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1983

A D D E N D U M

DISCOVERY OF THE MALE OF CERATOCRABRO SHIMOYAMAI (TSUNEKI)

(HYM., SPHECIDAE, CRABRONINAE)

By K. TSUNEKI

After the manuscript of the present Number went to press the hitherto unknown male of this very rare species has been sent to me for study and the generic diagnosis of Ceratocrabro that was made upon the female characters alone could be supplemented fortunately in the same Number of this Publication.

The specimen: 1 ♂, Fukui Pref., eastern montanic area, Hatogayu Spa, 26.VIII. 1983, Miss C. Nozaka leg.

Only three females of this species and genus have been collected up to the present, although the species has most actively been searched for by the hymenopterists of this country, namely, 1 ♀, Towada, montanic area of Aomori Pref., 1957 by K. Shimoyama; 1 ♀, same locality and same collector, 1962; 1 ♀, Fukui Pref., in eastern montanic district, 1982 by T. Murota.

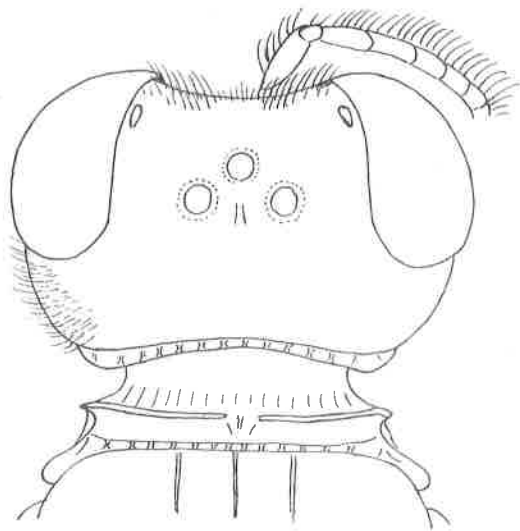
Generic characters.

(1) Common with ♀: Hairless eye, palpal formula, ocellar disposition, supraorbital fovea, structure of pronotal collar, precoxal tooth of propleuron, precoxal carina of mesopleuron and general pattern of striation, punctation and sculpture of thorax and propodeum.

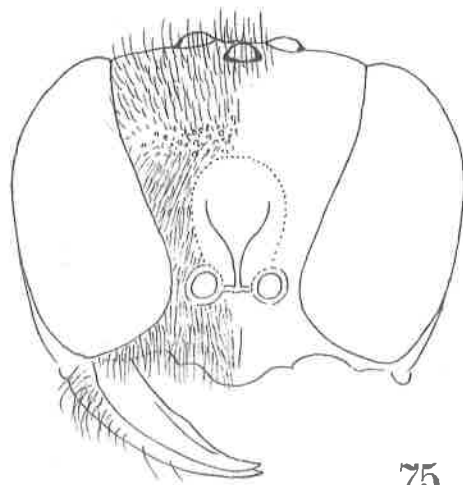
(2) Sexual: Inner orbits distinctly convergent below, but not contiguous to antennal socket rims and the latter widely separated from each other; antenna 12-jointed, joint 1 unicarinate as in ♀, 3-12 with thick and rounded out tyloidea and 1-12 fringed with long hair on antero-dorsal margin (not beneath); clypeal teeth less developed, with medial one lacking and with lateral ones more obtuse, mandible bidentate at apex, occipital carina much more highly flanged and more coarsely foveate in front; gaster more strongly and closely punctured, tergite 7 without pygidial area; legs much more brightly coloured, with basal segments covered beneath with rich long curved hair.

Description of Ceratocrabro shimoyamai (Tsuneki, 1958) ♂.

