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C O N T E N T S

K. Tsuneki:

The Pompilidae of the Ryukyus (Hymenoptera) 1

Taxonomic notes on the Japanese species of  
Auplopus (Hymenoptera: Pompilidae) ..... 66

o Descriptions of two new subgenera, six new  
species and one undescribed female of the  
Sphecidae from the Island of Okinawa, the  
Ryukyus (Hymenoptera) ..... 81

l A new generic status of Crabro nitobei Ma-  
tsumura, 1912, with the review of its bio-  
logy; genus Spadicocrabro gen. nov. .... 100

l A new species of Passaloecus from Japan,  
with its biology (Hym., Sphecidae, Pem-  
phredoninae) ..... 102

DESCRIPTIONS OF TWO NEW SUBGENERA,  
SIX NEW SPECIES AND  
ONE UNRECORDED FEMALE OF  
THE SPHECIDAE FROM THE ISLAND OF  
OKINAWA, THE RYUKYUS  
(HYMENOPTERA)

By K. TSUNEKI

Recently Messrs Y. Haneda and T. Murota, members of the Japan Hymenopterists' Association, made respectively a wasp collecting trip to the Island of Okinawa, the Ryukyus, and got a large number of the specimens of the Sphecid wasps. Especially Mr. Murota entered the northern montanic district where not only the insect-, but also animal fauna is not as yet fully been investigated - only of recent a new species of the bird belonging to the Family Rallidae was discovered - and collected many curious Crabronids by searching for their nesting sites, mainly the decayed fallen trees. The specimens sent me from them for study were only sampled ones that they could not identify with any species known from the Palaearctic Region, the Ryukyus and Taiwan. So I cautiously investigated them and could confirm that, as they expected, all of them were hitherto unrecorded species.

It is my pleasure to recompense them for their kindness by publishing the results of my study on these interesting specimens that they obtained under various difficult conditions.

I. PEMPHREDONINAE

PSENLUS OKINAWANUS SP. NOV.

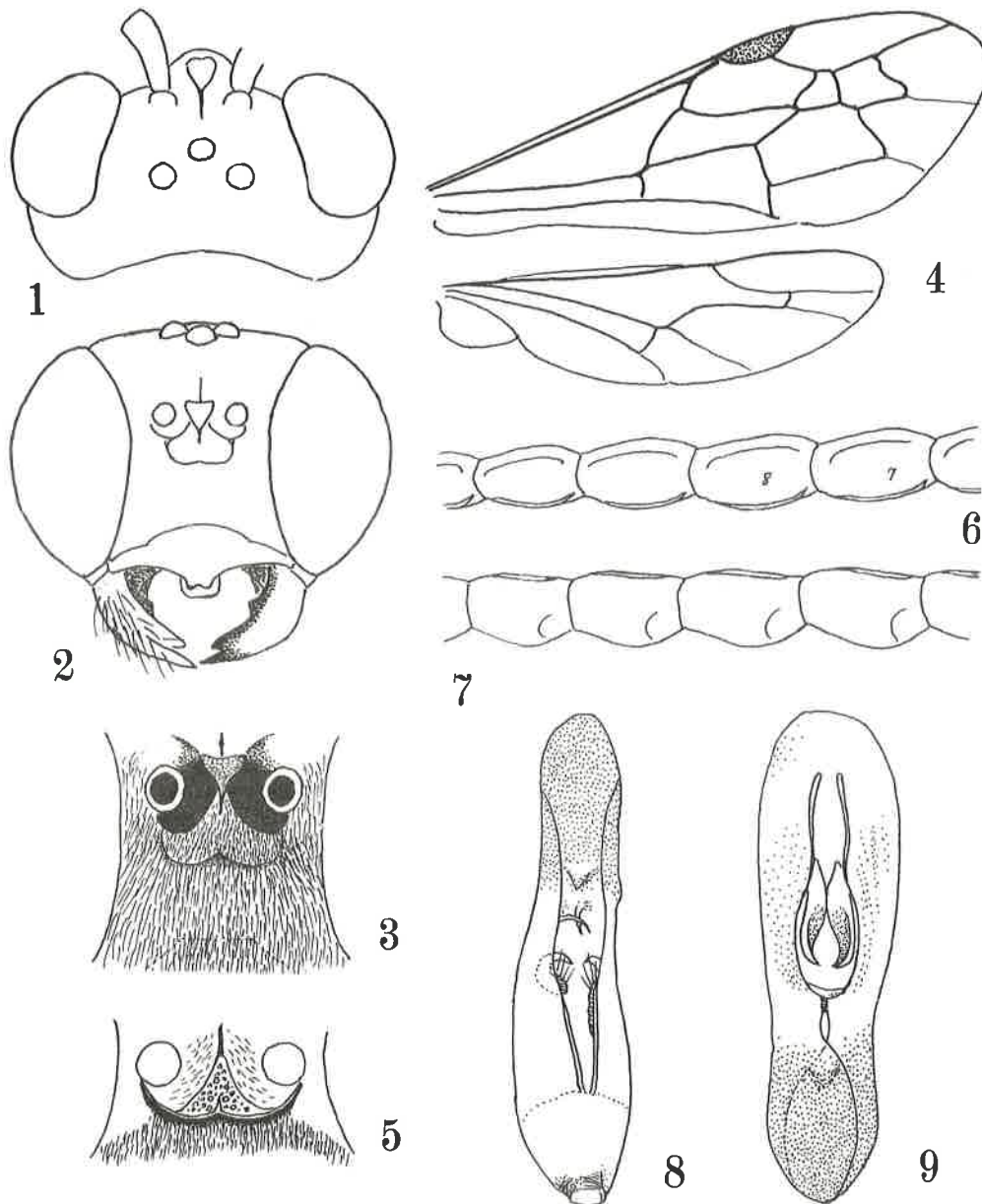
The present species is characteristic in that in ♀ gaster, except petiole, completely red (strictly pale brownish orange) and interantennal carina well developed into concave lobiform, while in ♂ gaster wholly black and interantennal carina not enlarged into lobiform.

The present species closely resembles *P. chillootti* van Lith, known from Nepal, but differs from it: in ♀ gastral petiol black, hind leg more broadly darkened, A3 plainly more than twice as long as broad at apex, A8-11 not shorter than broad, scutum more regularly, evenly punctured, scutellum and metanotum fairly closely covered with piliferous punctures and propodeum without crenate furrow between dorsum and side and in ♂ gaster completely and legs much more broadly black and antennal tyloidea and interantennal carina quite different in structure.

♀. Length 11.5 mm. Black, pale lemon yellow are mandible except inner margin, A1 in front, greater part of palpi, humeral tubercles, fore leg from apex of coxa to T1 (inner side slightly brownish), mid leg similar, but except brownish apical half of outer side of tibia and outer side of T1 and hind leg at extreme apex of coxa, trochanter, baso-ventral part of femur, basal 3/4 of underside of tibia and tibial spurs; gaster except black petiole wholly red, but posteriorly slightly brownish; antenna from A4 apically beneath reddish brown, gradually widened and clearer towards apex; rest of fore and mid tarsi and mid tibia pale brown and rest of hind femur, tibia and whole of tarsus slightly brownish black. Wings hyaline, very slightly fuscous apically, stigma and veins dark brown. Appressed and erect haired areas as usual and the hair silvery, but on hind tarsus somewhat golden.

Head from above: Fig. 1, with VW=29, W of occipital carina =32, ocelli equal, comparatively large, in a triangle slightly lower than equilateral, ocellar area not particularly raised, but each ocellus slightly inclined outwards or forwards, with a narrow, deep, arcuate depression outside each, OOD:Od:POD:OCD=9:4:5:7; head in frontal view: Fig. 2, with median L=35, IOD at tops of eyes (=VW), at antennal bases and at lower ends of eyes =29 =29,20,29, interantennal elevation incrassate to subtriangular,

rounded swelling below antennal bases, with a fine, shining carina in middle which is extended upwards and broadly enlarged into a concave lobiform appendage above the antennal bases (Fig. 3) and steeply inclined to frons where the surface is markedly depressed, thence frontal median carina arises and runs through the depression to the hollow in front of anterior ocellus; clypeus with disc gently roundly elevated and at medio-apical produced margin distinctly bidentate, distance between tops of the teeth as wide as interantennal lobiform appendage; labrum subquadrate, slightly wider than toothed area of clypeus and weakly emarginate at apex; L of A1,2,3,4,5,8,11,12=11,4,12,8,7,6,5.5,9, from A2 till A10 gradually thickened and thence attenuate, A1-8 each narrowed at base and  $A3/aW=3$ ,  $A10/aW=1$  and  $A12/bW=1.8$ ; pronotum with antero lateral corners rounded, but propleuron above fore coxa triangularly pointed; scutum 6-sulcate,



namely, basal part of admedian lines till anterior  $1/4$ , notauli on anterior  $4/5$  and parapsidal sutures on posterior  $3/5$ , the former two weakly crenulate and the last at about middle with a distinct puncture, pararegular area markedly raised into a ridge, with its inside deeply impressed into a crenate furrow which is broader posteriorly, ending in a deep hollow at postero-lateral corner of scutum; scutellum feebly furrowed in middle, metanotum with a median impressed line which is anteriorly weak, but at apex enlarged and deepened into a triangular excavation; enclosed area of propodeum short, with about 12 longitudinal carinae, central one of which bifid at apex, forming the triangular top of median furrow which deeply runs on the disc of the segment till medio-apical semicircular area, but posteriorly frequently crossed by rugosed carinae, as if to be crenate; surface of the disc just behind enclosed area smooth and shining, but thence posteriorly on both sides of medial furrow obliquely, finely and closely striate, striae posteriorly gradually coarser, stronger and rugosed, and finally turning to arcuate, with their outer portions directing obliquely forwards; medio-apical semicircular area enclosed with a carina, with few, short, longitudinal carinae within, but medio-apical end occupied by a small, rounded, flattened, smooth and glittering plate; GT6 with peculiar pygidial area: elongate triangular area, with surface flat and dull, margined on both sides with feeble carinae and at base closely covered with 4-5 strong punctures; GS2 at base deeply impressed, flattened, but the area not distinctly outlined, basal triangular appendage unobserved. Wings: Fig. 4.

