Etizenia

*Occasional Publication of the Biological Laboratory*
*Fukui University, Japan*

No. 65.

# NEW AND THE FIRST RECORDED SPECIES AND SUBSPECIES OF SPHECIDAE AND MUTILLIDAE FROM JAPAN, WITH TAXONOMIC NOTES ON SOME SPECIES (HYMENOPTERA)

By K. Tsuneki
(Biological Laboratory, Fukui University)

FEBRUARY 25, 1973

# NEW AND THE FIRST RECORDED SPECIES AND SUBSPECIES OF SPHECIDAE AND MUTILLIDAE FROM JAPAN, WITH TAXONOMIC NOTES ON SOME SPECIES (HYMENOPTERA)*

By K. TSUNEKI
(Biological Laboratory, Fukui University)

## I. SPHECIDAE

### 1. *Sphex* (*Isodontia*) *boninensis* sp. nov.

This species is closely allied to the Formosan congener, *S. pempuchi* m., but the abdominal petiole is shorter and much less curved, the 3rd joint of antennae relatively longer, the head and thorax without bronzy shine, the golden pubescence on the face extended much above the antennal base and the wings clear hyaline except apex and with less yellowish shade.

♀. Length 15 mm. Black; mandibles with a narrow transverse reddish patch before middle, the hair on clypeus and sides of face extended up to above the antennal sockets and dense, appressed and golden, mixing sparse long erect and similar coloured hair, posterior margin of pronotal tubercles, a narrow subalar area and hind tibiae behind also densely covered with short golden pubescence; rest of head, thorax-complex and femora behind sparsely covered with long brassy hair, the hair on ventral side of thorax slightly more golden; temples and collar covered densely, further, with short, velvety, yellowish white pubescence, remaining areas of head and thorax sparsely covered with similar pubescence.

Head seen from above with OOD:POD=16:13, width of postocellus relatively 5.5, face slightly convergent below, interocular distance at the emarginations of inner orbits and at the lateral base of clypeus (minimum) 61:48 (≒6:5), length between anterior margins of median ocellus and of clypeus (at apex of medial teeth) relatively 90, OAD:WAS:IAD=15:11:6, interantennal area raised and obliquely, fairly steeply inclined upwards, clypeus at base suddenly raised as in *S. pempuchi*, apical margin bidentate in middle as in this, but the rounded teeth slightly longer (Fig 1), mandibles tridentate at apex, with the maximum width before middle nearly as long as the ultimate antennal segment (relatively 17:18), antennal joint 1 thick, subglobule, relative length of joints 3, 4 and 5 approximately 35, 26 and 25, joint 3 amply 4 times as long as broad at apex (in *pempuchi* 3.8 times so), tyloidea on joints 3 and 4 linear, in full length of the joints, on 5 and 6 slightly shortened on both ends and slightly broadened on 6, on 7 and 8 similar to 6 but much enlarged on basal half, on 10 and 11 much shorter, lenticular in form, each tyloideum covered with particularly dark velvet and appears dull and opaque, on both sides of which the surface slightly impressed, with the hair shorter and appears to be rhinaria which are shorter and irregular in form apically. Median scutal line of mesonotum about a third of the scutum, propo-

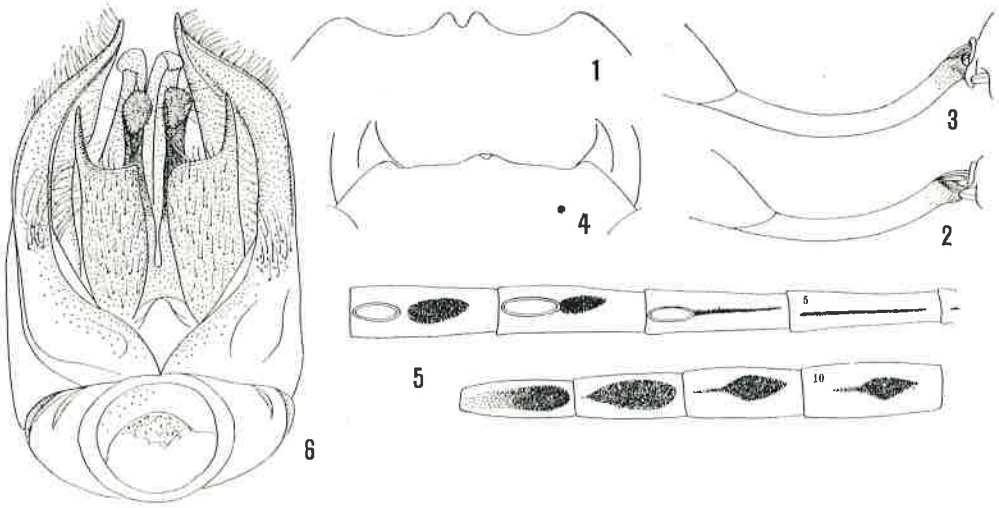
* *Contribution No. 171 from the Biological Laboratory, Fukui University, Japan.*

deum with medio-apical impression very feeble, petiole in lateral view: Fig. 2 (cf. Fig. 3, in *pempuchi*), seen from above shorter than hind femur or tergite 1 (approximately 3:4), spines of tibiae as usual (as in *pempuchi* or in *nigellus*), tibial spurs, metatarsi and venation also similar.

Vertex posterior to ocellar area finely, sparsely punctured, supraantennal area irregularly rugulose and scattered with hair-bearing medium-sized punctures, mesonotum and scutellum finely punctured, with intervals on the disc 3-5 times, on the marginal areas 1-2 times as large as punctures and covered sparsely with micropoints (in *pempuchi* intervals uniform all over), mesopleuron and -sternum slightly more largely, closely, somewhat rugosely punctured, propodeum rugulose and microgranulate as usual, mat; tergites 4 and 5 with a few fine punctures near apical margin.

♂. Length 14 mm, differing from the female in the following points:

Median incision at apical margin of clypeus smaller and shallower, with the teeth at the sides much smaller (Fig. 4), mandibles except extreme base and apical teeth bright ferruginous, slightly less in width, antennal joints 3-5 with long linear tyloidea, 6 on basal 2/3 carinated and then impressed into a rhinarium (Fig. 5), 7 and 8 basally elevated and apically impressed (do.), 9-13 with irregular-shaped elevation (do.), the elevated areas particularly mat, both sides of the tyloidea appear to be rhinaria as in ♀, not distinct in outline, shallower and apically irregular in shape. Petiole as in ♀, genitalia in ventral view: Fig. 6.




Figs. 1-6. 1-2, 4-6: *Sphex (Isodontia) boninensis* sp. nov.
3: *Sphex (Isodontia) pempuchi* Tsuneki. 1-3, ♀; 4-6, ♂.
1, 4: Apical margin of clypeus. 2, 3: Petiole of abdomen in lateral view. 5: Tyloidea and rhynaria on the flagellar joints of antnna (numerals indicate the No. from base). 6: Genitalia seen from beneath.

Holotype: ♀, the Ogasawaras (the Bonin Is.): Chichidzima Is., 17. VIII. 1972, Y. Haneda leg. (Coll. Haneda).

Paratype: 1 ♂, the same place and time, leg. Y. Haneda (do.).

*Remarks.* I thought at first that the specimens may be the adventive wasps from U. S. A. during the occupation, casually introduced with the military stoff.

So I studied comparatively the congeners of this country. *Isodontia elegans* (Smith) was similar in the facial pilosity to the present specimens, but it differed from this at least in the colouration of the mandibles, legs and abdomen and no other was identical with the present species.

By the finding of the present species the number of the members of the subgenus *Isodontia* occurring in the domain of Japan reaches 4, namely, *S. nigellus* Smith, *harmandi* Pérez, *maidli* Yasumatsu and *boninensis* m.

### 2. *Sceliphron bengalense* (Dahlbom, 1845)

*Sceliphron bengalense*: Tsuneki, Etizenia, 26: 8, 1967; Ibid., 53: 7, 1971.

*Specimen examined:* 1 ♂, the Ryukyus (Okinawa: Naha), 9. VIII. 1972. T. Nambu leg.

*Remarks.* The first record from the domain of Japan.

### 3. *Bembix formosana* Bischoff, 1913

*Bembix formosana*: Tsuneki, Etizenia, 31: 6, 1968; Ibid., 56: 5, 1971.

*Specimen observed:* 1 ♀, the Ryukyus (Is. Ishigaki: Ishigaki), 18. VIII. 1972, T. Nambu leg.

*Remarks.* This is the first record of the species from the district other than Formosa. According to the private communication of Mr. T. Nambu he could collect 8 ♀ 4 ♂ specimens at the same place.