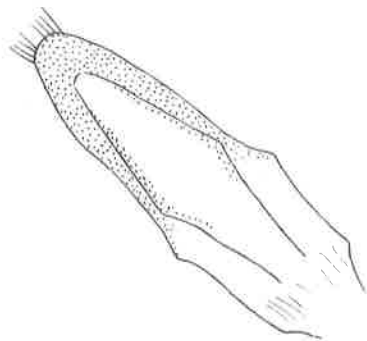
Length 7.0 mm. Black, with ground surface shining. Lemon yellow are a large mark on mandible, apical mark of fore (large), mid (small) and hind (a spot) femur, and a streak on outer side of fore (long but not reaching apex) and mid (shorter) tibia and whole the outer side of hind tibia; ferruginous to bright ferruginous are antennal joint 1 in front broadly, thick flagellar tyloidea, mandible around yellow mark and on inner dorsal margin, fore trochanter wholly, fore femur except black streak beneath, mid trochanter except black line beneath, mid femur except black streak above and beneath, all tibiae except each dark brown streak (in fore fine, in mid broad and in hind long) and all tarsi except dark brown apical two joints; antenna apically and beneath slightly brownish, tegula shining translucent brown, wings very slightly darkened throughout, basal plates and veins dark brown, stigma pale. Hair on clypeus, mandible, sides of lower frons, temples, sides of thorax, gastral tergite 1, sternite 2 and trochanters and femora of legs silvery; that on upper frons, vertex, pro- and mesonotums greyish black and apically whitish, on posterior part of mesoscutum and on scutellum white, but basally brownish and on the rest of gastral tergites coppery brown. Hair on clypeus, sides of scapal basin long, not closely appressed, half erected, on temples fairly appressed but mixed sparsely with some erect hairs, hair on head above and thorax long and erected, on head as long as antennal joint 3 and posteriorly much longer, on gastral tergite 1 and sternite 2 slightly shorter, the former erected and the latter half appressed, on the rest of tergites much shorter and erected; fringe of hair on antenna (presence of hair fringe on scape is very curious) long (Fig. 78), very slightly brownish (as a whole silvery), producing forwards and at apex curved, long soft hair on trochanters and femora of legs erected and apically irregularly curved (in hind leg the hair shorter, sparser and less distinctly curved apically).