Vertex finely, weakly punctulate, with surface well shining, but on ocellar area punctures strong and close, posterior inclination above occipital carina on upper portion transversely, fairly closely punctate-striate, but posteriorly punctures lacking and weak, rugosed striae alone defined, punctures on frons anteriorly closer and somewhat stronger, clypeus and supraalveolar area closely covered with piliferous, somewhat strong punctures. pronotum in front of the ridge on top transversely, finely punctate-striate, with border line to cervical area distinctly crenate, crenae laterally elongate and stronger and at propleuron above triangular projection turning to long, arcuate, strong striae; further, behind the projection a coarsely crenate, oblique groove observed; scutum, scutellum and median part of metanotum generally more strongly punctured than on frons, punctures fairly close, partly confluent and mixed irregularly with minute points; mesopleuron puncturation generally similar to that of scutum, but on episternum punctures much finer and closer and on posterior portion, as on metapleuron, punctures lacking, with surface well shining, though on metapleuron short and weak rugulae scattered; episternal furrow strongly crenate; side of propodeum dorso-posteriorly finely and closely striate, but anteriorly and ventrally striae weaker, with surface gradually shining as on metapleuron. GTs finely, fairly closely punctulate, but on each posterior marginal area punctules much sparser.

Lower frons, interantennal elevation, clypeus and temples closely covered with moderately long, appressed, silvery pubescence, on labrum and apical part of mandible pubescence slightly yellowish, on lower frons on each side of medial carina pubescence drawing outward spirals; vertex till occipital carina with somewhat sparse, but longer, erect, whitish hairs. Pronotum behind transverse ridge densely covered with a row of posteriorly directed silvery pubescence, scutum closely clothed with very short, appressed, silvery pubescence, but together with this, also with erect, long, somewhat sparse, whitish hairs as on vertex that are at posterior margin curved laterally, half appressed and silverily shining; on scutellum the hairs longer and those on posterior half somewhat reversely inclined forwards; on median part of metanotum at each half the long, silvery hairs much closer, half appressed and inclined latero-posteriorly; on propodeum, except basal enclosed area which is hairless, the hairs long and close, silverily glittering and directed postero-laterally, but on the sides the hairs shorter, sparser, rather inconspicuous; on mesopleuron the hairs erected, long but sparse, fine and whitish, while on epimeral area and metapleuron the hairs lacking; fore coxa in front and mesosternum densely clothed with short, silvery pubescence; the hairs of gastral petiole on sides and beneath long, erect, sparse and silvery, but on dorsal part at base shorter and sparser and on broad posterior portion lacking; rest of gaster more sparsely covered with much shorter, silvery pubescence.

♂. Length about 8 mm. Black, without red on gaster; lemon yellow are basal half of mandible, palpi, apices of fore and mid femora, fore tibia except outer elongate, pale brownish area, Fore T1-4, mid T1 except dorsal apex and T2-3 beneath; A1,3,4,5 beneath slightly brownish yellow; apices of fore and mid trochanters, base and basal half beneath of mid tibia, fore T5, from apex of mid T1 apically above and hind tibial spurs pale brown; wings similar to ♀ in colour and venation.

Head from above similar in form to ♀, but ocelli in a nearly right-angled triangle and slightly smaller, though equal to each other, OOD:Od:POD:OCD=8:3:7:7; head in frontal view with inner orbital lines also similar to those of ♀; marked difference

lies in the structure of interantennal elevation; median carina simple above, not enlarged into a lobiform appendage, roundly curved in lateral view, acutely inclined above and connected with the fine median carina of frons which runs to depression in front of fore ocellus, while the main body of the elevation triangularly flattened above, with a short carina in middle below, which is divided at lower end into acute, curved ridges and each runs along lower margin of the elevation and finally reaches outer side of antennal socket rim lowering (Fig. 5); clypeus with medio-apical bidentate structure similar, but distance between the tops of the teeth comparatively wider; mandible also similar in structure, but the tooth on inner margin much less developed, only bluntly produced; antennal flagellum from above moniliform, each segment slightly elongate elliptic, nearly flattened above, with its posterior (or outer) margin carinated to tyloidae (Fig. 6), from in profile crenulate, A3 weakly rounded down, from A4 apically gradually more strongly swollen out beneath till A12 (Fig. 7), A13 on basal half weakly swollen down, but apically parallel-sided and minutely rounded at apex; A1 slightly longer than its maximum width, L of A1,2,3,4,5,8,12,13=9,2,12,11,10,9.5,9.5,11.5; pronotum similar in structure to ♀, scutum with notauli from about middle posteriorly obscure and parapsidal sutures medianly interrupted; scutellum, metanotum and propodeum similar in general structure to ♀, but in enclosed area of propodeum median minute pentagon at top of median furrow, formed of short carinae, lacking; petiole also similar; GS2 with basal depression deeper, with a longitudinal carina at on each side, but the depression gradually shallowed posteriorly, ending without distinct outline, while baso-medial, small, shining, triangular projection arising from basal transverse ridge of GS2 distinct; in fore leg T5 slightly longer than T3+4, in mid leg as long as T3+4 and in hind leg slightly longer than T3 which is much longer than T4. Genitalia seen obliquely from beneath: Fig. 8, from above: Fig. 9.

In punctation and vestiture on head and thorax generally similar to ♀; but sculpture on propodeum considerably different: dorso-basal part behind enclosed area on each side of medial furrow smooth and polished, but posteriorly first obliquely, weakly rugoso-striate and then greater part of the surface very coarsely, irregularly reticulate, the reticulation extended to postero-dorsal parts of the sides; gaster minutely and sparsely punctulate with piliferous points, but the points laterally stronger, closer and setigerous and the pattern further stronger posteriorly.

Holotype: ♀, Is. Okinawa Proper, Mt. Ochoa, 24.IV.1987, Y.Haneda.

Paratype: 1 ♂, same as holotype.

Remarks. The collector of the specimens informed me that he collected a fair number of the specimens of both sexes together with the types above described and there is no doubt as to their sex association.

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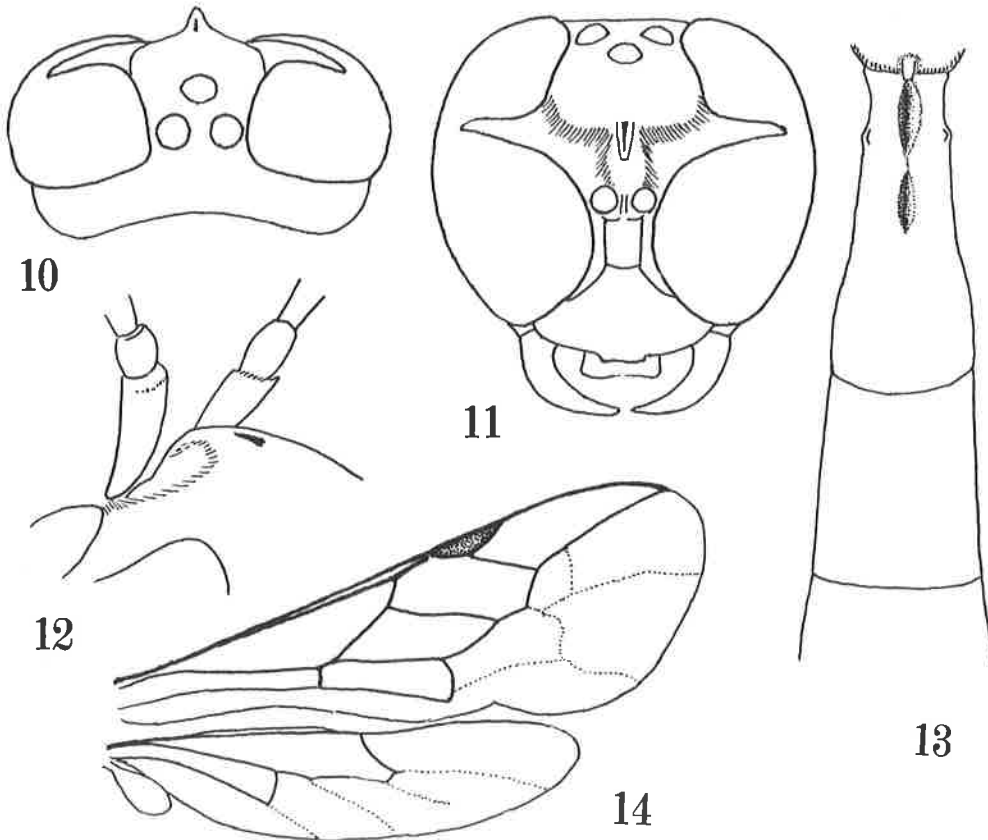
II. LARRINAE

TRYPOXYLON RUFIVENTRE SP. NOV.

♀. Length 11-12 mm. In general colouration similar to ishigakiense, but differs in the form of G1. This species belongs to the group having clavate gastral petiole and high, slender, nasiform interantennal elevation, and characteristic in having the largely red gaster and broadly pale yellowish fore and mid legs.

Black; yellowish white are A1 in front, mandible on outer side broadly, palpi, posterior half of pronotal tubercle, a spot on translucent tegula, all coxae at apex, all trochanters, fore and mid femora and tibiae except above or outer side (brownish), fore tarsus largely (each segment apically above pale brownish) except pulvillus, mid T1 at base, T2-5 at apex and claws, hind T1 narrowly at base and T3-5 narrowly at apex and claws; clypeus with apical margin and apical part of disc narrowly brown; gaster yellowish red, except G1 and scattered, obscure, dark marks on GT2,3,4 and 5.