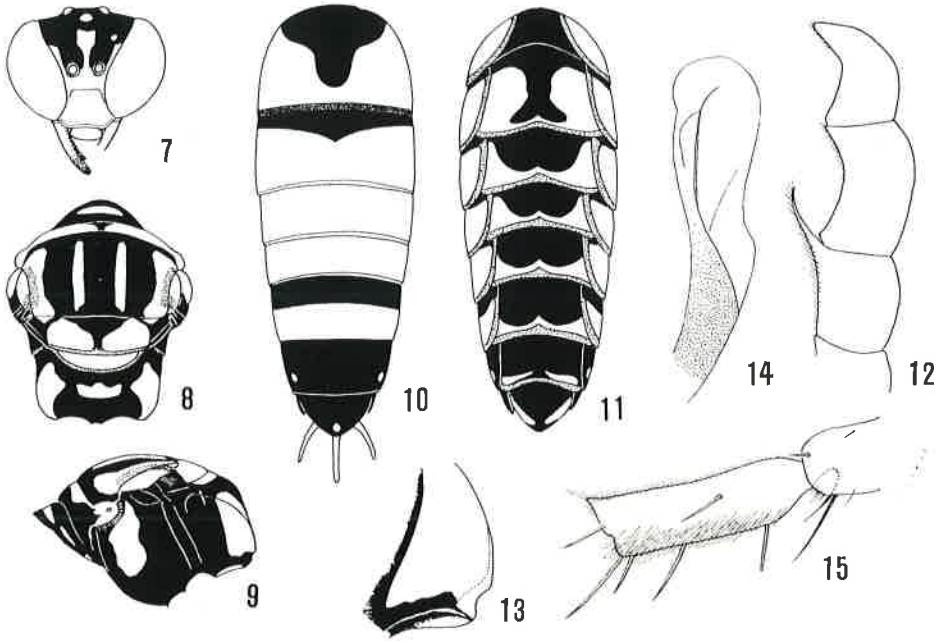
### 4. *Bembecinus nambui* sp. nov.

This species belongs to the group of *tridens* and has the trapeziform 2nd cubital cell of the fore wings. According to the literature it seems somewhat similar to *B. borneanus* (Cameron), but is different from this in the ocular index and in the general maculation of the body. The body of the present species is gorgeously yellow maculated and in this respect somewhat similar to *B. lateralis* (Cameron) from India, but tha maculation differs somewhat in pattern and much richer in the present species and the body is larger.

♂. Length about 9 mm; black, with the body pale yellow maculated as given in Figs. 7-11. Yellow on appendages: Antennal joint 1 except upper side, 2 beneath (from 3 apically completely black), coxae in front and at apex, trochanters beneath, fore and middle femora except above, hind femora beneath, fore and middle tibiae except a patch on inside, hind tibiae except base and apical half behind, fore and middle tarsi except arolia and hind tarsi except dorsal side. Wings hyaline, costa and subcosta largely black, other veins dark brown to brown.

Head seen in front: Fig 7, IOD at vertex (maximum) and at base of clypeus (minimum) 49:19 (proportion 2.58, the ocular index of van der Vecht), length of clypeus in middle 18 (its proportion to minimum IOD: 0.97), relative length of antennal joints 3-7: 13, 11, 10.5, 10, 9.5, their proportion to the width at each apex: 2.2, 1.8, 1.7, 1.5 and 1.3, in this respect the species differs distinctly from the *hungaricus*-subgroup and also from the *tridens*-subgroup; apical 3 joints: Fig 12, latero-posterior incision of propodeum seen from the side: Fig. 13, its marginal part thoroughly thin

and semitransparent (in the figure enclosed with dotted line), apical spines of abdomen long, gradually attenuate apically and ended in rounded apex; left paramere of genitalia seen from above: Fig 14, fore metatarsus comparatively narrow and long, about 3.7 times as long as wide at apex (Fig. 15).




Figs. 7-15. *Bembecinus nambui* sp. nov., ♂.
7-11: Maculation on the parts of body (9, thorax in lateral view; 11 abdomen seen from beneath). 12: Three apical joints of antenna. 13: Postero-lateral incision of propodeum in lateral wiew. 14: Left paramere of genitalia in dorsal view. 15: Fore metatarsus.

Oculocellar area broadly and around anterior ocellus without puncture, rest of vertex and upper frons sparsely scattered with fine distinct punctures, punctures on mesonotum arranged in irregular transverse rows, each puncture posteriorly shallower and indistinct in outline, on mesopleuron arranged mainly in oblique rows, more distinct and sparse posteriorly, metapleuron and anterior part of the sides of propodeum impunctate, but not polished, the impunctate area at base of area dorsalis as large as metanotum; the 7th sternite covered with irregular-sized punctures, on the areas of fine punctuation the punctures close, medianly without the shining carina, only medio-anteriorly a very short impunctate area present, not elevated.

Holotype: ♂, the Ryukyus (the Yoron: Chabana), 6. VIII. 1972, T. Nambu leg. (coll. Nambu).

*Remarks.* The figures of the abdomen was drawn in its extended condition. It seems probable that when the segments are well contracted the abdomen is from the apex of tergite 1 to tergite 5 apparently wholly yellow. Possibly also tergites 3 and 4 are black at each extreme base. When the abdomen is strongly extended, therefore, it will appear to be broadly 5-banded with yellow.

### 5. The male of *Argogorytes nipponis* Tsuneki

The male remains unknown. The specimen newly discovered is similar to *A.*

*mistaceus grandis* Guss., but differs from this in the following characters:

**Face** narrower and longer, length (between anterior margins of anterior ocellus and of clypeus) to width (at the emarginanions of inner orbits) relatively 54 : 43 (1.26; in *grandis* 1.12). **Clypeus** with medial part of anterior margin narrower, about half as long as lateral part and not incrassate nor reflected, in the compared species medial part about 2/3 as long as lateral part and distinctly incrassate and reflected; further, the lateral part in *nipponis* strongly bent posteriorly (nearly 90°) and forms a distinct under surface, in *m. grandis* the lateral part not so strongly bent (about 120°, the surface directed obliquely downwards). **Antennal** joint 3 in narrowest view about twice as long as wide at apex, the following joints also relatively slightly shorter, joints 3–6 with tyloidea, on 6 only on basal half and all the flagellar joints distinctly curved and markedly rounded out beneath; in *m. grandis* joint 3 about 2.5 times as long as broad at apex, joints 3–9 bluntly carinated* and apical 4–5 joints only slightly curved. **Propodeum** with area dorsalis more distinctly margined by the deeper furrow (or more distinctly raised above the surrounding areas) which is crossed by the oblique carinae, posterior inclination except the medial furrowed area bordered above by the zigzag carina, area dorsalis longitudinally, much more coarsely than in *m. grandis* rugoso-striate; in this subspecies the elevation of area dorsalis considerable, but the marginal depression not so distinct as in *nipponis* and anteriorly much shallower, posterior inclination without the bordering carina above and the area dorsalis more finely striate. **The second sternite** generally more finely and weakly punctured, with scattered large punctures on anterior portion much less in number than in *m. grandis*. **Punctures** on head above and mesothorax much finer, weaker and sparser, especially on mesopleuron markedly sparse. **Hair** generally finer and shorter, the surface better visible accordingly.

*Remarks.* Clypeus with two large lateral yellow marks, collar of pronotum with an evanescent yellow line medianly interrupted (possibly variable), lateral marks on tergite 1, apical bands on tergites 2 and 3, both narrowly interrupted in middle, yellow. Mandibles thick and stout, lateral parts of the anterior margin of clypeus at the edge of the outer half provided with a lunate semitransparent lamella which is in *m. grandis* opaque and less distinct, the medial part roundly emarginate at apex.

Specimen examined: 1 ♂, Ishikawa Pref. (Mt. Haku), 10. VII. 1971, I. Togashi leg. (the compared specimen of *A. m. grandis:* 1 ♂, Kyushu (Sugamuta), 14. IV. 1951, M. Yano leg.).

### 6. *Tachysphex nambui* sp. nov.

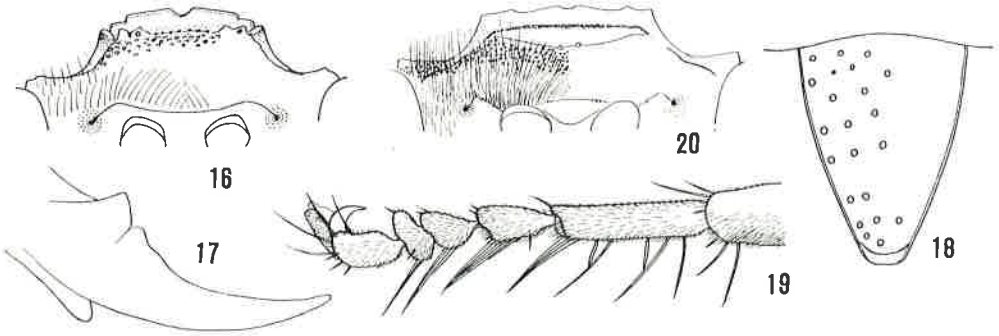
Closely resembles *T. bengalensis japonicus*, differs from it, however, in the structure of the clypeus, pygidial area and the fore legs and also in the punctuation on the head and thorax.

♀. Length 9 mm. Black; mandibles towards middle reddish, palpi dark brown, tegulae dark brown, with posterior half transparent, letting the pale brown plate at the extreme base of the wing well visible, tibial spurs and spines of legs brown to dark brown, the latter apically paler.