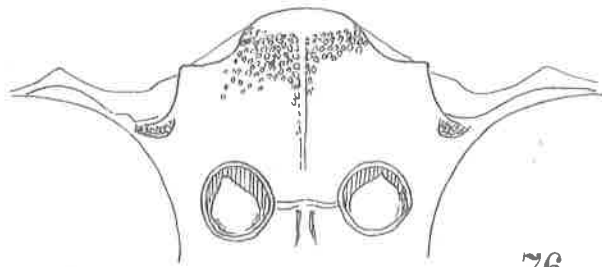
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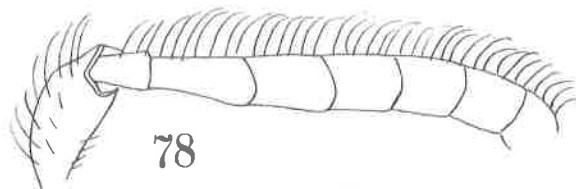
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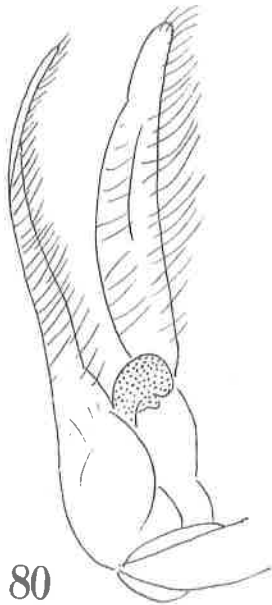
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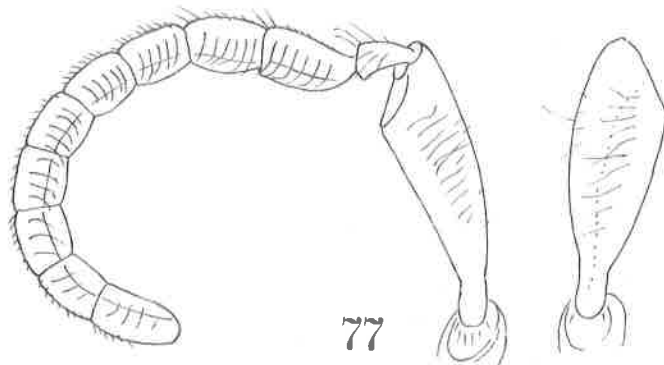
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Head and pronotum seen from above: Fig. 74 (based on measured values), frontal furrow absent, supraorbital foveae comparatively small, deeply impressed, elongate ovoid, with narrow end posteriorly, not acutely edged at margin, ocelli each with roundly raised marginal area markedly broad, but with margin indistinct, while so-called pupil distinct, not large; measured at their marginal lines OOD:Od:POD:OCD=15:6:13:30 (if measured at the obscure margins of the raised area =(appr.)13:11:8:28). Head seen in front (with right mandible): Fig. 75, notice the inner orbital convergence and spacial relation of antennal socket rims; clypeus: Fig. 76, at lateral areas thick, with apical margins duplicate, dorsal and ventral, dorsal margin retreated and at its mid point triangularly toothed, tentorial pits large and almost contiguous to inner orbits, antenna (right) in frontal view: Fig. 77 (with left scape), in dorsal view: Fig. 78, joint 3=2.2times, 4=2times as long as wide at apex, 3 at dorsal apex blunt triangularly extended, 4 similar, but less markedly so, tyloidea each margined distinctly with a fine shallow impressed line, fringe of hair arises on joint 1 from near outer margin, on the rest from dorso-anterior margin (when laterally stretched), on scapal basin a pair of fine carinae arise at mid point of the transverse carina connecting antennal socket-rims with each other, bifurcate after running a short distance and then turn again to run paralleling and disappear at about two thirds of the smooth and shining part of the basin from base, the basin without carina dorsally, occipital carina broadly and highly flanged, reaching close to hypostomal carina but not reaching there, ending suddenly at apices. Pronotal collar short, with anterior margin straight, acutely edged and carinated and produced in tooth at lateral corners, bearing a broad subtriangular incision in middle (Fig. 74), anterior aspect of the collar steeply inclined to nape region and acutely edged on each side, propleuron with ante-coxal tubercles strongly toothed, the teeth connected with each other with a transverse carina which is provided equidistantly with two short teeth where apical marginal carina of the nape jointed. Mesoscutum at anterior margin shortly perpendicularly raised and then roundly curved posteriorly as usual, admedian line and notauli finely distinctly carinate, reaching posteriorly till about a third of the scutum from base, parapsidal sutures indistinct, partly due to the closely running longitudinal striae, but in oblique light the places are longitudinally long bluntly impressed, suto-scutellar furrow deep, roundly inclined from both sides, scutellum roundly and highly raised and medianly broadly, rather shallowly furrowed, postscutellum at anterior margin transversely, acutely carinated, with the furrow in front deep. On mesopleuron postspiracular-epicnemial-acetabular carina forming a distinct line, epicnemial area flat, anterior face of humeral tubercle also flat, forming a closely levelled but separate plane as against epicnemial area, episternal and mesopleural furrows strong, scrobal furrow absent, precoxal carina curved in front of mesocoxal socket rim, somewhat apart from it and at its lower end turned forwards and disappeared, a short longitudinal carina present obliquely in front of the anterior end of precoxal carina, distinctly separated from it and deviated towards sternum, metapleuron acutely carinated at anterior margin just behind mesopleural furrow and inclined strongly towards metapleural suture; on propodeum lateral carinae strong and distinct, dorsal aspect short, represented by a transverse series of coarse foveae that are separated with high carinae and strongly zigzagged at posterior margin - corresponding area dorsalis -, posterior aspect broad, nearly perpendicular and flat, on dorso-lateral obliquely inclined areas coarsely reticulate and at the central area above a somewhat longitudinal, broad and shallow depression present, margined laterally with subparallel-sided (slightly divergent upwards) carinae and apically with roundly curved carina, from middle of which a short longitudinal carina runs to gastral socket rim. Gastral segment 1 sessile, about as long as wide at apex, the gaster as a whole with sides not so triangularly attenuate apically as in ♀, but more roundly so, tergite 7 simple, without pygidial area. Sternite 8: Fig. 79 and genitalia roughly as given with Fig. 80. Legs, except markedly incrassate femora, not particularly modified, fore femur broadly flattened above and fairly acutely edged on posterior margin; mid tibia with 7 (including apical 3) and hind tibia with about 13 (in 3 rows) spines on outer side, hind tibial spurs slightly broad, somewhat lobiform, the longer one slightly more than half the length of the following metatarsus, all metatarsi long, as long as the following tarsal joints united. In fore wing accessory cell widely open at apex, with its vein running in parallel with costa at apical part, abscissa 1:2 of radius 10:15, of cubitus 16:5 (same scale), and transverse radius and -cubitus relatively 3 and 5 respectively.

