

# *Etizenia*

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TWO NEW SUBSPECIES OF *BEMBEVINUS ANTHRACINUS*  
(HANDLIRSCH, 1892) FROM THE OGASAWARA ISLANDS  
(HYM., SPHECIDAE, NYSSONINAE)

BY K. TSUNEKI

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**TWO NEW SUBSPECIES OF *BEMBECINUS ANTHRACINUS***  
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(Biological Laboratory, Fukui University)

Recently I received from Dr. T. Nakane, head of the Entomology Division of the National Science Museum in Tokyo, a considerable number of specimens of *Bembecinus* collected by himself and by Mr. T. Sato on the Islands of Chichidzima, Hahadzima and Mukodzima of the Ogasawara (or Bonin) Islands. Having investigated the material it was made out that they belonged to *B. anthracinus* Handlirsch known from New Guinea and the Island of Timor, as was formerly reported by Sonan (1939), but were slightly different from it in some characters. Moreover, it was also clarified that the population of the Island of Mukodzima was different from that of Chichidzima and Hahadzima in that they were more brightly maculated on the head and the legs. In the present paper I dealt with them as representing respectively a different geographical race of *B. anthracinus*.

I express my sincere thanks to Dr. T. Nakane for his kindness.

*BEMBECINUS ANTHRACINUS* (HANDLIRSCH, 1892)

*Stizus anthracinus* Handlirsch, Sitz. Akad. Wiss. Wien, Mathem.-naturw. Cl., 101 (1): 54, 1892 (1 ♀, Neu Guinea).

*Stizus anthracinus*: Handlirsch, Ibid., 104 (1): 979, 1895 (1 ♀, Timor).

*Stizus anthracinus*: Sonan, Kontyu, 8 (1): 41, 1934 (4 ♂♂, Ogasawara Islands).

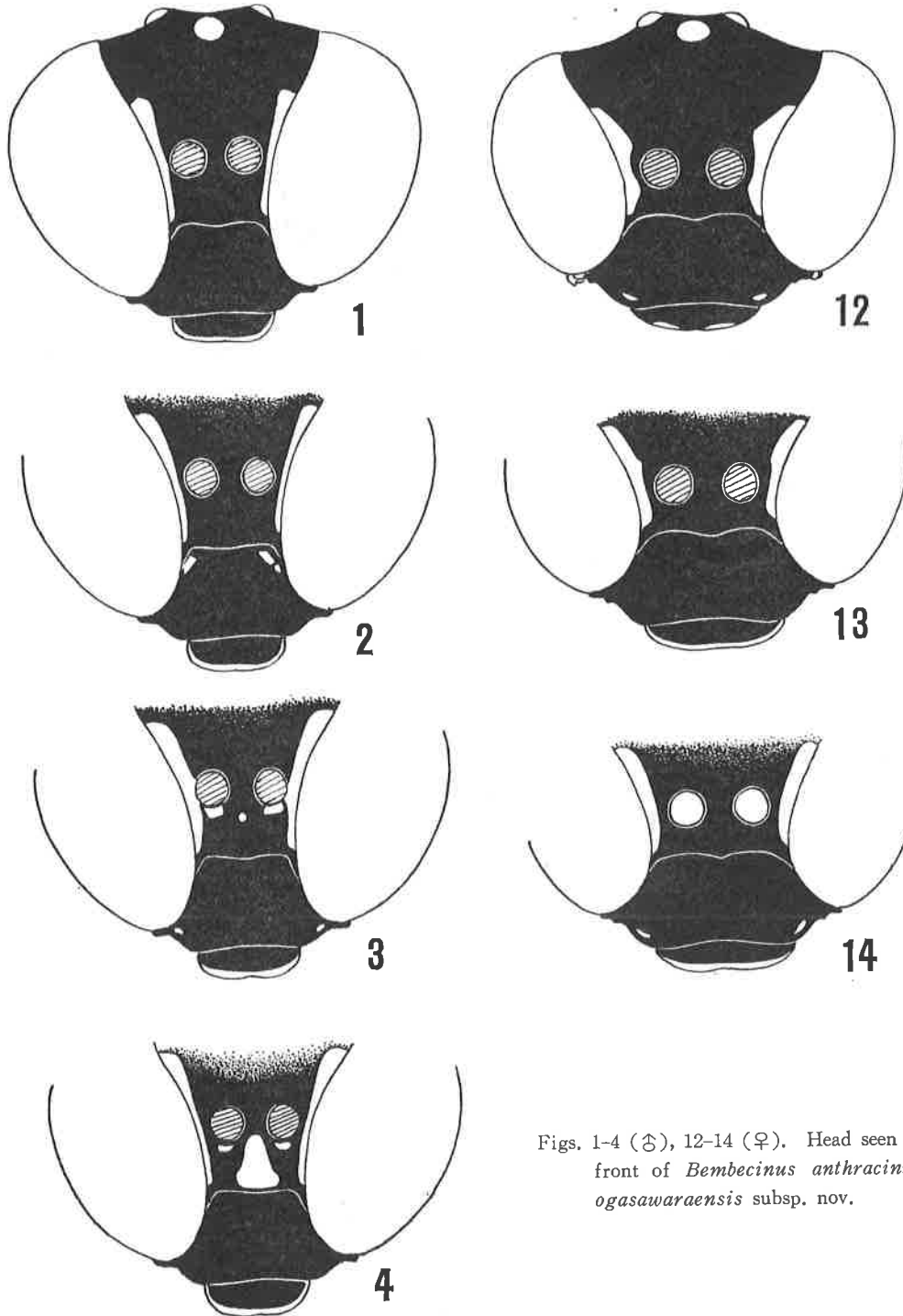
The specimens from the Ogasawara (or Bonin) Islands are smaller (8-10 mm, the type 13 mm), with hairs covering the body more abundant and with the postero-lateral incision of the propodeum in the lateral view less deep (as far as the original description goes).