Head from above with interocular distance approximately equal to the length of

* "No carina on any joint" in my first description is erroneous, due to dirt.

antennal joints 2 and 3 taken together, the hollow at the centre as in *b. japonicus*, but the hollow with the more distinct Y-shaped impressed lines at the bottom, the posterior branch of which is not extended on to the posterior elevation, ocellar area gently roundly raised, with the medial furrow deep and distinct, ratio of interoculer distances at vertex and at lateral base of clypeus (minimum there) 16:43 (=1:2.8), length between anterior margins of anterior ocellus and of clypeus relatively 50, upper frons in front of anterior ocellus shortly impressed and much longer so above middle of interantennal area, but the two impressed lines not connected with each other (in *b. japonicus* not interrrupted), clypeus: Fig. 16, marginal area comparatively broad and the gently rounded disc suddenly depressed in front, no bevelled area between them, the teeth on inner margin of mandible (Fig. 17) better developed than in *b. japonicus*, antennal joint 3 approximately 2.5 time as long as broad at apex, on mesonotum prescutal sutures in a pair of slightly impressed, comparatively broad lines, the median scutal lines in a pair of slightly raised lines, both extended posteriorly till a 3rd from base and the latter slightly divergent apically, axillar parts of scutellum larger than in *bengalensis*, hence scutellum appears much broader than in this; pygidial area (Fig. 18) broader than in the compared species, with the surface flattened, only very gently roundly raised on basal area and with the marginal lines finely carinated; venation normal, tibial spurs longer, those of middle legs as long as the metatarsus and the longer one of the hind legs distinctly longer than the following metatarsus, tarsal bristles of fore leg (Fig. 19) shorter, dark brown, those of apical portion of each joint gathered together at the apex into a bundle, those of joint 4 consisted of 2 bristles only, spines of middle tibia thicker, stronger and slightly more in number (in anterior row 4, in middle 5 and in posterior 5, in *bengalensis* usually 4 or 3, 4 and 4 respectively) and more concentrated on apical half of the segment, the segment itself slightly thicker than in *bengalensis*, in posterior view distinctly spindle-shaped (in this species not), the same is also true with hind tibiae.




Figs. 16-20. 16-19: *Tachysphex nambui* sp. nov., ♀. 20: *Tachysphex bengalensis japonicus* Iwata, var. (from Is. Okinoerabu), ♀.
16, 20: Clypeus. 17: Mandible. 18: Pygidial area. 19: Fore tarsus.

Punctures on vertex and frons finer than in *b. japonicus*, nearly as fine as in *b. yaeyamanus*, but much sparser, markedly shallower and weaker than in this, with intervals very delicately coriaceous, not appearing microgranulate as in *bengalensis*, punctures on thorax as large as in this species, but much sparser and weaker, with

the averaged intervals on the disc of mesonotum and mesopleuron as large as punctures, metapleuron on uppermost area longitudinally striate, sculpture of median segment may considerably be varied, in the specimen longitudinally (on the lateral areas slightly obliquely), finely, closely and somewhat rugosely striate, interspaces of the striae irregularly or incompletely sectioned into an irregular network, the longitudinal rows of the striae much more extended posteriorly than in *bengalensis*, posterior aspect transversely and moderately closely striate, with scattered punctures on the interspaces, without the particularly highly raised transverse carina on upper edge, there is also no zone of coarse network above the craina which is very frequently met with in *bengalensis*, sides of the segment longitudinally, finely, closely striate, the striae anteriorly slightly sparser; pygidial area sparsely scattered with medium-sized punctures, with a few micropoints between, the triangularly impressed part of sternite 1 medianly longitudinally carinate, sterinite 2 with four large hair-bearing punctures on anteapical area, six such punctures on each apical margin of sternites 3–5.

♂, unknown.

Holotype: ♀, the Ryukyus (Is. Iriomote: Komi), 11. VIII. 1972, T. Nambu leg. (Coll. Nambu).

### 7. Distribution of *Tachysphex bengalensis japonicus* in the Ryukyus

So far examined by me the specimens of *bengalensis* from the Is. of Amami-Ohshima and of Okinoerabu belong to the same subspecies as in the Japanese Hondo (4 main Islands), while those colllected on the Islands of Ishigaki and Iriomote belong to *T. b. yaeyamanus*. It is an interesting problem to which subspecies the specimens from the Okinawa belong. Judging from the fact that a specimen from the Okinoeradu is *japonicus* it seems fairly probable that they belong to this subspecies, because the Okinoerabu lies very close to the northern promontry of the Okinawa. In the specimen from the Okinoerabu the short carina in front of anterior ocellus is completely lacking, but the punctures on the head and thorax are, in distribution, size and the condition of the intervalic spaces, as in the specimens of the Japanese Hondo. In the form of the apical margin of the clypeus, however, the specimen is abnormal as given in Figure 20, which is very similar to the variational form found among the specimens of *T. b. yaeyamanus*.

In the recent monographic work of Dr. W. J. Pulawski *T. bengalensis japonicus* is dealt with as distinct. The reason mentioned by him is certainly correct. But, to me it seems that the description regarding the silvery hair bands on the abdomen of *T. bengalensis* is doubtful and there is a possibility that both are identical in this regard, as was formerly presumed by me. To my regret I have not been able to examine the Indian representative (not necessarily the type) of this species.

### 8. *Cerceris tokunosimana* sp. nov.

This species (based on ♂ only) belongs to the group having the well developed platform at the base of the 2nd sternite and is characteristic in the punctuation and maculation of the body. In the keys of Van der Vecht (1964) on the Javanese species it runs to No. 4 with a more or less inconsistency on the way and there runs out. In the key by Giner Mari (1943) on the Formosan species it is led to *formosicola*,

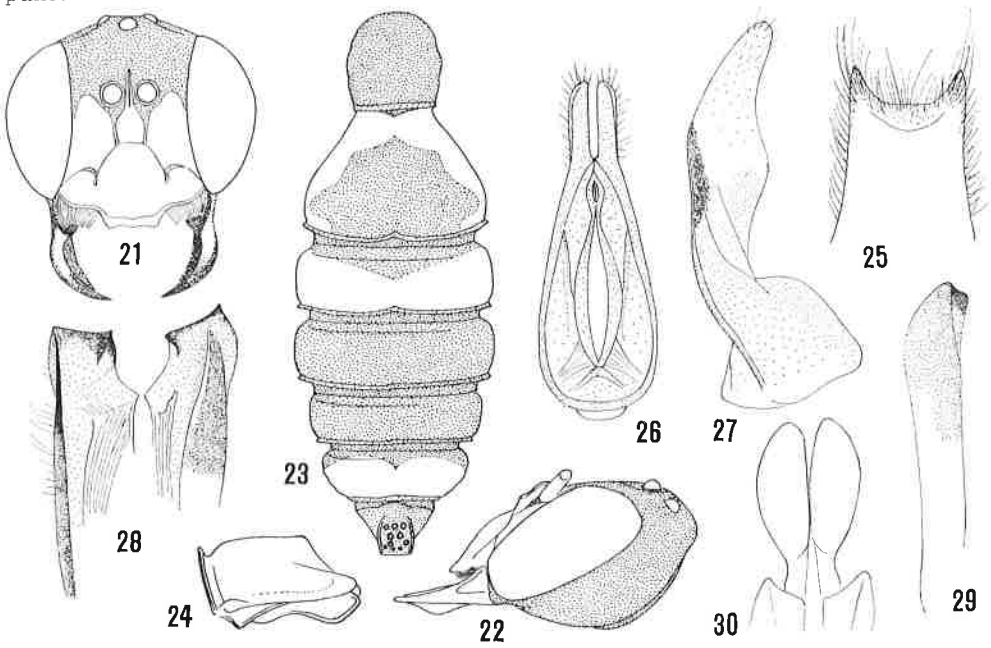
but the specimens are quite different from this. In the present species the hind coxal carina is weak and the area cordata is smooth and polished except the medial furrow.

♂. Length 9.5 mm. Black; maculae on face (Fig. 21) and propodeum lemon yellow and those on thorax and abdomen deep orange yellow; mandibles externally along the longitudinal median line till a third from apex brownish yellow, at base only pure yellow, a spot on antennal joint 1 in front and a line on joints 3–7 beneath ferruginous red, apically broader, darker and becoming indistinct, large lateral marks on collar, tegulae (with a transparent area from inside till centre and posteriorly brownish), postscutellum, large rounded marks on propodeum occupying the greater part of the area, marks on tergites 2, 3 and 6 (Fig. 23), a spot on each side of sternite 2 and a narrow band before apical margin of sternite 3 (much broadened at the sides) yellow. Fore and middle legs orange yellow and with following black: coxae, trochanters except a spot at apex beneath, basal 1/3 to 2/5 of femora; tarsi from apex of metatarsi brown to dark brown; hind legs black, with greater part of coxae, trochanters wholly lemon yellow and 3 scattered patches on femora apically beneath and tibiae except base and apex orange yellow. Wings hyaline, slightly smoky and radial cell and the antero-external corner broadly darkened.