Upper frons moderately closely covered with medium-sized punctures, PIS mostly as large as PD and shining, punctures anteriorly closer and on the roundly inclined verge to scapal basin dense and mostly subtransversely arranged, punctures on vertex at ocellular areas very sparse, with broad impunctate polished areas outside hind ocelli,

but posteriorly gradually increased in number and somewhat shallower and mixed with obtused rugae, on posterior inclination to occipital carina first close, but then sparse again, occipital furrow in front of carina strongly foveolate, punctures on temples fine and close, the furrow at posterior margin of pronotal collar also strongly foveolate. Mesoscutum medio-anteriorly between notauli closely covered with medium-sized punctures, on basal area outside notauli punctures larger, shallower and sparser, mixed with transverse - oblique striae (striae arise from each notaulus somewhat radiately, but inward ones between notauli finer, shorter, closer and weaker and less distinct), on median area punctures much sparser and the striae mixed stronger and longitudinal and on apical area punctures almost completely lacking and the striae all longitudinal, fine and very close, scutellum strongly and sparsely punctured and on posterior marginal area mixed with close, short longitudinal striae, postscutellum finely, closely rugoso-striate and -punctate, not shining. Propleuron from lateral tooth of collar below strongly transversely striate, on mesopleuron epicnemial area very finely and closely covered with piliferous punctules, both epicnemial and episternal furrows very strongly and coarsely crenate with longitudinal carinulae, prepectus mostly covered with the extended carinae from episternal furrow, but with interspaces of the striae further minutely, finely and longitudinally striolate and mixed with a few punctures, episternum widely longitudinally striate and sparsely punctate between striae, the striae finer and closer upwards on epimeral area and posteriorly on the area along mesopleural suture, but sparser below, with mixed punctures gradually larger and near sternum striae completely lacking and punctures somewhat closer (PIS=PD); metapleuron longitudinally, strongly and coarsely striate, side of propodeum much more coarsely, longitudinally (somewhat obliquely) striate, apparent area dorsalis consisted of a transverse series of large foveae, apex of each fovea triangularly produced, forming as a whole strongly zigzagged margin, outside the series at the obliquely inclined areas more coarsely reticulate, posterior aspect on central area upward, just behind area dorsalis finely, weakly, irregularly reticulate, on depressed area minutely and irregularly rugulose and on lateral areas obliquely or transversely, strongly and coarsely striate, intervals of striae above microsculptured, but below smooth and polished. Gastral tergites fairly closely covered with fine piliferous punctures, punctures posteriorly gradually finer and ground surface of tergites 5, 6 and 7 microsculptured, not shining.

Remarks.

The male of *Ceratocrabro* is certainly close to that of *Ectemnius*, but differs from it not only in the characters of supraorbital foveae, antenna, carinae on scapal basin and sculpture on thorax, but also in the spatial relations between inner orbits and antennal socket rims.

The genus *Ceratocrabro* differs from *Williamsita* markedly in that antenna (δ) is 12-jointed, inner orbits subparallel (δ), antennal socket rims widely separated from each other (δ) and from inner orbits (δ , in δ narrowly, but distinctly so), antennal flagellum with tyloidea and curiously fringed with hair (δ), scutal flange normal (δ), lateral propodeal carinae present (δ), legs almost normal (δ), mid tibia with a normal spur (δ) and the male is without pygidial area on tergite 7.

Acknowledgement.

I express my sincere gratitude to Mr. T. Marota and to Miss C. Nozaka who have long endeavoured to find out the male of this very rare and curious species and kindly sent their final achievement to me for study.

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