**1. Subspecies *ogasawaraensis* subsp. nov.**

The inhabitants of the Islands of Chichidzima and Hahadzima belong to this subspecies. They are markedly melanic on the anterior aspect of the head as compared with those of the Island of Mukodzima. Since the original and the Sonan's descriptions are too brief the characters of the Ogasawara specimens will be given in detail.

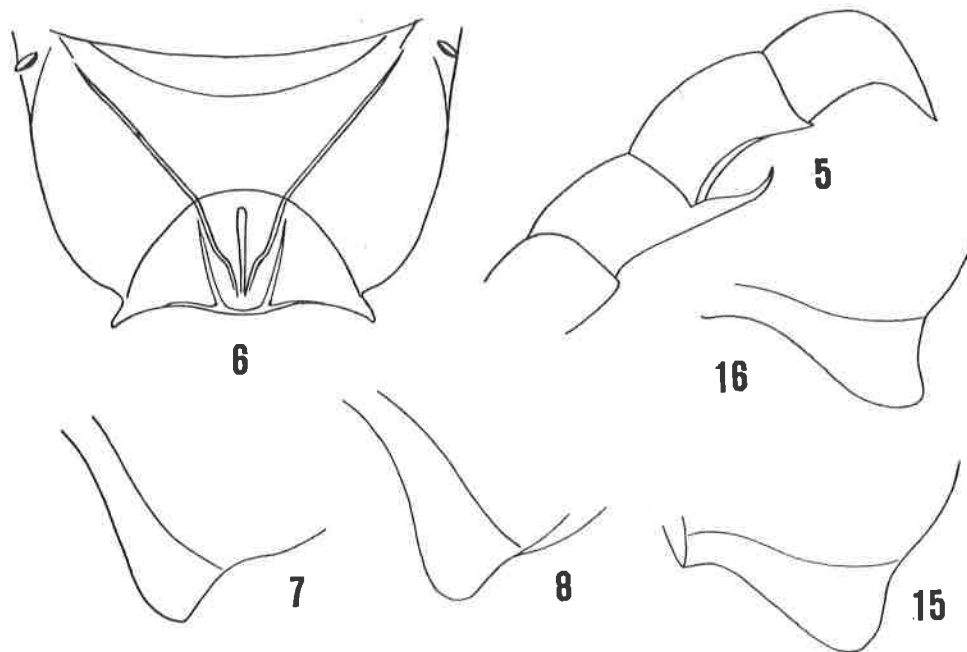
♂. Length 8-10 (mostly 9-10) mm. Black; on head inner orbits of eyes and anterior margin of labrum both narrowly yellow (Fig. 1), rarely with a few small maculae (Figs. 2, 3 and 4, 4 the brightest), antennal joint 1 in front and 2 beneath yellow, flagellum beneath pale brownish yellow, apically more strongly brownish, sometimes on joints 10 and 11 dark brown. Tegula of wing with one yellow or brownish yellow or brownish spot (sometimes completely lacking), also at the base of fore wing; rest of the thorax and abdomen without yellowish (or brownish) maculation, only in one specimen a vague brownish yellow marking, nearly as large as tegula, on each side of tergite 1 present; labium and palpi except basal portion ferruginous, caudal spines varied in colour from darkest brown to ferruginous, tergite 8 apically ferruginous. Yellow on legs: A spot at apex of fore and middle femora, tibiae and metatarsi both in front