Head from above: Fig. 10, with VW=13, median L till top of interantennal elevation 28, ocell large, equal, in an equilateral triangle, OOD:Od:POD:OCD=1:5:2:9; head from in front: Fig. 11, with IOD at eye emarginations, at base of clypeus and at lower ends of eyes =39:7:25; supraantennal elevation high nasiform and from middle above finely furrowed in middle, seen obliquely from left side and above: Fig. 12, the furrow connected above with shallow median groove of frons that not reaches fore ocellus; the elevation below very acutely inclined to supraclypeal area, also including a fine



furrow within; eye emargination narrow, elongate triangular, with dorsal margin sinuate; clypeus with apical marginal rim medianly broadly, roundly produced a little and at its apex in middle with a weak minute incision; mandible simple; L of A1,2,3,4,5,8,11,12=9, 4,10,7,6,5,4,9, A3/aW=4, A12/bW=2.3. Pronotum with posterior marginal area discoloured, amber-yellowish and depressed, anterior margin transversely, arcuately raised and bluntly ridged, thence obliquely, nearly flatly inclined to cervical area, with the border line against nape transversely rounded seen from above, not impressed, not crenate, pronotal side without triangular process anteriorly; on scutum admedian lines in shining, raised lines, reaching about 2/5 of the scutum, slightly diverging posteriorly, notauli vaguely impressed for a short distance, while parapsidal sutures in smooth, raised lines and at about median third well defined, slightly curved and slightly divergent forwards, scutellum medianly with a short, weak furrow; enclosed area of propodeum semioval in form, with bW : median L =18:20, with marginal groove fine, clearly outlined and sparsely foveolate, medial furrow of the disc broad, at base inverted-triangularly enlarged, shallow and nowhere clearly outlined, with V-shaped striae within, but posteriorly gradually deeper and narrower, with inside striae turning transverse and much closer, but at posterior fourth again the furrow becomes shallower, in dorsal view it is wedge-shaped and at deep part V-shaped in cross section; lateral carina well defined, originating from behind spiracle, but its inside furrow shallow and indistinct; G1 (Fig. 13) with bW, aW, median L=11,19,42, W at constriction behind basal condile 9, the segment at about apical 2/5 gently, roundly swollen up and at basal 1/3 medianly deeply excavated in reversed wedge-shape; L:W of fore, mid and hind femora =27:10,31:10,37:11, fore femur arcuate behind, flattened in front and above, hind femur flattened beneath. Wings: Fig. 14.

Frons, vertex including posterior inclination till occipital carina, dorsum of pronotum, scutum, scutellum and median part of metanotum finely, closely punctured, punctures piliferous and PIS microstriolate, surface mat; punctures on eye incision to side of antennal base, supraclypeal area and clypeus much finer and closer, with hairs dense, appressed, silvery and very marked; punctures on mesopleuron somewhat finer and sparser than those on scutum and much sparser and weaker upwards; metapleuron and anterior part of side of propodeum without puncture, surface polished, but side of propodeum posteriorly gradually strongly, obliquely rugoso-striate, with some punctures scattered between; rest of enclosed area of propodeum transversely, minutely punctulate-striate and the striae stronger and coarser towards enclosing lateral grooves; remaining parts of propodeal dorsum microreticulate, showing a tendency towards transversely microstriolate; gaster microreticulate and fairly closely clothed with very short pubescence.

In dorsal view, silvery hairs very marked on temples, posterior area of pronotum, posterior margin of pronotal tubercles, mesopleura, especially posterior parts, lateral depressed parts of metanotum and postero-lateral portions of propodeum.

♂, unknown.

Holotype: ♀, Is. of Okinawa, Mt. Katsu-u-dake, 14.VIII.1988, T.Murota.

Paratype: 1 ♀, same locality as above, 12.VIII.1987, T.Murota.

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#### III. C R A B R O N I N A E



CROSSOCERUS (ORTOCRABRO) SUBGEN. NOV.

The female of this subgenus is closely related to that of Bnunius known from Taiwan in the structure of the mandible and the propodeum, in the ocellar disposition and in the well developed propleural and mesopleural tooth, but is different therefrom in the character of G1 (not nodose at apex) and of pygidial area (not simply excavated and attenuate apically, but with clearly outlined Y-shaped excavation formed by the V-shaped elevation at base in middle); while the male (in Bnunius unknown) goes to the Subgenus Blepharipus in the present day systematics, namely, mandible edentate on inner margin and bidentate at apex, mesopleuron without distinct tooth, but with a short (rather trace of) precoxal carina.

The new subgenus as a whole (♀ ♂) is considerably close to Neoblepharipus (e.g. difference between sexes in the structure of the tooth on inner margin of mandible\* and of the precoxal tooth of mesopleuron), but differs from it in that the mandible of the female tridentate at apex and medial tooth on its inner margin only bluntly produced and pronotum (♀ ♂) not markedly constricted behind antero-lateral corners.

Subgenotype: Crossocerus (Ortocrabro) hirashimai Tsuneki, 1966.

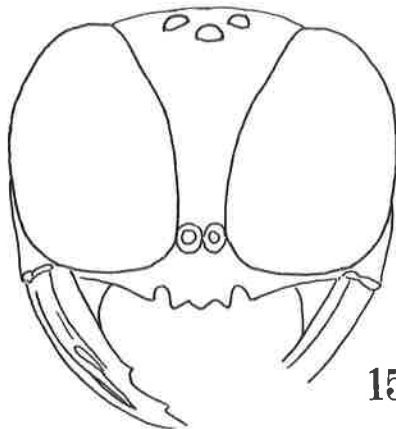
Remarks.

Crossocerus hirashimai has hitherto been known only by the male and under the modern systematics placed within the subgenus Blepharipus (Bohart and Menke: Sphecoid Wasps of the World, 1976). The newly discovered female, however, does not go to Blepharipus and at first lets me hesitate to combine them together. According to the personal communication of the collector, he captured 7 ♀ 41 ♂ of this species in the various districts of the northern montanic region of the Island of Okinawa, frequently ♀ ♂ together at the same place and time. He believes without doubt that they are the different sexes of the same species, basing not only upon their same temporal and local occurrence, but also upon their similarity in characters, except sexual, e.g. general colouration, the structure of pronotum, propodeum, G1 and wings. I finally agree with him in this belief. But the result comes to request a slight alteration in the present day systematics, namely, the subgenus of Crossocerus can not always be divided at couplet 8 of the book above cited by the presence or absence of the tooth on the inner margin of the mandible. Sometimes the case is present wherein in the female present and in the male absent\*.

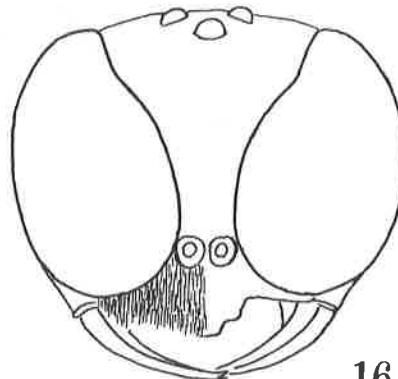
\* In the book by Bohart and Menke cited above Neoblepharipus is placed within the group having the mandible dentate on inner margin, but at least Crossocerus (Neoblepharipus) amurensis (Kohl) ♂ has the mandible edentate on inner margin. While, Leclercq at the time of erection of this subgenus says nothing about the tooth on inner margin of the mandible, although he places it under the group in which the mandible bidentate at the apex.

CROSSOCERUS (ORTOCRABRO) HIRASHIMAI TSUNEKI, 1966

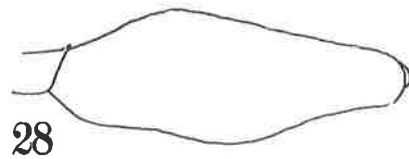
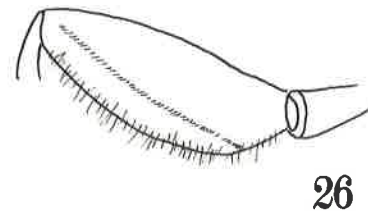
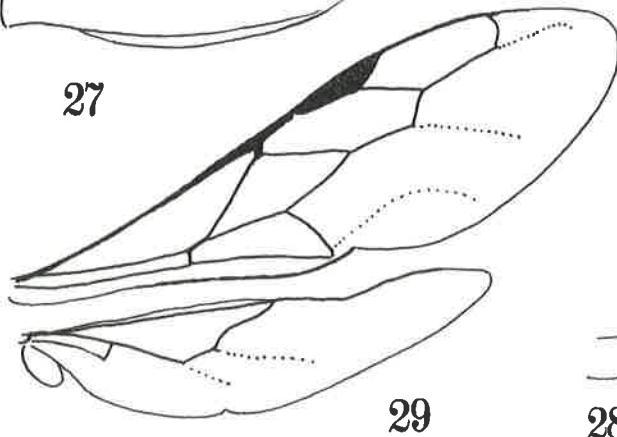
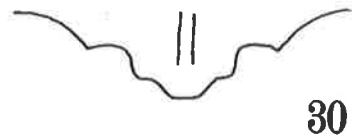
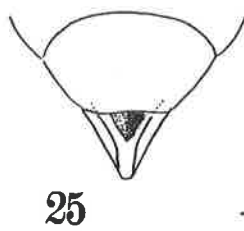
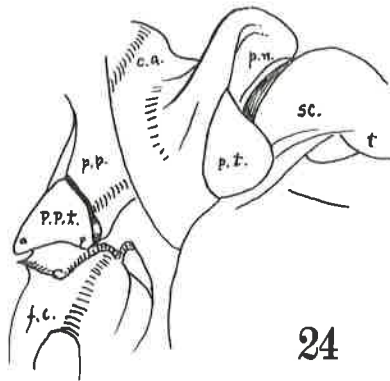
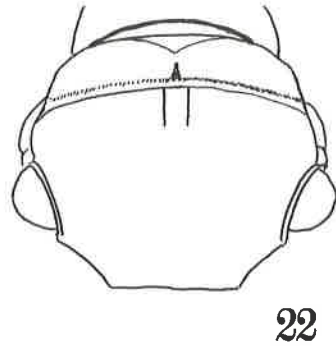
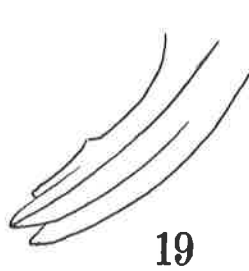
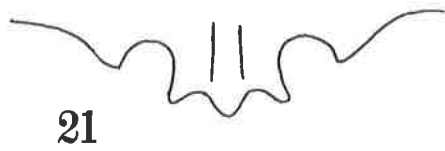
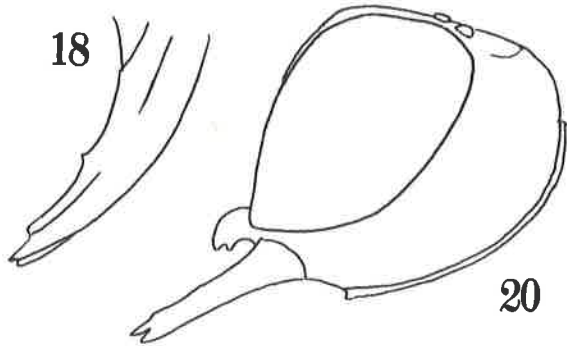
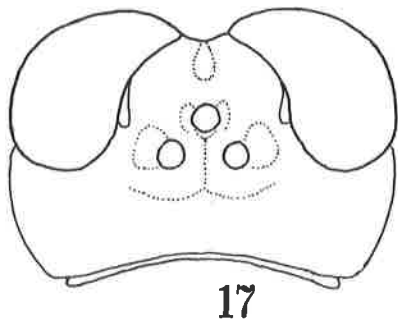
♀ (hitherto undescribed). Length 7.5 mm, fore wing 6.0 mm. Black; yellow are A1



