line 12 from bottom; p. 121,
lines 8 and 11 from top; p. 122, lines 5 and 8 from top, for "ocellus" read
"eye".

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