\* Contribution No. 136, from the Biological Laboratory, Fukui University, Japan.

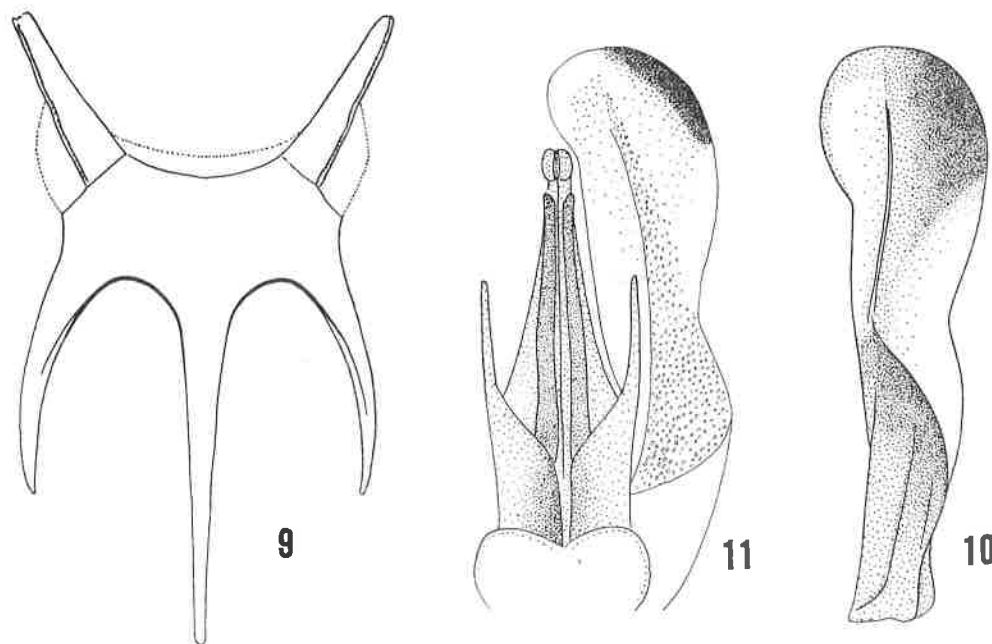


Figs. 1-4 (♂), 12-14 (♀). Head seen in front of *Bembecinus anthracinus ogasawaraensis* subsp. nov.

of fore and middle legs, in nearly a half of the specimens the mark on middle tibiae more or less broadly interrupted in middle, and that of the following metatarsi completely lacking; fore tarsi (especially the spical joints) fairly broadly ferruginous, middle and hind tarsi beneath



Figs. 5-8 (♂), 15-16 (♀). *Bembecinus anthracinus ogasawaraensis* subsp. nov.  
 5, apical 3 joints of antenna. 6, propodeum. 7-8 and 15-16, postero-lateral protuberance of propodeum seen vertically from the side.



Figs. 9-11 (♂). *B. a. ogasawaraensis* subsp. nov.  
 9, caudal spines. 10, left paramere of the genitalia (dorsal view). 11, paramere, volsella and penis (ventral view).

with more or less ferruginous marks. Tibial spurs yellowish white. Wings hyaline, veins black to dark brown.