15 ♀



16 ♂



completely, humeral tubercle, small apical patch of fore and mid femora and base on outer side of all tibiae; slightly brownish yellow are all spurs, all T1 (apically more strongly brownish) and T2 (do); T3 and 4 pale brown to brown and paler beneath; mandible under permeable light brownish; tegula translucent yellowish brown; wings hyaline, stigma and veins black.

Head from above: Fig. 17, with L in middle and at end of occipital carina 28 and 34, occipital emargination markedly deep (about 4), W at temples behind eyes slightly more than as wide as that at eyes (51:50), while W of occipital carina 30, ocellar area slightly depressed except median ridge, roundly enclosed with blunt ridge posteriorly, frontal furrow broad and fairly deep, OOD:Od:POD:OCD=6.5:4:4:13 and distance between fore and hind ocelli =2, frontal marks vaguely defined, more sparsely micropunctulate than on surrounding area and broader and more shining posteriorly, 7 in L and reaching posteriorly the level between fore and hind ocelli; head in frontal view: Fig. 15, mandible tridentate at apex, but innermost tooth small and obtuse, in frontal view: Fig. 18, slightly dorso-lateral view: Fig. 19, it has further a blunt tooth on inner margin near middle; L of A1,2,3,4,5,8,11,12=18,3,6,4,3,2.7,2.5,3, A3/aW=3, A12/bW=1.5. Head in lateral view: Fig. 20, occipital carina not reaching buccal carina, terminating abruptly at the end; clypeus: Fig. 21; pronotum: Fig. 22, with a weak incision in middle, bearing a transverse furrow and carina in front of posterior margin, anterior margin roundly curved, but antero-lateral corners bluntly produced, seen from behind: Fig. 23; supracoxal process on propleuron not simply toothed, but in a complicate structure (Fig. 24, p.p.=propleuron, p.p.t.=propleural teeth, a=anterolateral, p=posterolateral tooth, f.c.=fore-coxa, c.a.=cervical area, p.n.=pronotum, p.t.=pronotal tubercle, s.c.=scutum, t=tegula), formed of anterolateral and posterolateral teeth, with intermediate area concave triangular, and anterior and lateral teeth of dorsal plate of fore coxa make the structure more complicate; L of scutum (Fig. 22), scutellum and metanotum in middle =26,11,4; precoxal tooth of mesopleuron very long and marked; area dorsalis on propodeum wider than long, well enclosed with crenate furrow, with basal impressed line strongly crenate and medianly with a deep, oval depression, median furrow of which reaches near posterior margin of the area, posterior inclination also with broad, deep, median depression and separated from the sides by a distinct carina that is weak and feeble on dorsal half; G1 sessile, but without showing a tendency to be nodose at apex, W at extreme base, at constriction behind there and at apex, and L in middle (measured from the side) =11,9,22,28, maximum W of gaster at aW of G2 =32; pygidial area: Fig. 25, with Y-shaped impression clearly outlined; L of fore, mid and hind femora = 23,24,28, fore femur at anterior and posterior side obliquely flattened to form an acute keel beneath, dorsal side nearly flattened, thus forming an equilateral triangle in cross section, in posterior view: Fig. 26; mid femur generally similar, but from middle below not so flattened and not forming so acute a keel beneath, hind femur not so markedly swollen down beneath as in fore femur, only flattened beneath, with a ridge at posterior margin of its surface, in anterior view: Fig. 27 (right-hand one), in posterior view: Fig. 28; hind tibia with about 6 strong (but short) spines on outer side, each shooting out of the top of triangular process, apical spinules 4 in number and longer spur more than half as long as hind T1. Wings: Fig. 29.

Body densely microreticulate, epimeral area of mesopleuron partly and posterior part of the pleuron, metapleuron wholly, side of propodeum above and area dorsalis impunctate and shining.

Main characters of ♂. Similar to ♀ in general, but smaller (5-6 mm). A1 dark brown above, mid femur, except above and beneath, broadly pale brown and fore and mid T1-4 and basal half of hind T1 yellow. Head from above with temples less developed, W at there plainly less than at eyes; head seen from in front with outer margin of eyes more roundly convergent below (Fig. 16), structure of clypeus similar in pattern, but medial protuberance not so markedly tridentate: Fig. 30, medial ridge on disc also much weaker; mandible bidentate at apex, without tooth on inner margin (in Fig. 16); L of A1,2,3,4,5,8,12,13=15,2,5,4,3,2.7,2.5,4, A3/aW=2.5, A13/bW=2.0, A3-12 with weak haired carina (tyloidea) beneath. Pronotum similar, but protuberances at antero-lateral corners weaker; precoxal plate of propleuron generally similar, but apical (posterior) margin not emarginate, precoxal tooth of mesopleuron much less developed, only an inconspicuous, blunt elevation (practically lacking), but precoxal carina clear, though at base only. Gaster similar, except pygidial area. Fore femur nearly flattened above and very smoothly flattened beneath to receive tibia when folded, without basal swelling beneath, hind femur flattened beneath, but without ridge at posterior margin and hind tibia less strongly and more sparsely spined on outer side.

Specimens examined: 1 ♀ 2 ♂, Is. Okinawa (Mt. yonaha), 10,15,16.VIII.1988. T.Murota leg.

References

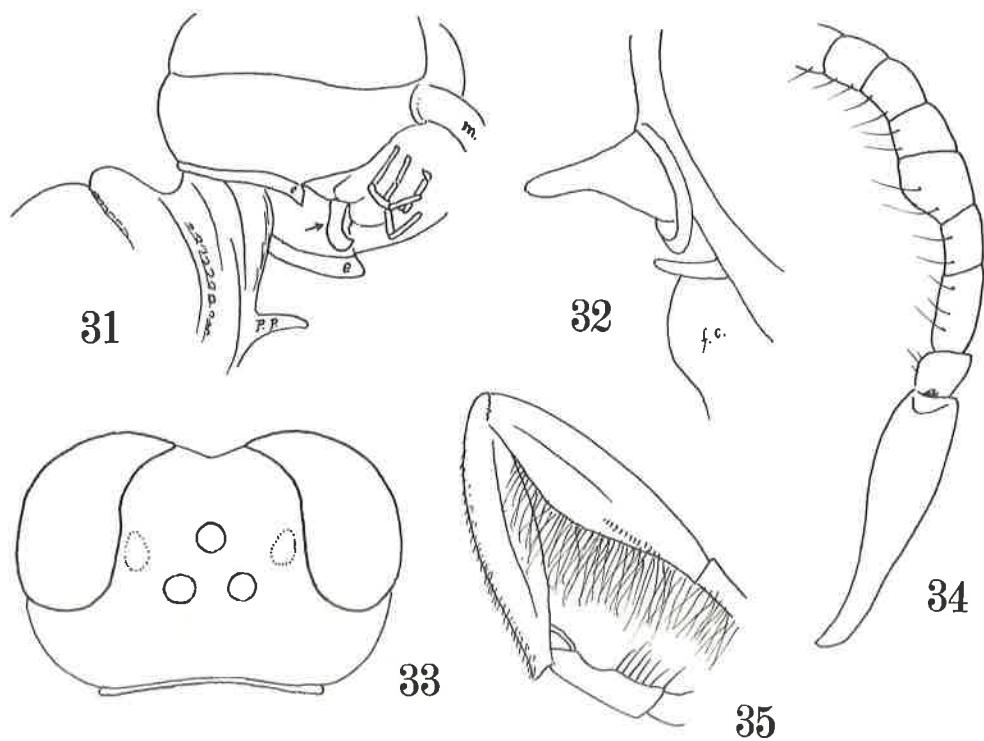
- Crossocerus (Coelocrabro) hirashimai Tsuneki, 1966. Etizenia, Fukui, 15: 5 (♂, Is. Amami-Ohshima, the Ryukyus).  
Crossocerus (Coelocrabro) hirashimai: Tsuneki, 1968. Kontyu, 36 (1): 57 (♂, same locality as above).  
Crossocerus (Blepharipus) hirashimai: Bohart and Menke, 1976. Sphecid Wasps of the World, p. 401 (Ryukyus).  
Crossocerus (Blepharipus) hirashimai: Tsuneki, 1982, SPJHA, 23: 63,73 (♂, Amami).  
Crossocerus hirashimai: Tsuneki, 1982, Hym. Comm., 14: 93 (♂, Amami).  
Murota, T. 1988. Searching for the unknown species of Crabronids in the northern montanic district of the Island of Okinawa. Araregako, Fukui, 26: 11-20 (in Jap.).