Head seen in front: Fig. 21, with clypeal tomenta nearly golden; seen in profile: Fig. 22, mandible triangularly markedly produced beneath towards middle (do. ), antennae normal (as in the so-called *apiraptrix-group*, e. g. *hortivaga* or *japonica*), pronotum comparatively thick. as long in middle as POD and longer laterally, with the anterior margin medianly without carina and slightly depressed, and laterally distinctly carinated, the carinae acutely running down below as antero-lateral edges of the segment, scutellum slightly more than twice as broad as long, mesopleuron with scrobal furrow broad and deep, with epimeral area subconically raised seen from behind, episternal area below slightly behind middle transversely bluntly carinate, the carina meets with the other coming from mesocoxa and produced into a blunt tooth, area dorsalis enclosed by coarsely crenate furrows and medianly with a fine, deep and smooth groove. Tergite 1 nearly as long as wide, with dorsal side medioanteriorly bluntly produced (Fig. 24, lateral view), general feature of abdomen: Fig. 23, pygidial area about 1.5 times as long as wide, with apex truncate and with sides gently rounded out, platform on sternite 2 transverse, 1.5 times as wide as long, with apex gently rounded and reaching 2/5 of the incrassate part of the sternite, considerably highly raised and sharply margined at the apex, sternites 4, 5 and 6 with posterolateral angles roundly swollen, but not toothed on any of the segments, hypopygium: Fig. 25; genitalia in dorsal view: Fig. 26, paramere: Fig. 27, volsella from inside (cut open): Fig. 28, from beneath: Fig. 29, penis valve from beneath: Fig. 30. In fore leg the antero-lateral protuberance of coxa stronger than in *hortivaga*, rather similar to that of *japonica*, femora of fore and middle legs broadly swollen as in allied species, the longitudinal carina at the inside of hind coxa weak, but thorough and not difficult to observe.

Upper frons closely rugoso-subreticulate with medium-sized punctures, clypeus rather largely and closely longitudinally rugoso-punctate, punctures on vertex larger, partly rugose and partly sparse, on mesonotum larger and sparser on the disc, with intervals nearly as large as punctures and sparsely micropunctulate, scutellum on

anterior half punctured as on mesonotum, punctures posteriorly slightly finer and closer, mesopleuron on subalar epimeral area somewhat finely, on lower episternal area coarsely rugoso-reticulate, metanotum above longitudinally striate, propodeum except area dorsalis very coarsely reticulate, posteriorly and medianly with more or less puncture-intervals, on the anterior part of the sides obliquely and coarsely striate,




Figs. 21-30. *Cerceris tokunosimana* sp. nov., ♂.
21, 22: Head. 23: Abdomen. 24: Tergite 1 seen from right side. 25: Hypopygium. 26: Genitalia in dorsal view. 27: Paramere of genitalia in lateral view. 28: Volsella (cut open from beneath and seen from inside). 29: do., seen from beneath. 30: Penis valve.

punctures on tergites rather coarse, the largest ones are only slightly smaller than ocellus, on tergite 1 with more or less intervals, the intervals medianly larger, on tergite 2 similar, but intervals larger, on 3 punctures generally sparser and medianly slightly close, on 4, 5 and 6 as on black part of 2, pygidial area coarsely irregularly punctured, with intervals microcoriaceous; platform on sternite 2 impunctate, area behind platform longitudinally weakly but coarsely rugose. swollen parts of the following sternites rather finely and very sparsely punctured.

♀, unknown.

Holotype: ♂, the Ryukyus (Is. Tokunoshima: San), 1. VIII. 1972, T. Nambu leg.
Paratype: 1 ♂, the same place and time, T. Nambu leg. (Types Coll Nambu).

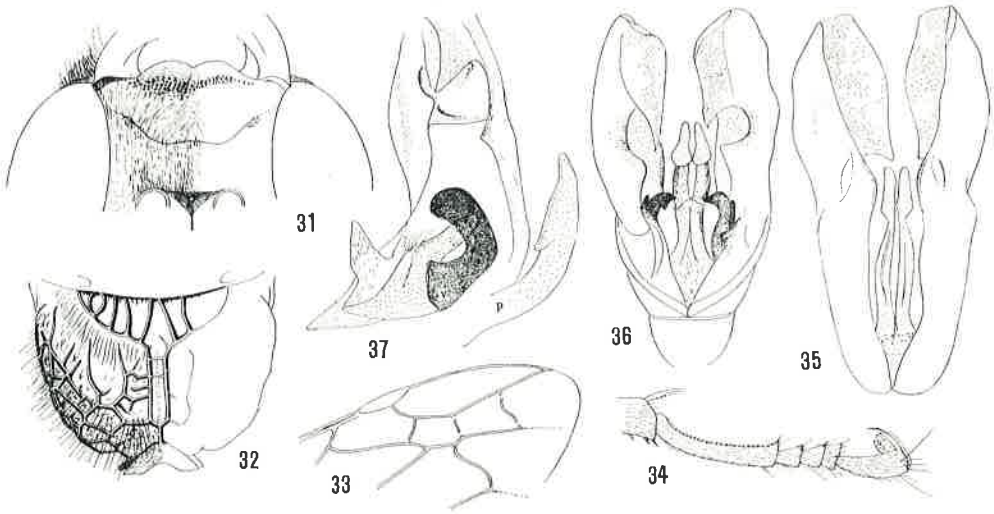
### 9. *Psen ohnonis* sp. nov.

The present species (♂) is apparently similar to *P. affinis* Gussakovskij, but the antennal joints are shorter and without the tyloidea, the 3rd and 4th sternites with a tuft of the hair on each apical margin in the middle and the two recurrent veins of the fore wings are received both by the 2nd cubital cell.

♂. Length 10 mm. Black, with a distinct aeneous shine on head and thorax. Mouth parts, fore tibiae in front and all tarsi ferruginous brown, articulations of

legs also brownish, antennal flagella beneath purplish brown, tegulae dark brown and semitransparent. Wings hyaline, stigma and veins brownish black. Hairing as usual, silvery, tuft of hair on sternites 3 and 4 long and well-defined.

Head seen from above with ocelli uniform and in a low isosceles triangle, OOD: POD=11:9, postocellus in relative width 4, the impressed line connecting the posterior margins of postocelli slightly broad and gently curved. Head seen in front with inner margins of eyes roundly curved inwards, relative length of IOD at anterior margins of postocelli, at lower margins of antennal sockets (minimum) and at outer bases of mandibles 39, 28 and 34, OAD ≒ WAS<IAD (approximately 6:9), transverse subantennal carina connecting lower margins of the sockets nearly straight (not curved near the ends as in *hakusanus* ♂), madianly slightly angulate and raised into a tooth, thence a weak carina runs upwards till anterior ocellus, clypeus: Fig. 31, medio-anterior impunctate part not reflected, mandibles not particularly broadened, with the width on outer aspect at base less than the medial length of clypeus, with apex acutely bidentate, anterior tooth shorter, antennal joint 1 incrassate, nearly half as broad as long, relative length of joints 3, 4, 5 and 6 about 15, 10, 9 and 9, thence very slightly reducing in length till penultimate joint, joint 3 approximately thrice, 7 about 1.5 times and 10 about 1.3 times as long as broad at apex (dorsal view), ultimate joint parallel and suddenly narrowed near apex and slightly less than twice as long as broad at base, flagellar joints slightly rounded out beneath, the summit being beyond middle; area dorsalis distinctly impressed, longitudinally coarsely carinate, with intervals polished and at the anterior margin of the encircling rim finely carinate, the so-called smooth areas narrow (Fig. 32), medial excavation of posterior aspect large, flatly inclined towards middle, with surface coarsely reticulate and with median line finely canaliculate; petiole of abdomen as long as hind trochanter and femur united, 5.5 times as long as wide in middle and slightly thicker posteriorly, it is roughly 4-carinated, with dorsal and ventral sides gently roundly elevated. Genitalia seen from above: Fig. 35, seen from beneath: Fig. 36, volsella and




Figs. 31-37. *Psen ohnonis* sp. nov., ♂.
31: Clypeus. 32: Propodeum. 33: Fore wing venation. 34: Middle matatarus. 35: Genitalia from above. 36: Do., from beneath. 37: Volsella (v) and penis (p) seen from inside.

penis seen from inside: Fig. 37; venation of fore wing at cubital cells: Fig. 33, nervulus antefurcal, D=1/3N, legs generally as in *affinis*, but fore and middle tarsal joints 2-4 much shorter (Fig. 34, in middle leg), when combined nearly as long as terminal joint, middle metatarsus at base distinctly curved (do.), longer tibial spur of hind leg as in *affinis*.

Punctures on vertex and upper frons distinctly stronger, larger and sparser than in *affinis*, with intervals 3-5 times (on central area of vertex) or 1-2 times (on upper frons) as large as punctures, punctures on mesonotum slightly larger than on vertex, slightly closer along scutal sutures and at sides, and larger and very sparse on the intervalic areas, scutellum very sparsely punctured, with medial area somewhat closely and finely punctured, mesopleuron very finely, weakly and very sparsely punctate, sculpture on propodeum: Fig. 31, petiole impunctate, highly polished, tergite 1 very finely and sparsely, 2 finely, sparsely but more closely than on 1 punctured, 3, 4 and 5 finely and basally closely, apically sparsely punctured, punctures on tergite 6 larger but very sparse.

♀, unknown.

Holotype: ♂, Fukui Pref. (Ohno: Hotokebara), 2. VIII. 1972, T. Haneda leg. (Coll. Haneda).

*Remarks.* The present species can easily be distinguished from the other closely allied species, *P. hakusanus* in that the antennal flagellum is without the tyloidea and the punctures on the head and thorax are much sparser.