Head in front: Fig. 1, interocular distance at anterior margin of postocelli (A) and at base of clypeus (B) and length of clypeus in middle (C), together with the ratio between them are as given in Table 1. OOD : POD  $\div$  6 : 7, antennal joint 3 nearly 2.7 times as long as wide at apex, apical three joints: Fig. 5. Structure of thorax normal (as in *B. hungaricus* provided with a short mesopleural ridge on its upper posterior portion); propodeum seen from above with lateral margins markedly roundly convergent posteriorly (Fig. 6, in *hungaricus* nearly parallel-sided), lateral margin bluntly ridged, not acutely so as in some species, posterolateral lamellate protuberances seen from above: Fig. 6, seen vertically from the side: Figs. 7 and 8, posterior incision shallow, rounded (variation very slight); caudal spines: Fig. 9 (variation very slight, median spine sometimes slightly roundly enlarged at apex). Of the genital organs paramere: Fig. 10 (dorsal view) and 11 (ventral view), outer apical portion strongly darkened as shown in the figures; penis and volsella: Fig. 11, also much more infuscated than in *B. h. japonicus* and the apical elongation of the cuspis somewhat longer than in this. Fore metatarsus nearly parallel, only slightly less than thrice as long as wide, with usually 5 spines on outer margin (2 of which at apex, sometimes one of these variously reduced), all less than as long as the width of the segment. Fore wings with cubital cell 2 triangular (variation very slight, sometimes very shortly, almost indistinctly petiolate, sometimes very narrowly, almost indistinctly opened on the radial vein).

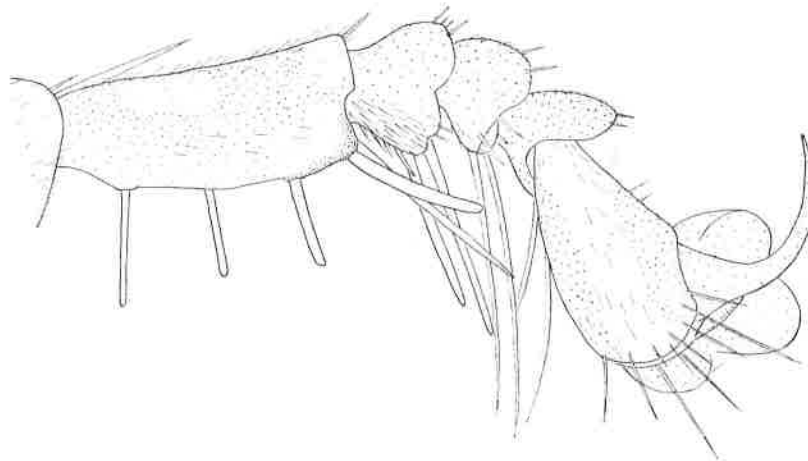
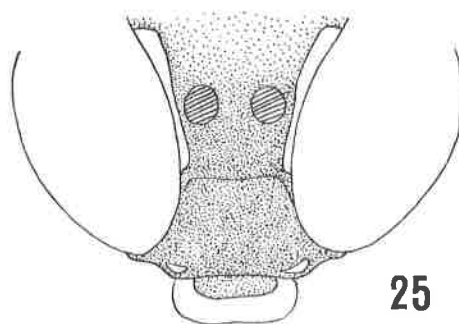
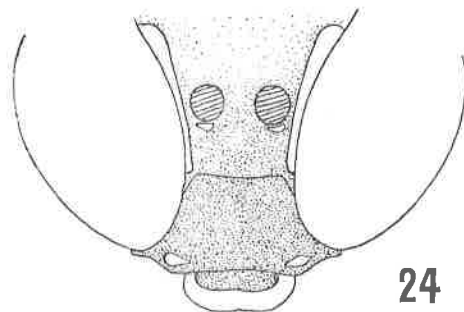
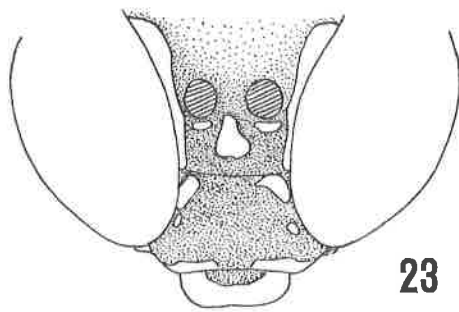
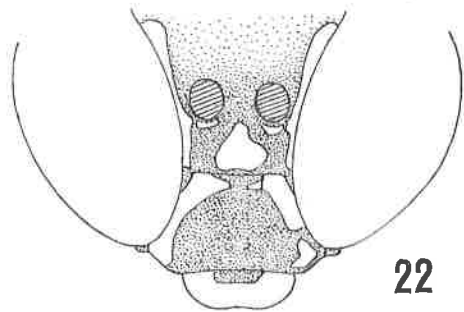
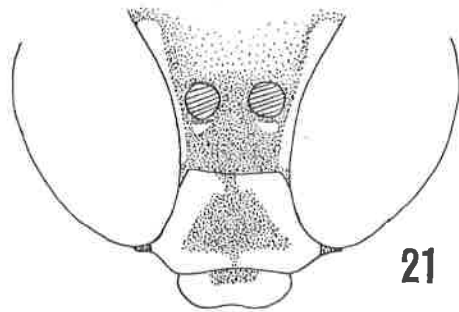
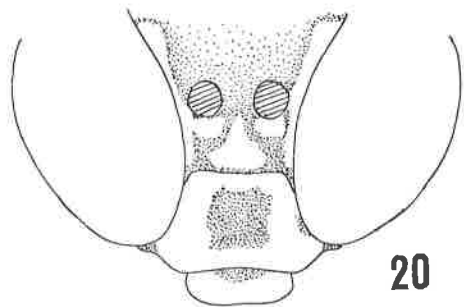
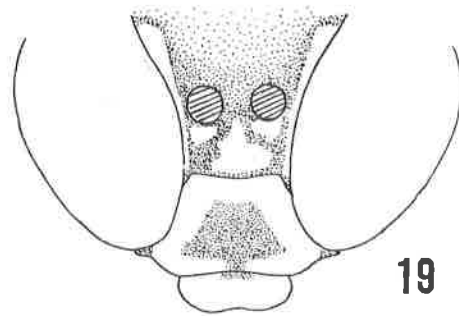
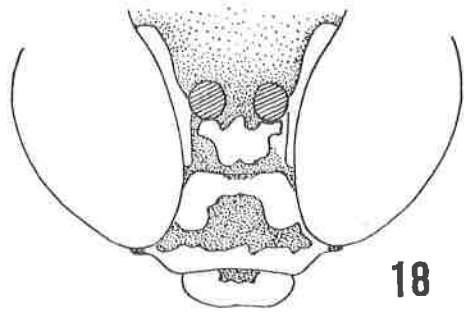