CROSSOCERUS (YAMBAL) SUBGEN. NOV.

The new subgenus is characterized in the main by the presence of a highly raised, flattened and slightly curved process beneath head between abruptly terminated ends of occipital carina (♀ ♂), seen obliquely from right side and beneath: Fig. 31 (shown with an arrow, m=mandible, p.p.=propleural tooth, e=ends of occipital carina). Some additional characters: toothed fore coxa (♀ ♂, Fig. 32), markedly long precoxal tooth of propleuron (♀ ♂, Fig. 32, also 31), longer than that of mesopleuron, clear frontal impressions (♀ ♂, Fig. 33,♂), very large facets of eye at frontal under half, sparsely haired and on A5 roundly swollen antennal flagellum beneath (♂, Fig. 34), long haired fore trochanter and femur beneath (♂, Fig. 35) and GS2 (♂). Otherwise as in Crossocerus (Neoblepharipus), except pronotal structure and lack of tibial spur on mid leg (♂).

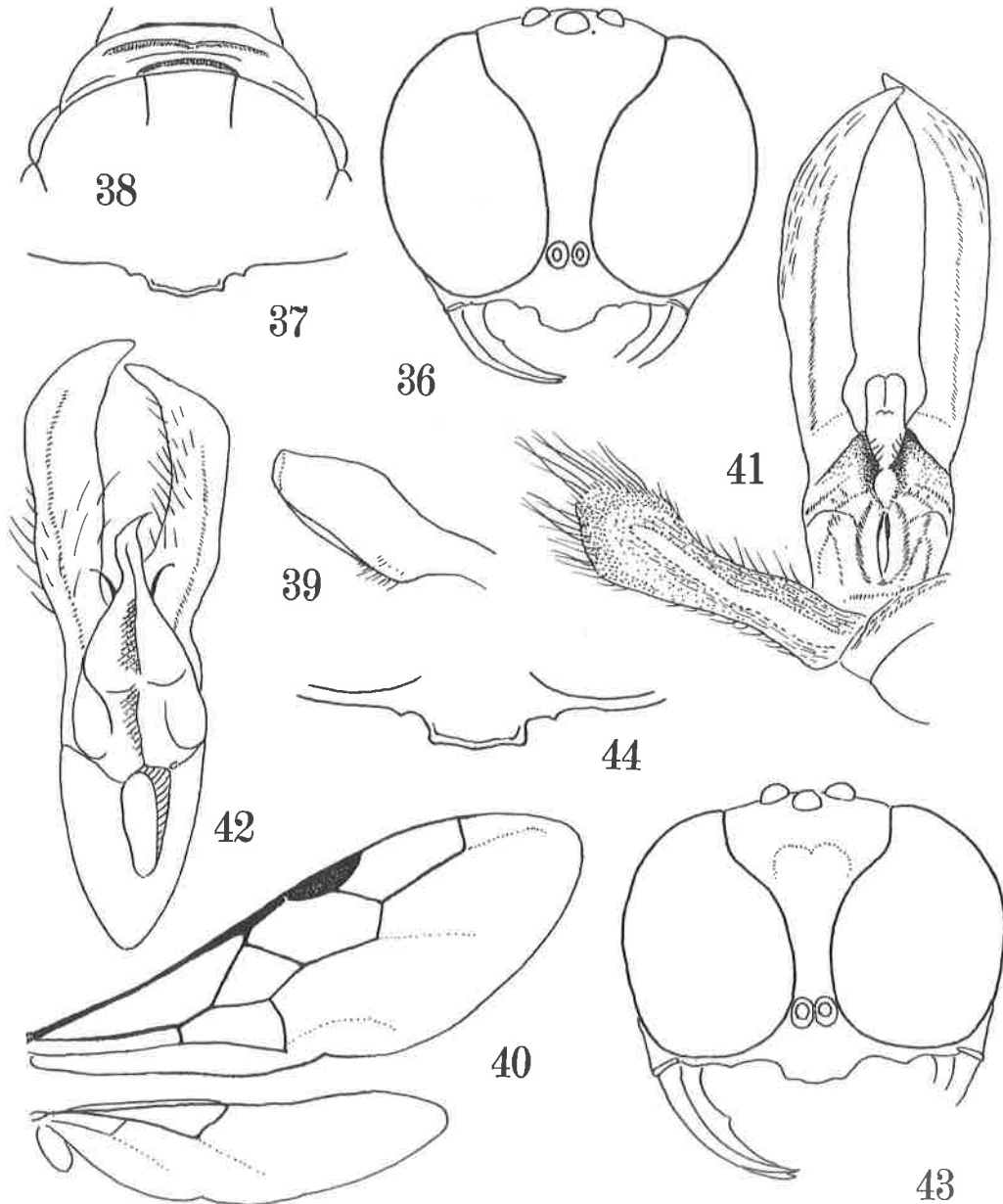
Subgenotype: Crossocerus (Yambal) minor sp. nov.

CROSSOCERUS (YAMBAL) MINOR SP. NOV.



The new species is characteristic in the minute size, well developed yellow maculae and very long precoxal tooth of propleuron.

♂. Length 3.3-3.5 mm. Black; lemon yellow are A1 wholly, A2 at apex and beneath, A3-13 beneath, clypeus except narrow apical margin (pale brown), palpi, mandible except apex (do), humeral tubercle, a mark on propleuron, two obscurely (in paratype completely) outlined marks on praepectus, apices of coxae, all trochanters, fore femur at apex and apical half beneath (rest pale brown, with an elongate darker patch beyond middle above), mid femur at apex (rest pale yellowish brown, with a brown stripe from near apex above to near base beneath), fore and mid tibiae on outer side (inner side pale brown), hind tibia at base (longer on outer side, rest dark brown to black above and pale brown to brown beneath), all spurs, fore T1-5, mid T1-4 (5 brown) and hind T1 (T2-



4 slightly brownish yellow and slightly darker apically, 5 dark brown); tegula translucent yellowish brown. Wings hyaline, stigma and veins brown to dark brown.

Head from above: Fig. 33, with L at middle and at end of occipital carina =31,34, minimum IOD at fore ocellus =24, W of occipital carina =29, ocelli large, equal, in a nearly complete equilateral triangle, OOD:Od:POD:OCD=6:4.5:5:11, frontal mark distinct-ly impressed, short, fairly shining, frontal furrow also distinct; head from in front: Fig. 36, clypeus: Fig. 37, L of A1,2,3,4,5,8,12,13=16,3,4,3,3,2.5,4.5, A3/aW=2, A13/bW=1.7, A5 from near the base roundly swollen beneath, the swelling continued slightly to A6 (Fig. 34, right-hand one, in frontal view), A3 with three, others with two long, curved, whitish hairs thrusting beneath (Fig. 34), mandible bidentate at apex, with a very feeble tooth on inner margin before middle (Fig. 36); facets of eye gradually larger below, becoming more than half the diameter of lower narrow part of A1. Pronotum: Fig. 38, somewhat bluntly carinated across middle, the carina slightly V-shaped in middle behind, accompanied with a transverse depression behind; L of pronotal collar: scutum in middle =6:31, that of scutellum: metanotum =11:5, suto-scutellar furrow broad and deep, coarsely crenate, metanotum on basal third lunately depressed and crenate, posteriorly margined with fine groove and carina, the former crenulate. Propleural tooth and fore coxal tooth in postero-lateral view: Fig. 32, precoxal tooth of mesopleuron short, broad triangular, but distinct; area dorsalis on propodeum pentagonal, wider than long, with basal transverse and apical convergent sides equal in length, while basal divergent sides about half the length of others, all the sides formed of fine, crenulate furrow and basal one accompanied with a fine carina just behind, inside the area at base longitudinally, coarsely (5 on each side) striate, striae longer towards middle and median two reach near apex of the area, apical third of the area belongs to the posterior inclination which is separated from the side by a fine carina and medianly excavated in a wedge-shape. G1 sessile, with bW,aW,median-L=10,24,31(from side); GS2 on apical 2/3 with rather sparse brushes of long, silvery hairs. Fore femur from above: Fig. 39, from behind: Fig. 35, the femur on basal 2/3 beneath flattened, and together with trochanter, covered with long, curved, pale brownish hairs beneath, following T1 with the part beyond basal excavation beneath also sparsely setose (Fig. 35), mid tibia without spur. Wings: Fig. 40; genitalia with subgenital plate from beneath: Fig. 41 (relatively enlarged), from above: Fig. 42 (do).

Upper frons and vertex microreticulate, not polished, but at frontal impressions and ocellular areas sculpture weaker, slightly shiny; scutum very minutely and closely punctured, punctures posteriorly and on scutellum sparser, with surface somewhat shining; propodeum on area dorsalis smooth and polished, except striae, outside the area dull and opaque; mesopleuron somewhat sparsely, minutely punctured, punctures gradually sparser upwards; metapleuron and side of propodeum smooth and polished; GT1 smooth, but apical portion transversely, very finely and closely striolate, from GT2 apically each basally delicately striolate and apically more weakly and sparsely so, with minute punctules moderately closely mixed on each side.

Clypeus densely clothed with silvery hairs, hairs on mandible and temple below also silvery, but rather short and soft; upper frons, vertex except posterior inclination, scutum, scutellum and area dorsalis of propodeum without hair, while side of thorax with short, silvery hairs and lateral parts of GTs with much shorter, whitish pile. As to hairs on antenna, fore leg and GS2 as given earlier, mid coxa and trochanter with short, yellowish hairs.

♀. Slightly larger, 3.7-4.7 mm, more robustly built and more brightly yellow maculated than in ♂: A1 completely, A2 at apex and beneath, clypeus except narrow apical margin, mandible except toothed area (apex black, inner margin brownish), collar and tubercle of pronotum, a large transverse mark on scutellum (only apical narrow band black), median part of metanotum completely, basal plate of fore wing, apices of coxae, trochanters (in fore and mid ones pale brown above), fore tibia at base and from apical area above to middle beneath, apical rings of mid and hind femora, all tibiae on outer side, fore T1-5 (5 slightly brownish), mid T1-3 (4,5 slightly pale brownish), hind T1-3 (each at apex pale brownish, 4 brown, 5 dark brown); tegula translucent pale brown, all spurs slightly brownish yellow, inner side of tibiae brown to dark brown. Wings hyaline, pterostigma and veins dark brown.