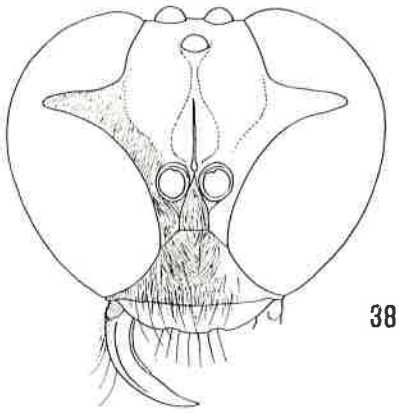
### 10. *Trypoxylon isigakiense* sp. nov.

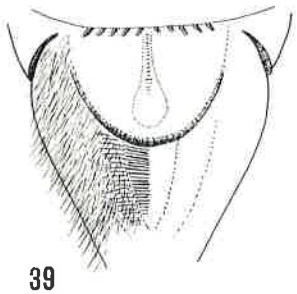
Apparently very similar to *T. gracilescens* Smith, but the antennal joints relatively somewhat shorter and on apical portion much thicker and the legs with the blackish areas much broader.

♀. Length 12.0 mm. Black, abdomen from apex of petiole apically wholly ferruginous red; pale ferruginous or pale ambur-yellow: Apical flattened area of clypeus, mandibles except the extreme apex, greater part of fore and middle legs (brownish black: base of coxae, apical two thirds above and apical third or half beneath of femora, both indistinctly outlined and connected with each other near apex, an elongate patch on fore tibiae externally, middle tibiae on outside and behind, middle tarsi above from apex of metatarsus apically; knees ambur yellow and arolia black) and small part of hind legs (ferruginous: apices of coxae, trochanters wholly, base and apex of femora, base of tibiae and tarsi partly beneath); antennal joint 1 wholly and 2 beneath pale brownish white, flagellum beneath ferruginous; humeral tubercles ivory white; wings hyaline, apically slightly clouded, stigma and veins dark brown. Hairing normal, silvery, on eye incisions and clypeus dense and appressed, on mesopleuron not so close as in *obsonator*.

Head seen from above with ocelli in an equilateral triangle, the anterior smaller than the posterior, OOD:POD=1:2, frontal furrow deep, on both sides upper frons distinctly raised, head seen in front: Fig. 38, very similar to that of *gracilescens*, IOD at vertex and at base of clypeus relatively 17:12 (≒3:2), supraantennal elevation nose-shape, moderately high and longitudinally carinated above, clypeus medianly gently roundly raised, with ambur-coloured marginal area broad and distinctly reflected, mandible with a minute notch on inner margin slightly before middle,

antennal joints comparatively shorter than in *gracilescens* and appear much thicker apically, relative length to width at apex of joints 3, 7 and 10 is 32/7, 12/8, 11/9 (= 4.6, 1.5, 1.2), in the compared species 37/7, 17/8, 14/9 (=5.3, 2.1, 1.6), pronotum as in this species, medianly raised in a blunt triangle and distinctly furrowed across middle, with the posterior part discoloured and in some light pale yellow, propodeum (Fig. 39) also as in the compared species, but area dorsalis more distinctly marginated by the furrow, the furrow weaker anteriorly, median impressed area weakly crenate; petiole long, slightly more than 6 times as long as the greatest width before apex and 18 times as long as the smallest width, stigmata at a fifth from base. Legs normal, the longer tibial spur of hind leg suddenly bent towards middle, venation of wings normal, radial cell not reaching apex, but approaching considerably.




Figs. 38-39. *Trypoxylon isigakiense* sp. nov., ♀.
38: Head seen in front. 39: Propodeum.

In punctuation similar to *gracilescens*, upper frons finely, weakly, moderately sparsely punctured, with intervals microgranulate, mesonotum more finely, weakly and sparsely punctured, well shining, propodeum with aera dorsalis at base crenate and on disc impunctate, posterior aspect with median furrow broad and deep and closely transversly striate, the lateral longitudinal carinae distinct, but not strong, sides of the segment smooth and fairly polished, with scattered fine punctures on posterior half.

♂, unknown.

Holotype: ♀, the Ryukyus (Is. Ishigaki: Mt. Omoto), 14. VIII. 1972, T. Nambu leg. (Coll. Nambu).

*Remarks.* This species may be a geographical race of *T. gracilescens* Sm. Judging from the difference in the relative length of the antennal ioints, however, it seems better to deal with it as a distinct species.

### 11. *Trypoxylon chichidzimaense* sp. nov.

Amongst the known species of Japan *T. obsonator* Smith is most closely allied to the present species, as far as the female is concerned. But the two species differ from each other in many respects and the separation of the one from the other is not difficult: *T. chichidzimaense* is generally much smaller in body size, in this species the clypeus is medianly produced anteriorly and notched in the middle, antennae, legs except the fore tarsi in part and the abdomen nearly wholly black and the area

dorsalis more distinctly marked off by the enclosing furrow.

♀. Length 10.5–11 mm. Black, thorax and propodeum with a strong bronzy shade; mandibles ferruginous with extreme base narrowly black and apical half reddish and extreme apex and inner margin dark red; hairless anterior margin of clypeus medianly honey yellow and laterally slightly darker, flagellum apically beneath somewhat purplish dark brown, tegulae transparent ferruginous, through which the whitish mark at base of the wing well defined, apical margins of the abdominal tergites and articulaions of legs more or less ferruginous, fore tibiae slightly brownish, fore and middle tibial spurs and fore tarsi except dark brown dorsal side of joints 1–3, claws and arolia ferruginous, middle and hind tarsi beneath slightly ferruginous; wings somewhat clouded, strongly so on apical margin.

Head from above with ocelli in an equilateral triangle, the anterior slightly smaller, OOD : POD = 1 : 2, width of postocellus relatively 3, frontal furrow broad, not deep, with the lateral areas gently roundly swollen, supraantennal elevation tubercle-formed and medianly longitudinally carinated, the carina short, broad and shining, the shining area further extended flattly upwards, IOD at vertex and at base of clypeus relatively 8:7, the former as long as antennal joint 3, clypeus: Fig. 40, at base gently roundly elevated, the elevation longitudinally weakly continued up to the apical bare area which is slightly reflected and medio-apically weakly bilobed, with the extreme anterior margin slightly incrassate, mandibles normal, antennal joint 3 4-times, 5 thrice and 10 about 1.7 times as long as broad at each apex, collar of pronotum transversely furrowed across middle, posterior area discoloured and appears in some light pale ferruginous, area dorsalis gently roundly raised, with marginal furrow distinct, but not deep, with medial furrow comparatively deep and broad, and broadly enlarged posteriorly, reaching almost apical margin, median furrow of posterior inclination very deep and broad, in a cross section triangular, abdominal petiole slender and long, parallel-sided except the apical swelling, its length, minimum and maximum width relatively 85, 6 and 15, fore metatarsus as long as the following 3 joints taken together, in fore wing radial cell long, longer than hind tibia (relatively 65:55) and reaching near the apical margin as in *malaisei*, nervulus markedly antefurcal, D 2–2.5 times as long as N.

Punctures on upper frons slightly large, sparse, averaged intervals about thrice as long as the diameter of the puncture and the surface filled with distinct microgranulation, on vertex punctures slightly smaller and closer, microsculpture on the interspaces weaker, on mesonotum, scutellum and mesopleuron punctures finer, sparse, microsculpture very weak, weaker on the last two, hence the areas well shining, metapleuron and area dorsalis smooth and polished, the latter at base longitudinally shortly striate and with the lateral furrows finely crenate, medial impression transversely, finely and closely striate, sides of the segment anteriorly smooth and polished and posteriorly sparsely but distinctly punctured.

♂, unknown.

Holotype: ♀, the Bonin Islands (Is. Chichidzima), 16, VIII. 1972, Y. Haneda leg.

Paratype: 1 ♀, the same data. (Types in Coll. Haneda).

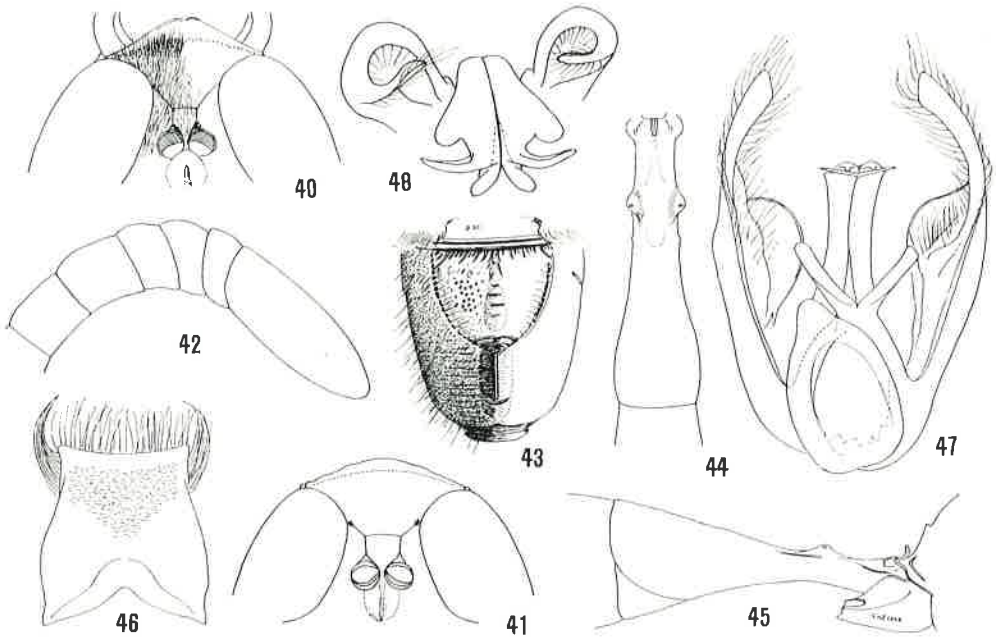
### 12. *Trypoxylon saitamaense* sp. nov.