Fig. 17. Fore tarsal joints of *B. a. ogasawaraensis* subsp. nov., ♀.

Punctuation and pilosity similar to those of *B. h. japonicus* but on mesonotum and abdomen slightly finer and closer; punctures on area dorsalis on propodeum medium-sized (somewhat larger than those on upper frons), uniform in size and distribution, fairly close, except the usual impunctate narrow zone at the extreme base.

♀. Similar to ♂ except the sexual characters. Head seen in front: Fig. 12, usually clypeus wholly black (Fig. 13), sometimes with small maculae on latero-apical corners (Figs. 12 and 14), labrum with apical margin narrowly yellow. Antennae coloured as in ♂, but beneath more broadly and wholly yellow, joint 3 slightly thickened apically, 2.7 times as long as wide at apex, joint 9 nearly as long as wide. Tegula broadly brownish, sometimes with a vague yellowish spot; rest of thorax and abdomen wholly black. Anterior or outer margin of tibiae and tarsi of fore legs yellow, middle legs usually wholly black, only in one specimen tibiae and



Figs. 18-25. *B. anthracinus mukodzimaensis* subsp. nov., ♂.  
Head seen in front, showing the variation in maculation.

metatarsi with a narrow yellowish stripe on anterior margin; apical joints in part and other tarsal joints beneath with brownish spots. Apical spurs of tarsi yellowish white.

Propodeum from above as in ♂, roundly convergent posteriorly (Fig. 6), postero-lateral protuberances also similar (Figs. 15 and 16), brownish in colour; sternite 6 medianly longitudinally, fairly distinctly, but not acutely carinated. Tarsal joints of fore leg: Fig. 17.