Head from above generally similar to ♂, but slightly more quadrate, with L at middle and at end of occipital carina 33 and 36, and temples much better developed, ocelli in a complete equilateral triangle, OOD:Od:POD:OCD=7:5:4:9; head from in front: Fig. 43, with outer margins of eyes less strongly convergent below, clypeus: Fig. 44, mandible as in ♂; A3/aW=1.7, A5/aW=1; collar of pronotum with anterior blunt carina weakly arcuate; pygidial area and femora structured as in Cr. (Ortochrabro) hirashimai.

In punctation generally similar to ♂, but on scutum PIS crossed with microstriae.

Holotype: ♂, Is. Okinawa, Kunigami-mura, Yona, 1.VIII.1988, T.Murota.

Paratypes: 1 ♂, same as above; 1 ♀, same locality, 10.VIII.1988; 1 ♀, same Is., Hentona, 7.VIII. 1987, all leg. T.Murota.

LESTICA (SOLENIUS) OKINAWANA SP. NOV.

Characteristic in colour: in the presence of well developed large yellow mark on metanotum and in the absence (in ♀ nearly) of the mark on GT1 and in the nearly wholly yellow legs in ♀; and in structure: in basally very thickened and ventrally acutely keeled fore and mid femora (cf. Fig. 49).

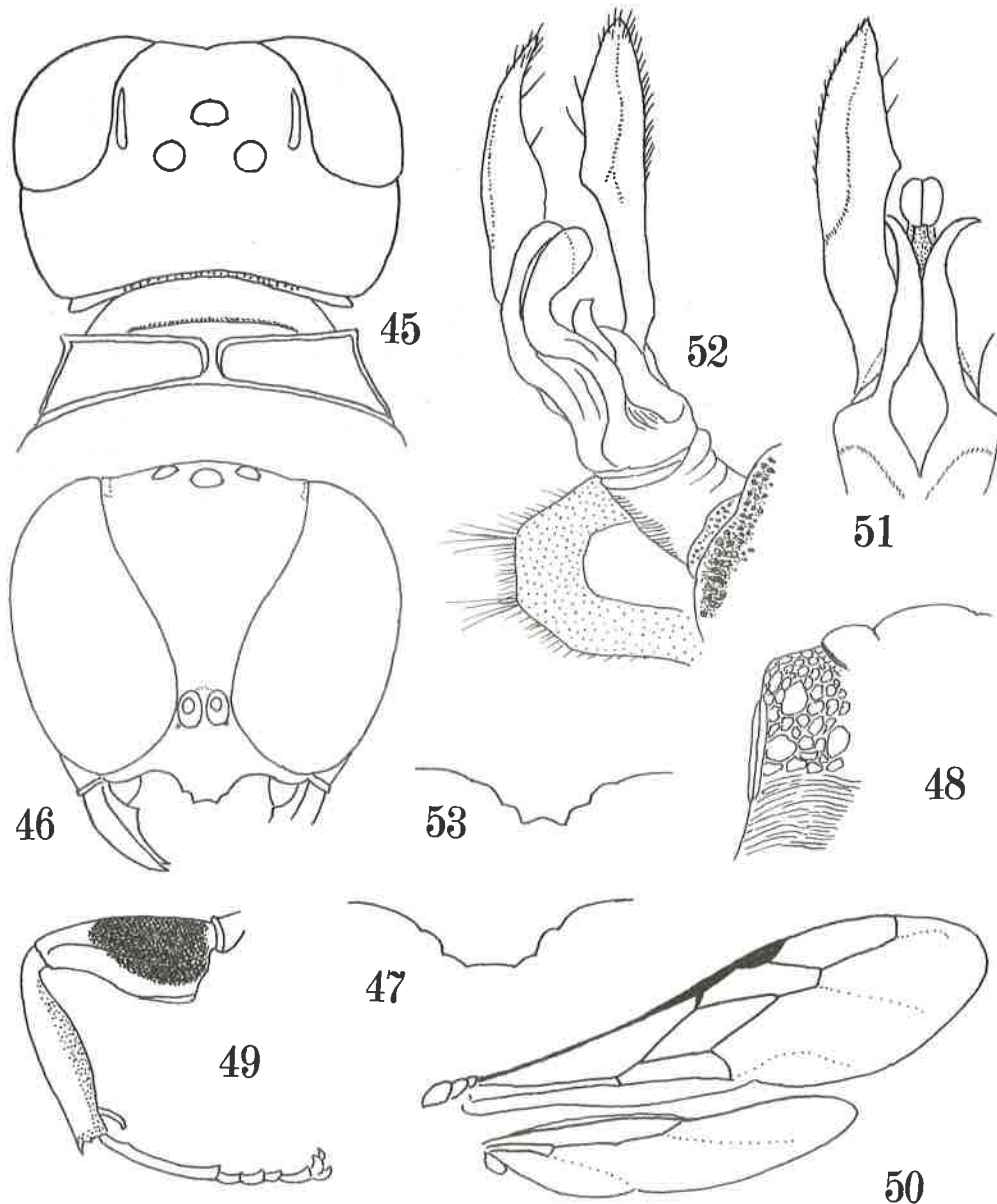
♂. Length 8.5 mm (in the condition of stretched gaster), fore wing 6.0 mm. Black; lemon yellow are A1 except dorsal side, 2 and 3 (3 slightly brownish), collar of pronotum except median notch, humeral tubercle (with a transparent spot at centre), axilla (often black), scutellum nearly wholly, metanotum completely including postero-lateral ridge, lateral small marks on GT2,3,4,5 (gradually smaller posteriorly), apical rings of all trochanters (enlarged beneath), from base beneath to apex above of fore and mid femora, a patch on hind coxa beneath, apex of hind femur, outer side of all tibiae with spur or spurs and all T1; pale yellowish brown: palpi, A4-12 beneath, apices of all femora, tibiae and T1, all tibiae beneath (broader in hind tibia) and whole of T2-5. Tegula translucent dark brown; wings hyaline, pterostigma yellowish brown and veins brown.

Hairs on clypeus and lower part of temple appressed, silvery, in the latter sparser upwards; on pronotum and on femora beneath without hair.

Head from above: Fig. 45, with median  $L=30$ ,  $VW=27$  and  $W$  of occipital carina  $=35$ , the carina distinctly reaches hypostomal carina, frontal impressions slender and comparatively long, ocelli in a triangle slightly higher than right-angled, fore ocellus slightly smaller than hind ones, with interspace between them slightly smaller than fore ocellus,  $OOD:Od:POD:OCD=7:3.5:6:14$ , outside of hind ocellus broadly, shallowly depressed; head from in front: Fig. 46, with median  $L=45$ ,  $IOD$  at antennal base  $=7$ , at anterior bases of mandibles  $=27$ , apical margin of clypeus: Fig. 47, mandible bidentate at apex, with a minute tooth on inner margin near middle;  $Lof$  A1 (excluding basal condyle), 2,3,4,5,8,11,12=18,3,4,4,4,3,3,6.5;  $Al=A2-7$ ,  $A3/aW=1.7$ ,  $Al2/bW=3$ ,  $Al2$  compressed dorso-ventrally, stronger apically,  $A4-11$  each weakly (somewhat strongly medially) rounded out posteriorly and from about A7 to 12 bluntly keeled at posterior margin to tyloidea. Pronotum: Fig. 45, each half enclosed with translucent carinae, at posterior margin foveolate and brownish; propleuron just in front of fore coxa with a strong tooth; scutum with admedian lines smooth and notauli slightly rugosed, both shining, while parapsidal sutures undiscernible, yellow part of metanotum also margined behind with translucent carinae, on mesopleuron precoxal carina turned anteriorly at its lower end; propodeum in profile: Fig. 48;  $G2-6$  each weakly constricted at base and narrowly (translucently) reflected at apex (strictly each tergite carinated across middle, with the area behind the carina punctured and the area in front smooth and the smooth area is in the normal state incerted beneath the preceding tergite);  $GT7$  with a subquadrate (apical margin weakly emarginate), flattened pygidial area, margined with weak carinae, surface closely covered with large punctures, except medio-apical longitudinal furrow. Fore femur, tibia and tarsus seen from behind: Fig. 49, femur acutely keeled beneath, but without hair, the keel at base turned into a transparent carina, dorsal surface obliquely flattened backwards, frontal surface from ventral keel also flattened and smooth till near top, tibia normal, T1 long, gently curved, with short brush hairs beneath, in length  $=T2-5$ ; mid femur similar in structure to fore, but not transparently carinated at base beneath, tibia normal, but with a short, curved spur, T1 shorter than that of fore, hind femur normal, tibia with apical  $2/5$  obliquely truncate at antero-outer side, strongly spined on outer side and with two spurs, longer one of which about half as long as T1 which is slightly longer than T2-5 united. Wings: Fig. 50. Genitalia from above: Fig. 51 (right paramere omitted), obliquely from beneath with subgenital plate: Fig. 52.

Upper frons closely, irregularly punctured with moderate-sized punctures, apparently subreticulate, punctures posteriorly larger and at outer side of ocellar area showing more or less interspaces; punctures on pronotum as on upper frons, those on scutum anteriorly as on upper frons, but from about middle posteriorly larger, slightly longitudinally elongate and confluent, appearing rugoso-punctate; scutellum grossly, metanotum slightly finely and closely punctate, dorsum of propodeum very coarsely, irregularly reticulate, posterior perpendicular inclination more finely so, median fur-

row from base of dorsum to about middle of inclination well defined; side of pronotum in front of prepectus longitudinally, coarsely rugoso-striate, prepectus densely covered with minute, piliferous points, surface mat, mesopleuron below finely, closely punctured, with PIS less than Pd, but on median portion punctures larger, sparser and PIS generally as great as Pd, but partly much greater than Pd, with PIS microreticulate, half shining, on epimeral area below wing base longitudinally, finely, closely striate, with some punctures scattered between; metapleuron and side of propodeum below coarsely covered with widely waved striae, with PIS mat. Punctures on GTs small, dense and even, except apical marginal areas, GS2 sparsely covered with larger punctures, with PIS=Pd, except a pair of large, rounded, opaque areas located posterolaterally, rest of GSs mat, but GS2-4 with a transverse, foveolate furrow at each apex in front of marginal area.