Belonging to the group having the ferruginous coloured fore legs and charac-

teristic in having the strikingly well produced stigmata of the abdominal petiole, the long and not curved ultimate antennal joint and the large cordiform area dorsalis. The form of the abdominal petiole in both dorsal and lateral views is also distinctive.

♂. Length 8 mm. Black; extreme base of the abdominal segments 2 and 3 ferruginous red, the colour considerably broadly extended towards venter; ferruginous are mandible except reddish brown apex, base and apex of antennal joint 1, 2 beneath, 3 narrowly and obscurely beneath, coxae at apex, both ends of fore trochanters, mid and hind trochanters except above, base and apex of all femora (in hind femora very narrowly) and of mid and hind tibiae, fore tibiae except inside and subapical area, fore tarsi wholly and both ends of all tarsal joints, but arolia black; collar of pronotum posteriorly discoloured, appearing brownish. Hairing as usual.

Ocelli in an equilateral triangle, all equal in size, each in a distinct hollow, with the direct surrounding area impressed and the space between them raised, OOD: POD=5:8, POD equal to the diameter of ocellus, frontal furrow comparatively broad and deep, with lateral areas roundly swollen, supraantennal tubercle somewhat longitudinally elongated, rounded, and topped by a glittering line, not distinctly nose-form, upper edges of antennal sockets highly raised, the proportion of interocular distance at vertex and at base of clypeus 17:12 (= 3:2), the form of clypeus and supraclypeal area: Fig. 41, clypeus at base roundly elevated and then along the median line bluntly raised, with the apical marginal area slightly reflected, relative length of antennal joints 3, 4 and 5 approximately 7, 4 and 4 (in the other antenna 8, 4 and 4), joint 3 about thrice, 4 about 1.5 times as long as wide at each apex, ultimate joint: Fig. 42, as long as 4 preceding joints combined and not curved at apex;




Figs. 40-48. 40: *Trypoxylon chichidzimaense* sp. nov, ♀.
41-48: *Trypoxylon saitamaense* sp. nov., ♂.
40, 41: Lower part of face, including clypeus. 42: Apical portion of antenna. 43: Propodeum. 44: Petiole of abdomen. 45: Do., in lateral view. 46: Hypopygium. 47: Genitalia from beneath. 48: Do., from apex.

collar distinctly transversely furrowed across middle, anterior part medianly and laterally incrassate, without median furrow and with sides rounded; area dorsalis on propodeum: Fig. 43, median furrow comparatively deep and posteriorly enlarged, with lateral margins distinctly outlined, medial valley of posterior inclination deep and narrow, but posteriorly slightly shallower and broader, on the average much deeper than in most of the congeners, with the bottom in a glittering line. Petiole of abdomen in dorsal and lateral view: Figs. 44 and 45, genitalia seen from beneath: Fig. 47, 8th sternite: Fig. 45, wing venation and legs normal.

Punctures on upper frons and vertex fine and close, with interspaces smaller than punctures and microcoriaceous, the size and strength of the sculpture seem to be intermediate between those of *T. nipponicum* and *sapporoense* (ref. the account in the following section), mesonotum finely, rather sparsely punctured, with intervals 1–3 times as large as punctures and more weakly and delicately than on upper frons microcoriaceous, punctures sparser on the central area and closer on peripheral areas, scutellum more finely and more sparsely punctured, with interspaces without microsculpture, shining, mesopleuron finely and very sparsely punctured, metapleuron smooth and polished; area dorsalis at base shortly, longitudinally partly obliquely, striate, medial furrow transversely striate, the striae posteriorly weaker, dics finely, moderately closely punctured, maginal furrow very sparsely crenate, the crenae extended on to the marginal areas of the disc; punctures on abdomen generally normal, tergite 1 on anterior 2/3 almost completely impunctate, shining.

♀, unknown.

Holotype: ♂, Saitama Pref. (Kohnosu), 7. VI. 1972, T. Nambu leg. (Coll. Nambu)

### 13. Difference between the males of *Trypoxylon sapporoense* and the closely resembling species

**A. *T. nipponicum* Tsuneki**

In *nip.* the ultimate antennal segment (Fig. 49) amply thrice as long as broad at base, with apex slightly curved, in *sap.* only 2.5 time so and not curved at apex (Fig. 50). Punctures on upper frons in *nip.* large, strong, distinct, with granules filling the interspaces larger, well-defined under 32× magnification; in *sap.* finer, weaker, rather indistinct, with interspace-granules much finer and indistinct under the same magnification. Punctures on mesonotum in *nip.* sparser, on the disc interspaces distinctly larger than punctures and very weakly coriaceous, the surface fairly shining; in *sap.* punctures closer, with interspaces smaller than puncture and more distinctly granulate, the surface dull and opaque, on the central area the punctures subreticulate, punctures on mesopleuron in *nip.* slightly larger than on mesonotum and sparse, the surface shining; in *sap.* distinctly larger than on mesonotum and distinctly sparser (but closer than in *nip.*), intervals a little glossy, but not so strongly shining as in *nip.* In *nip.* fore tibia frequently brown to ferruginous in front and fore tarsus usually variegated with pale brown or brownish white; in *sap.* fore tibia black and tarsi only apically dark brown to brown. Petiole in *nip.* 6.5–7.0 times as long as broad before apex (maximum width), in *sap.* 3.3–3.8 times as long as broad, usually in the former completely petiolate, but in the latter subpetiolate and the parallel part very short.

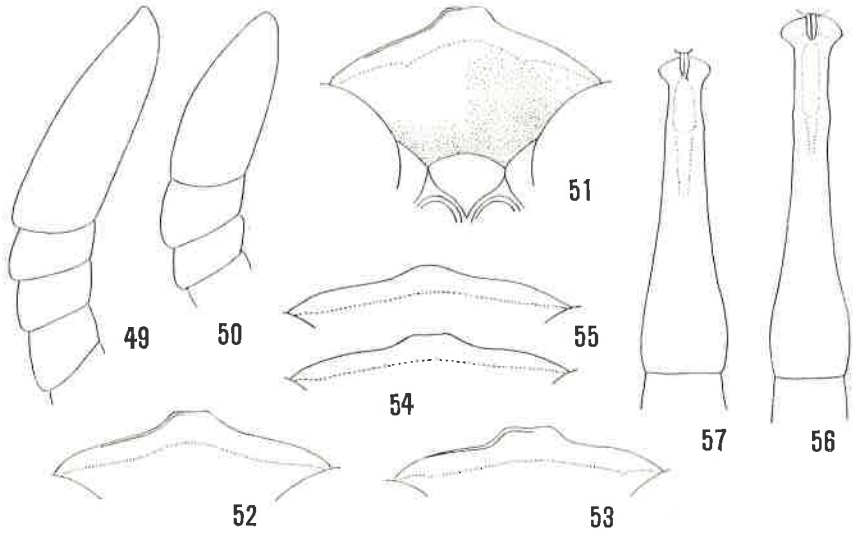
**B. *T. pennsylvanicum japonense* Tsuneki**

In some specimens of this species the 1st segment of the abdomen is slightly longer than usual and slightly petioliformed. In such a case the specimen appears quite close to *sapporoense*. In close examination, however. it is easily revealed that in *p. jap.* the clypeus is medianly bluntly bidentate, the ultimate joint of the antennae is as long as the 3 preceding joints united, supraantennal tubercle is distinctly nose-shaped and the punctures on the mesothorax weaker and more indistinct. In *sap.* the clypeus is not incised on anterior margin, the ultimae joint of the antenna nearly as long as 4 preceding joints taken together, the supraantennal tubercle rounded and the punctures on the mesothorax comparatively stronger.

### 14. The female of *Trypoxylon sapporoense* Tsuneki

Since my first capture of the probable female of T. *sapporoense* m. in Fukui Prefecture 7 females of the same form have been collected in this province. But, as no male has been obtained from the same locality I have hesitated to combine the specimens with the known male of *sapporoense* as the other sex, because both the localities are remotely separated from each other. Recently, however, a male collected in Kanagawa Prefecture, near Tokyo, was identified by Mr. T. Nambu who possessed some specimens of the male of *sapporoense* with this species. He further sent a specimen to me for investigation which he considered to be the female of *sapporoense*. It was just the same form as those possessed by me. So I reexamined them in detail in comparison with the types of *sapporoense* with the conclusion that there is no definite opposing reason to combine the two sex groups together.