Punctuation and pilosity as in ♂.

Holotype: ♂, Chichidzima (Fukuro-sawa), the Ogasawara Islands, 19. VIII. 1968, T. Nakane leg. (Coll. Nat. Sci. Mus. Tokyo).

Paratypes: 8 ♂♂, the same place and time as the holotype; 1 ♂ 5 ♀♀, Hahadzima Island, the Ogasawaras, 12. VII. 1969, T. Sato leg.

Remarks. In the original and the Sonan's descriptions no mention was made as to the form of the propodeum and fore legs and Sonan who examined the male of this species first did not observe the genital organs. Judging from the remote isolation between the type locality and the Ogasawaras the present subspecies may differ from *B. anthracinus* at the specific rank.

## 2. Subspecies *mukodzimaensis* subsp. nov.

Almost no structural (including the male genitalia) difference can be found between the

Table 1. Relative length of interocular distance at vertex (A), at base of clypeus (B) and length of clypeus in middle (C).

Locality	No.	Sex	A	B	C	A/B	B/C
Chichidzima	1	♂	43	18	16	2.39	1.13
"	2	♂	46	20	17.5	2.30	1.14
"	3	♂	41	16	15.5	2.56	1.03
"	4	♂	47	19.5	17	2.41	1.15
"	5	♂	44	18	16	2.44	1.13
"	6	♂	44	18	17	2.44	1.06
"	7	♂	46	19	17	2.42	1.12
"	8	♂	45	18	17	2.50	1.06
"	9	♂	46	18	17	2.56	1.06
Hahadzima	10	♀	45	22	15	2.20	1.47
"	11	♀	50	25	16.5	2.00	1.52
"	12	♀	49	24	17	2.04	1.41
"	13	♀	49	24	16	2.04	1.50
"	14	♀	49	25	17	1.96	1.47
"	15	♂	47	19.5	17	2.41	1.15
Mukodzima	16	♂	42	17	16	2.47	1.06
"	17	♂	43	17	16	2.53	1.06
"	18	♂	43	18	16	2.39	1.13
"	19	♂	43	18	15	2.39	1.20
"	20	♂	44	18	16	2.44	1.13
"	21	♂	45	18	16	2.50	1.13
"	22	♂	43	18	15	2.39	1.20
"	23	♂	44	17	16	2.59	1.06
"	24	♂	43	17	16	2.53	1.06

Average. Chichidzima-Hahadzima population:  
A/B... ♂, 2.44; ♀, 2.01. B/C... ♂, 1.10; ♀, 1.47.  
Mukodzima population:  
A/B... ♂, 2.46; B/C... ♂, 1.08.

on the tegulae in all the specimens but one present, sometimes considerably large.

Fore and middle legs with tibiae and all tarsal joints broadly yellow maculated in front; there was no exception to this rule. Yellow spot at the apex of femora always present in fore legs, but only sometimes so in middle legs. Hind tibiae always with a short yellow stripe at base on outer side, sometimes hind tarsi also yellow in front. Tibial spurs all yellowish white.

Chichidzima-Hahadzima population and the Mukodzima population. But in the latter the head and the legs are much more brightly maculated and, further, the body length is, on an average, somewhat smaller. It seems clear, therefore, that the Mukodzima population represents another geographical race.

♂. Length 8-9 mm (mostly 8.5 mm or so). Maculation on supra-clypeal area, clypeus and labrum as given in Figs. 18-25 (one other specimen as in Fig. 23). Figs. 24 and 25 were the darkest-coloured forms, but even with them the anterior margin of the labrum was much more broadly yellow and the clypeus and below base of antennae (Fig. 24) with yellow spots. However, no specimen carried yellowish spots on the abdomen. Yellow marking

But the antennal flagellum beneath only rarely wholly yellow, most usually apically brown or dark brownish, sometimes yellow on basal portion restricted to the end of each segment.

♀. Unknown.

Holotype: ♂, Mukodzima Island, the Ogasawaras, 20. VII. 1969, T. Nakane leg. (Coll. Nat. Sci. Mus. Tokyo).

Paratypes: 8 ♂♂, the same place and the time as the holotype.

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