♀. 7.5 mm (in the state gaster shrunk), fore wing 7.5 mm. Similar in general to ♂, differing: In colouration: A1,2,3 completely yellow and A4-12 not ferruginous beneath, axilla yellow and margined with translucent carina, GT1 with very minute, latero-apical brownish marks, marks on GT2 narrowly extended inwards, only leaving very short interspace, apices of fore and mid coxae, hind coxa at apex and beneath broadly, all trochanters, fore and mid femora completely yellow, hind femur yellow, but anterior above and posterior beneath pale brown, all tibiae with spurs, except apices, and all T1, except apices, yellow; in structure: flagellomeres not flattened, without tyloidea, A3/aW=1.3, A12/bW=2, mandible tridentate at apex and the tooth on inner margin stronger (in colour medianly more plainly brownish), clypeus with median produced part narrower (Fig. 53, cf. Fig. 47), with apical emargination deeper, fore and mid legs similar to those of ♂, but fore femur without transparent carinae at base beneath and T1 of both legs slightly longer than T2-5 united; pygidial area triangular, apically gutterwise excavated, strongly reflected in lateral view and margined on both sides with golden setae, shorter ones of which also covering sparsely the rest of GT6.

Holotype: ♂, Island of Okinawa, Kunigami-mura, Yona, 12.VIII.1988, T.Murota.

Paratypes: 1 ♀ 1 ♂, same as above.

#### LESTICA (SOLENIUS) HENTOMA SP. NOV.

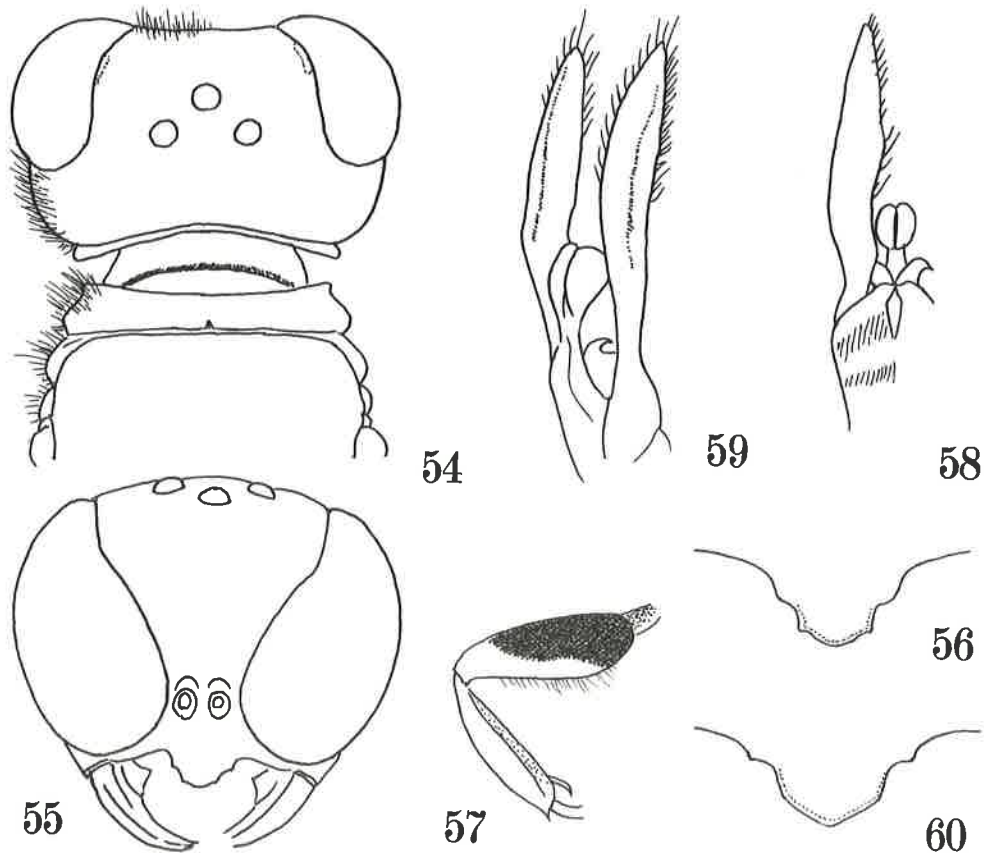
Closely related to the preceding species, differing from it, however, somewhat in coloration, sculpture, vestiture and in form of head from in front, together with clypeus, and markedly so in the structure of antenna and male genital organs.

♂. 6.0 mm, fore wing 4.0 mm. Black, lemon yellow (much brighter than in the preceding species) are A1 except above, A2 beneath, mandible at base above and on outer side, collar of pronotum (median notch not reaching anterior margin and anteriorly and laterally not enclosed with translucent carina), humeral tubercle (dorsal and posterior margins narrowly translucent, but without central transparent window), episternum in front of oblique suture (postspiracular carina transparent and strongly curved), axilla broadly (not margined with transparent carina), medianly constricted and finely interrupted band at anterior half of scutellum, with its postero-lateral carinae, median raised part of metanotum with its postero-lateral carinae, lateral marks on GT1-4, on 2 largest, a broad band before apex of GT5 (medianly weakly incised from in front) and often small lateral spots on GS2, mid and hind coxae at apex, fore femur from near base beneath on posterior side to apex (Fig. 57), mid femur similar, but from more apically so, all tibiae except inner side and apex, fore T1, mid and hind T1-2. Rest of mandible, except marginal area, pale brown, tegula translucent yellowish brown, inner side of tibiae with spurs and rest of tarsi more or less brownish.

Hairs on scapal basin, clypeus and temple appressed and silvery, on upper frons, vertex, thorax on dorsal and lateral surfaces erected, moderately long, close and whitish, on mesosternum longer and closer, on GTs shorter, half erected and slightly copery, on trochanters, femora and tibiae beneath fairly long, close and whitish and on tibiae and tarsi similar but shorter.

Head in dorsal view: Fig. 54, similar in form to that of okinawana, with VW=32, W of occipital carina =33 and median L =28, but with punctures slightly larger and slightly sparser, with PIS not narrowed to carinae and mostly 1/2 as wide as Pd, fairly shining, frontal impressions slenderer, larger and posteriorly not apart from eye margin, ocelli in a right-angled triangle, equal in size, OOD:Od:POD:OCD=8:4:7:13. Head in frontal view: Fig. 55, median L much shorter (=38), hence head more rounded, MIOD just above base of antennae and IOD at lower ends of eyes 9 and 27, apical margin of clypeus: Fig. 56, mandible bidentate at apex, with a fairly stout tooth on inner margin near base, antenna shorter, flagellum thicker, not compressed, without tyloidea, A1 bicarinate in front, A6 excavated beneath, L of A1 (excluding basal condyle), 2,3,4,5,6, 8,11,12=16,3,5,4,4,4,2.5,2.5,4, A3/aW=1.5, A12/bW=1.2; pronotum: in Fig. 54, with W at anterior margin =34, lateral margin constricted across middle, posterior marginal furrow narrower than in okinawana, bisinuate, less foveolate, often not connected with median notch (the notch often represented by dark brown colour only) which does not reach anterior margin; scutum with admedian lines in two closely located, long, parallel lines (rather appearing as a long groove), notauli indistinct, parapsidal suture defined only at its median part, as a small, oval, gently raised, polished area, not outstanding among the strong punctation which is as on vertex, strong, even and close but posteriorly somewhat elongate and at inlined area in front of scutellum longitudinally, closely rugoso-punctate; punctures on scutellum and metanotum as on central

part of scutum; propodeum with dorsal part short, about  $1/3$  as long as posterior inclination, at base transversely, shiningly furrowed and coarsely foveolate, laterally coarsely, irregularly reticulate and posteriorly finely, closely so, but with a narrow, shining median furrow, posterior inclination nearly perpendicular, separated from the sides posteriorly by a single, strong carina which upwards becomes blunt and somewhat obscure, while from the dorsum by the transversely connected carina or carinae of the coarse reticulation, the surface medianly deeply hollowed in a broad wedge-shape, within which finely punctured, but the surface fairly shining, outside the hollow irregularly, coarsely reticulate upwards and transversely rugoso-striate downwards; the hollow posteriorly supported by four longitudinal, parallel lines. Letero-posterior tooth of propleuron much less acute and long than in the preceding species, precoxal carina on mesopleuron turned from its lower end anteriorly as in *okinawana*, punctuation of mesopleuron somewhat sparse and even all over as on scutum, with PIS smooth and polished; mesosternum medianly longitudinally, finely furrowed; metapleuron and side of propodeum longitudinally, the former somewhat coarsely, the latter very finely and closely striate; gaster at intersegmental areas weakly constricted, each segment at



posterior margin narrowly smooth, with disc somewhat more finely and more closely punctured than on thorax, with PIS mostly less than Pd and sparsely microstriolate; furthermore, from GT4 apically punctures gradually smaller and weaker; GS2 punctured as on GT2, but punctures at median area somewhat sparser and weaker, and at usual opaque areas (slightly raised) very finer and closer; from GS3 apically each segment without puncture, with surface mat or half-mat. Wing venation similar to that of the preceding species, except that nervulus slightly less remotely antefurcal (? constant). Genitalia from above: Fig. 58 (righthand paramere omitted), obliquely from side and above: Fig. 59.

♀. Length about 8 mm, fore wing 6.5 mm. Similar to ♂ except sexual characters, differences: In colour: Yellow on pronotum medially completely (though linearly) interrupted, scutellar band widely separated into lateral spots which are slightly smaller than axillar one, basal plate of hind wing also yellow and fore T2 pale brown.