♀. Length 8.5-10.0 mm. Differing from the male in the following distinctions except the sexual characters: Mandibles usually more broadly reddish ferruginous, the black confined to a basal third only, occasionally extended till about middle as in ♂. Clypeus more markedly produced on anterior margin in middle as given in Figs.




Figs. 49-57. 49: *Trypoxylon nipponicum* Tsuneki, ♂.
50-57: *Trypoxylon sapporoense* Tsuneki, 51-53, 56-57: ♀; 50, 54, 55: ♂.
49, 50: Apical portion of antenna. 51: Clypeus. 52-55: Anterior margin of clypeus.
56, 57: Petiole of abdomen.

51 and 53 (in ♂ the form more or less variable, sometimes produced as in ♀, but in lesser degrees —Fig. 54—, usually as in Fig. 55). The first segment of abdomen generally more petioliformed, that is to say, having the parallel-sided part much longer and more distinct (Fig 56), but sometimes, though rather rarely (1 out of 8) it is similar to that of the male (Fig. 57).

Description on some characters: Antenna with relative length of joints 3. 4, 5, 11 and 12: 23, 18, 13, 10 and 20, joint 3 approximately 4 times as long as broad at apex, 11 nearly as long as broad. Interocular distance at vertex and at base of clypeus 18.2 : 12.4 (average of 8 specimens, ÷ 3 : 2, as in ♂). Supraclypeal area pentagonal as in ♂, clypeus raised as in ♂, mandible with a small notch on inner margin before middle. Punctuation as in ♂, see the note on the comparison of *sapporoense* ♂ and *nipponicum* ♂; sculpture on dorsal area of propodeum also similar (the area posteriorly more or less distinctly enclosed by a shallow furrow which becomes shallower and indistinct anteriorly, the degrees of forward extention of the furrow varied with the individual, at the apex of the area dorsalis the medial furrow of posterior inclination suddenly and deeply excavated and the border of the dorsal area becomes as much distinct, the disc medianly longitudinally shallowly impressed, the impression posteriorly enlarged, at base the disc longitudinally, partly obliquely carinate, rest of the disc, together with the medial impression, transversely, finely and closely striate).

Specimens examined: 1 ♀, Arashi (700 m), 11. IX. 1963; 1 ♀, Mt. Ifuri, 28. VIII. 1964, Y. Haneda leg.; 1 ♀, Mt. Ifuri (at about 800 m), 3. IX. 1972; 1 ♀, Taniyama, 2, VIII 1964, Y. Haneda leg.; 3 ♀, Taniyama (at about 500-600 m), 1. X. 1972; 1 ♀, Saitama Pref. (Chichibu), 30. IX. 1972, T. Nambu leg. (unless otherwise stated the locality is Fukui Pref. and the collector is myself).

*Remarks*. The female of the present species differs from the somewhat resembling European congener, *T. figulus*, a subspecies of which occurs also in this country, in the following points: The difference between IODs at vertex and at base of clypeus is much greater; the first segment of the abdomen is relatively much slender and longer, subpetiolate and the head and the thorax are more opaque, lustreless, with the punctuation different in pattern.

### 15. *Pison hanedai* sp. nov.

This species (♂) is closely allied to *P. oakleyi* Krombein known from the Marianas, having the mesopleuron well shining even under the 64× magnification, without showing the delicate network of fine impressed lines between the punctures. Especially ssp. *rotaense* Tsuneki is very similar to the present species even in the punctuation on the frons and in the sculpture at the posterior margin of the mesonotum and on the propodeum. In the present species, however, the clypeus is different in form and the 3rd sternite is not provided with a tubercle, but with a transverse fine ridge across the middle which is long enough to cover the greater part of the sternite except the sides. Vertex very finely and closely punctured, with intervalic carinae complicately crossed by delicate fine impressed lines (Fig. 65, under 64× magnfication), hence the surface appears under low power finely granulate as a whole; frons very minutely, strongly coriaceous, without interposed puncture,

hence literally granulate (Fig. 66). These characters also enable us to separate the present species from the other closely allied congener, *P. iridipenne* Smith.

♂. Length 5 mm. Black; mandibles except extreme base and apex ferruginous red, glossy, with marginal areas slightly darkened, palpi brown, clypeus at the medio-apical bare area honey yellow, tegulae transparent ferruginous, fore tibiae in front, all tibial spurs, spines of fore tarsal joints and ultimate joint nearly wholly ferruginous, articulations of each segment of legs more or less brownish; wings feebly clouded, with apical margin darker. Appressed silvery pubescence on frons, clypeus, temples, collar, posterior margin of tubercles and mesopleuron dense and when well shining obscures the punctuation, but when placed against the light punctures on the ground surface easily visible; the hair on propodeum except greater part of area dorsalis and anterior part of the sides also considerably dense, pubescence band on tergites 1-3 (4?, indistinct due to dirt) and vestiture on coxae in front and femora behind close and silvery.

Head seen from above with postocellar furrow deep and distinct, ocelli in an equilateral triangle and uniform in size, OOD≒POD, width of ocellus slightly larger than POD, frontal furrow not deep, but well-defined as a fine glittering line which is extended posteriorly on to the ocellar area and anteriorly to the small, slightly elongate and glittering tubercle or very short carina a little above the interantennal space, having a similar weak tubercle half way to it, ratio of IOD at vertex and at lateral bases of clypeus 6:7, clypeus: Fig. 58, mandible with an incision on inner margin towards middle, OAD:WAS:IAD = 4.5:4:4, eye incision comparatively shallow, broadly rounded at apex (Fig 59); head in profile: Fig. 60, frontal elevation comparatively gentle and the temple subparallel; antennal joint 3 slightly shorter than 4, 4 and 5 subequal in length, 3 approximately 1.8 times, 4 twice as long as wide at each apex, flagellar joints simple; mesonotum on posterior margin strongly and coarsely crenate, scuto-scutellar furrow more finely crenulate, area dorsalis not distinctly marked off, but defined by the marginal depression and difference of pilosity and sculpture, medianly longitudinally, broadly and shallowly impressed, the impression provided with a fine carina in middle, lateral carinae of dorsal and posterior aspects strong, reaching anteriorly near the stigmata, median hollow of posterior aspect deep, longitudinally finely furrowed in middle; abdominal tergites 1 and 2, as usually the case, constricted between them, hypopygium: Fig. 61 (the piece taken out and seen from above), genitalia in dorsal and lateral views: Figs. 63 and 64*. Venation of fore wing: Fig. 62, note the position of the upper end of recurrent vein 2.

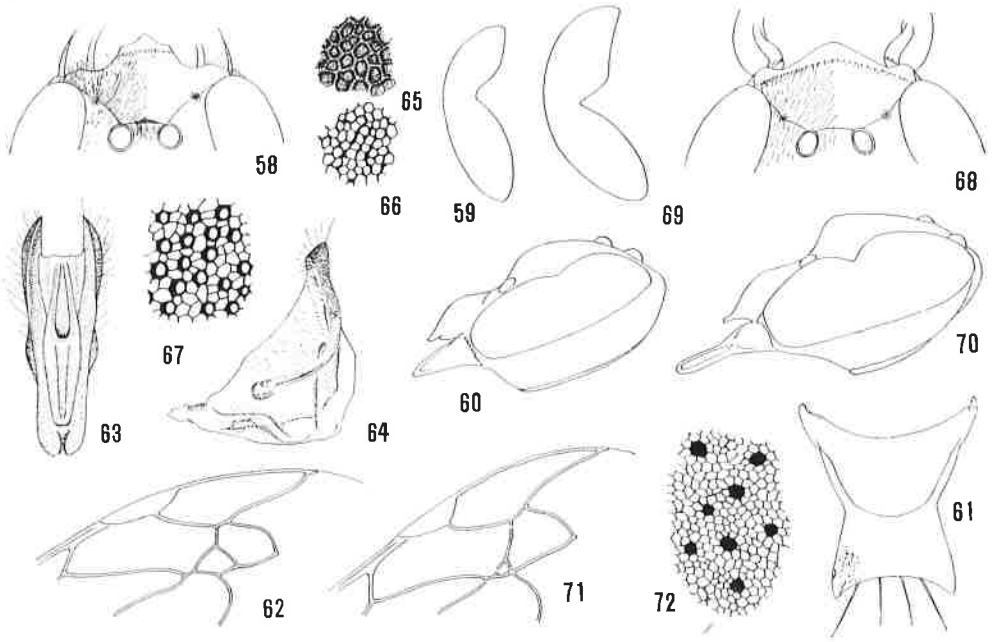
Punctures on mesonotum fine, distinct and fairly close, with the interspaces as large as punctures and well shining, under 64× magnification punctures when close together directly connected with each other by impressed lines, but when somewhat apart from each other with the interspace filled with the slight network of fine impressed lines as shown in Fig. 67; punctuation on mesopleuron similar, but with the interspaces almost without the connecting lines, hence the surface strongly shining. Area dorsalis obliquely striate, the striae mixing thick and thin lines, with the intervals very finely punctured, lateral broad impressed areas along the well-

* Genitalia seen from beneath volsella and other appendages are all lacking, but this is quite doubtful (the organ has been pulled out by the collector).

defined lateral carinae obliquely, coarsely, posterior aspect transversely, coarsely striate, sides of the segment posteriorly above obliquely striate, anteriorly smooth and polished; tergites finely and closely, sternites somewhat more sparsely punctured.