In structure: Mandible tridentate at apex, clypeus slightly different in form of medio-apical projection (Fig. 60), A6 without incision beneath; femora and tibiae comparatively thicker, though similar in form.

Punctuation on scutum finer and closer, punctures anteriorly transversely, posteriorly longitudinally, linearly arranged; on scutellum somewhat coarsely, longitudinally rugoso-punctate; irregular reticulation on antero-lateral portions of propodeum much less coarse; GS2 at central area with punctures somewhat larger and sparser (opaque areas similar), rest of GSs smooth and shining, but GS3-5 at baso-lateral portions (slightly apart from the lateral margins) very minutely, fairly closely punctulate.

Measurements: Head from above with VW=32, W of occipital carina =33, median L=28, maximum L at end of occipital carina =33, OOD:Od:POD:OCD=7.5:4.3:6:13.5. Head from in front with median L =38, IOB just above antennal base and at lower ends of eyes =7,28; L of A1,2,3,4,5,8,11,12=15,3,4,4,4,3,2.5,3.5; A3/aW=1.5, A12/bW=1.3. W of pronotal collar at anterior margin =33, at posterior margin =37, G1 with basal condyle, W at extreme base, behind condyle, at apex and median L =12,11,38,31, maximum W of gaster at middle of G2 =43, GT6 with pygidial area, at base elongate triangular, apically gutter-like, for about 5 in L. Fore T1=12=T2-5. In fore wing L of radial cell =27, transverse apical vein =4, abscissa 1=2=14, pterostigma =11, intercubitus 1 =6, abscissae 1 and 2 of cubitus =20,4.5, nervulus by its own length (about 2) antefurcal.

Holotype: ♂, Is. Okinawa, Hentona, 7.VIII.1987, T.Murota.

Paratypes: 1 ♀ 1 ♂, same as above.

Remarks. The species that was first found on Palau Island and later also from Okinawa and Taiwan (1942) and misidentified by K. Yasumatsu (1939) with Lestica (Ceratocolus) quadriceps (Bingham) was described by K. V. Krombein (1949) as a new species, Lestica (Solenius) constricta, with abundant materials from the Palau Islands. But his Solenius is sens. latr. and strictly (according to the Pate's systematics) it must be assigned to the subgenus Ceratocolus as done first by Yasumatsu, because the male has the head posteriorly elongate and with fore leg markedly modified. Thus, the species, though known from Taiwan and Okinawa, is quite different from the two species described here.

#### RHOPALUM (LATORRHOPALUM ?) OKINAWANUM SP. NOV.

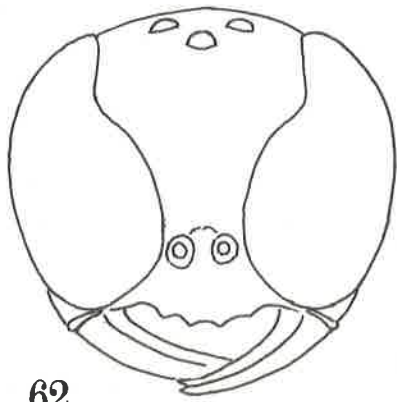
In the present specimen (♀) (1) head and thorax half-opaque (finely, closely punctured, with PIS slightly less than Pd, originally, possibly, not dull, but crossed by numerous microstriae connecting punctures that weakening the brightness), with frontal impressions long, deep, linear along eye margin, without space to be outlined there, but with the area along its inside broadly smooth and shining (Fig. 61), (2) petiole comparatively short, nearly as long as hind femur, and distinctly nodose at apical half (Figs. 63, dorsal; 64, lateral), (3) pygidial area in form as Fig. 65, with lateral ridges basally dull, apically acute, with surface microgranulate, mat, at apical area very gently concave, but without medial ridge at base.

Character (1) is close to subgenus Latorrhopalum, and (2) and (3) are like those of Rhopalum s. str. If the cardo of male genitalia is Y-shaped, Latorrhopalum must be sectioned to receive this species and if it is cylindrical a new subgenus must be erected for this species. Until the male of this species will be discovered, the problem must be solved for determination. For the time being, it was placed provisionally under the subgenus Latorrhopalum.

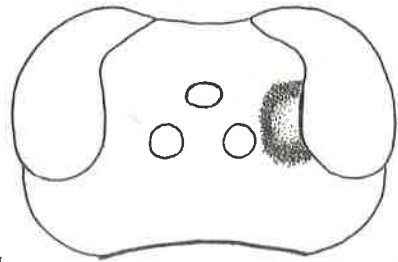
♀. Length 5.7 mm. Somewhat resembles R. (R.) kuwayamai m., but differs in the structure of clypeus, in the relative length of abscissae 1:2 of radius of fore wing and of T1:2 of hind leg and considerably so in coloration.

Black; lemon yellow are A1 in front, apex of A2, posterior portion of humeral tubercle; yellowish white are apices of coxae, trochanters and femora narrowly, fore tibia with spur except inner side, fore T1-5 except arolium, mid tibia from base to middle of outer side and at apex with spur, mid T1-3 and hind tibia at base and its spurs; mandible dark brown except base and teeth; tegula translucent amber yellow except base, palpi pale brownish yellow.

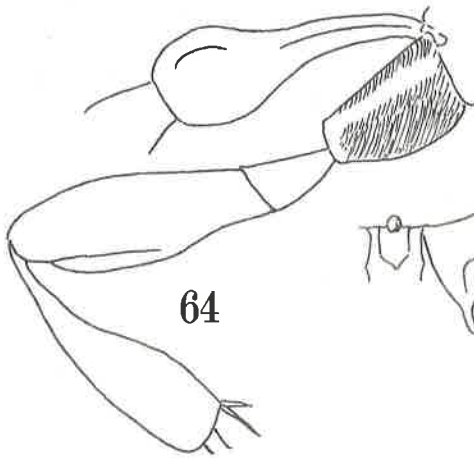
Head from above (perpendicular to vertex, not through occiput): Fig. 61, with median L =28, VW=27, ocelli in a triangle slightly higher than right-angled, but some-



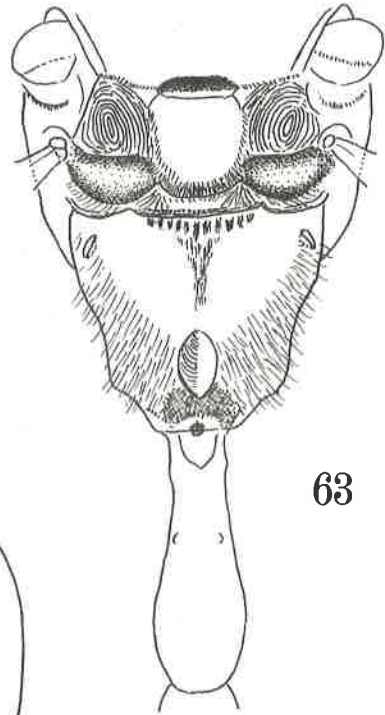
62



61



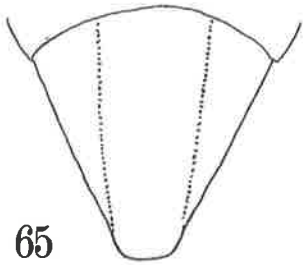
64



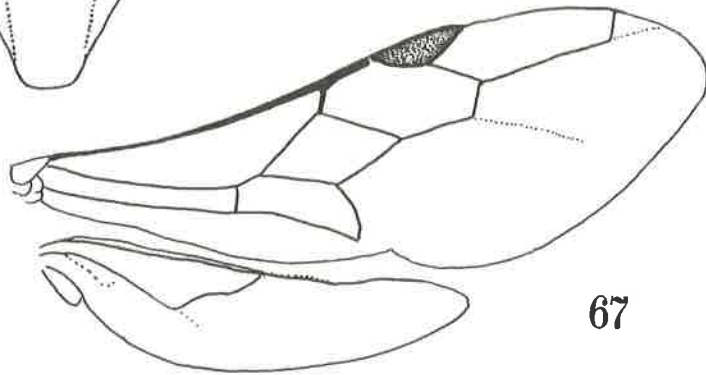
63



66



65



67

what lower than equilateral, posterior plainly larger than anterior, OOD:Od:POD:OCD=7:5:4.5:11; head from in front: Fig. 62, with median L=39, MIIOD just above antennal base =10, very slight antennocular space present (about 0.5), covered with silvery hair, IOD at lower ends of eyes =32, mandible bidentate at apex, without tooth on inner margin, L of Al,2,3,4,5,8 (from Al0 apically lost)=16(excluding basal condyle),5,4,4,4,3, Al/aW=1.3. Pronotum narrow, medianly notched, roundly curved at antero-lateral corners (not toothed there), scutellum, metanotum, propodeum and G1: Fig. 63, area dorsalis not enclosed with furrow or line of striae, but very marked by the difference in sculpture and vestiture, the area smooth and polished, without hair, only at base with a transverse, crenate groove and at middle with shortly striated area, posterior inclination including apical triangular part of smooth area medianly deeply, elliptically hollowed, on other areas nearly flattened and separated from the side by a distinct carina. L of petiole =35, with maximum W=11.3, while L of GT2=24 and GT3=16, petiole in dorsal view: in Fig. 63, when hind coxa, trochanter and femur stretched straight: Fig. 66, comparatively seen from in profile: Fig. 64, pygidial area: Fig. 65, with lateral margins rather bluntly edged, only at apical area finely and acutely carinated, surface microreticulate, dull and opaque, transversely flat, longitudinally very weakly roundly inclined and only apical area gently reflected. L of petiole, hind trochanter (above), femur (above), tibia and T1,2,3,4,5 (excluding pulvillus and claws)=35,11,31,36,17,8, 5,2.5,5, while longer tibial spur =11. Wings: Fig. 67.

♂, unknown.

Holotype: ♀, Is. Okinawa, Mt. Kuenchizi, 5.VIII.1988, T.Murota.

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