♀, unknown.

Holotype: ♂, the Ogasawaras (Is. Chichidzima), 16. VIII. 1972, Y. Haneda leg. (Coll. Haneda).




Figs. 58-72. 58-67: *Pison hanedai* sp. nov. ♂.
68-72: *Pison oakleyi boninense* ssp. nov., ♀.
58, 68: Clypeus. 59, 69: Eye incision. 60, 70: Head seen in profile. 61: The 8th sternite. 62, 71: Venation of fore wing. 63: Cenitalia seen from above. 64: Do. from the side. 65: Punctuation on vertex. 66, 72: Do. on frons. 67: Do. on mesonotum.

### 16. *Pison oakleyi boninense* sp. nov.

(Ref. *Pison oakleyi* Krombein, Proc. Hawn Ent. Soc., 13 (3): 407, 1949).

I thought at the first glance the present specimen (♀) to be the other sex of the preceding species, but on examining the characters it was made clear that the differences in the proportion of IODs above and below and in the punctuation (laying aside the difference in the venation of the fore wing) were too great to allocate them under the same specific category, even when the sexual differences were taken into consideration. On the other hand, according to the literature the specimen was similar to *P. oakleyi* of the Marianas in having the well shining mesopleuron. Detailed study of the specimen in comparison with the good description of this species led me finally to the conclusion that the specimen was better to be treated as representing a geographic race of *P. oakleyi* than to be dealt with as distinct, although the differences between them were considerably large:

It was distinctly smaller than *oakleyi*, the wings in the specimen were not so strongly infumated, punctures on the mesopleuron much sparser, the lateral carinae

of propodeum slightly longer, mandibles more broadly black and possibly (according to the comparative description of ♀) in the disposition of the ocelli.

In the following description, however, in order to clarify the differences of the present species from sympatric *hanedai*, stress will be laid on such characters.

♀. Length 6.0 mm. Black; mandibles glossy ferruginous red, with basal half black and with extreme apex dark brown, palpi ferruginous to dark brown, otherwise the body and appendages wholly black; wings feebly smoky, apical margin, radial cell anteriorly and around cubital cells slightly more strongly darkened. Vestiture in colour and in pattern of the distribution as in *hanedai*, but much sparser and shorter, with surface sculpture well visible, on clypeus mixing suberect, longer and brownish hair, pile bands on abdomen well defined on tergites 1–4.

Head from above with ocelli in a high isosceles triangle, distinctly higher than equilateral one (W:H=11:13) and the anterior ocellus slightly smaller, OOD:POD =1:2, diameter of postocellus about 4 times as long as POD, frontal groove weaker, narrow, not shining on upper half, not extending posteriorly on to the ocellar area, but anteriorly runs to the supraantennal glittering carina, having a minute glittering tubercle half way as in *hanedai*; clypeus: Fig. 68, not bluntly toothed at apex in middle, mandible with a short tooth on inner margin towards middle, not produced inwards, but directed apicalwards, nearly parallel to the margin, IOD at lateral bases of clypeus (minimum there) 2.5 times as great as the least IOD at vertex which is as long as antennal joint 3, OAD:WAS:IAD=4.5:4:5.5, eye incision deep, nearly pointed at apex (Fig. 69, cf. Fig. 59); head seen in profile with frontal elevation stronger than in *hanedai* and the temple markedly narrowed upwards (Fig. 70, cf. Fig. 60), antennal joints 3, 4, 5 with relative length approximately 4, 3, 3, joint 3 in the narrowest view about thrice, in the broadest view about 2.5 times as long as broad at apex; collar with posterior half in a transverse furrow, mesonotum with posterior margin crenated, the crenae only medianly slightly long and distinct, much shorter than in *hanedai*, propodeum with lateral carinae weaker than in this, but reach forwards near the spiracles, medial impression of the dorsal aspect shallow, broad and subparallel-sided, but a fine carina in middle longer, reaching posteriorly the verge to the posterior inclination, dorso-medial excavation of the posterior aspect deep and oval in form, with apex pointed and finely canaliculate on bottom; tergites 1–3 at the intersegmental areas distinctly constricted; in fore wing the recurrent vein 1 received by cubital cell 1 near its apex, 2 interstitial with cubital vein 2 (Fig 71), the petiole of cubital cell 2 much longer than the hight of the cell, nervulus slightly antefurcal, D=N/3 (but the venation is considered variable), legs normal.

Punctures on frons fine, shallow and sparse, with interspaces 1–3 times the width of a puncture and filled with the fine network of considerably strong impressed lines, the meshes about a half as large in diameter as the punctures (Fig. 72), hence under 32× magnification the surface appears granulate, on mesonotum punctures fine but distinct, close, averaged interspaces as large as punctures, each puncture connected with the adjacent ones by fine, weak, very delicate impressed lines, with the surface considerably shining, punctures on mesopleuron sparser, with interspaces 2–4 times the width of a puncture, the fine impressed lines connecting the punctures very feeble, only hardly visible under 64× magnification, on posterior

portion punctures finer and closer, metapleuron very minutely and moderately closely, upwards slightly more sparsely punctured. Propodeum at base slightly impressed in an up-turned flat triangle and the area obliquely striate, the median impressed part of dorsal aspect obliquely feebly striate on both sides of the medial carina, the striae posteriorly transverse and weaker, the disc without the trace of the striae as in *oakleyi* and minutely and sparsely punctured as in this, posterior aspect of the segment above very feebly, below strongly and coarsely, both transversely, striate, mixing minute points sparsely scattered above, the sides very finely and fairly closely punctured; abdominal tergites very minutely, fairly closely punctured, punctures on tergite 2 slightly more distinct and slightly larger towards the sides than in others, sternite 2 minutely, sparsely punctured, with puncture intervals feebly microcoriaceous.

Holotype: ♀, the Ogasawaras or the Bonin Islands (Chichidzima), 16. VIII. 1972, Y. Haneda leg. (Coll. Haneda).

### 17. The male of *Towada leclercqi* (Crabroninae), with the change of its taxonomic position.

Recently Mr. T. Nambu, Saitama Prefecture, discovered a nest of this very rare species and succeeded in rearing the larvae. A male specimen emerged from the nest was sent to me for investigation. To my surprise it was the male of the species hitherto known as *Crossocerus flavitarsus* m. According to the detailed reexamination of the male of this species it was recognized that the structure of the upper frons, frontal impressions, occipital carina and the collar of pronotum were parallel to the female (except that the frontal carina slightly variable in appearance), but the end tergite of the abdomen showed no particularity to separate it from the members of *Coelocrabro*. Judging by the total characters of both sexes it seems appropriate that the genus *Towada* is sunk to a subgenus of *Crossocerus*. Hence the following changes are brought into the nomenclature of the species concerned:

*Crossocerus* (*Coelocrabro*) *flavitarsus* (Tsuneki, 1947)
→ *Crossocerus* (*Towada*) *falvitarsus* (Tsuneki, 1947)

*Towada leclercqi* (Tsuneki, 1959)
→ *Crossocerus* (*Towada*) *flavitarsus* (Tsuneki, 1947), ♀.

The female (*leclercqi*) of this species has passed a considerable round way before arriving at the above mentioned status, namely *Crossocerus* (*Crossocerus?*) (1959) ——*Piyumoides* (1963)——*Towada* (1970)——*Crossocerus* (*Towada*) (1973).

This species has been known from Hokkaido (Sapporo and Jozankei), Aomori (Towada), Tochigi (Ohtawara), Saitama (Chichibu, Kodama and Ogawa), Fukui (Imajo) and Hiroshima (Sandankyo), but is everywhere very rare.

### 18. *Rhopalum* (*Rhopalum*) *hanedai* sp. nov.

Closely resembles *R. venustum* m., having the basal half of the abdominal petiole coloured ambur-yellow, differs from this, however, in the structure of the clypeus, in the disposition of the ocelli and in the punctuation of the head.

♀. Length 4–5 mm. Black; mandibles whitish yellow, with extreme base and

apex black, inner margin and apical third pale ferruginous; antennal joint 1, tubercles, fore and middle femora from apex to behind (under half) and fore tibiae externally whitish yellow; apices of coxae, fore and middle trochanters and bases of hind tibiae beneath semitransparent pale yellow; pale ferruginous are antennal joint 2 beneath and at apex, the following joints each at apex beneath, palpi, tegulae (greater part semitransparent), abdominal petiole on basal half (do.) and beneath wholly, basal and apical parts of tergites 2 and 3, apical portion of pygidial area, sternites 2–4 wholly and 5–6 at apex, the rest of fore and middle legs except the black bases of coxae and hind legs in part (a median third of coxae, trochanters, base and apex of femora, tibiae in front and inside, and each tarsal joint at apex). Wings clear hyaline, on radial and its accessory cell very slightly smoky, stigma and veins dark brown, antennal flagella also slightly brownish. Hairing normal, the appressed silvery pubescence on clypeus very dense, mixing about 10 long, half erected, pale yellow hairs.

Ocelli in an isosceles triangle, somewhat lower than equilateral one, the anterior ocellus distinctly smaller than the posterior, the rounded angle between upper and anterior frontes slightly larger than 90° larger than in *R. venustum**, frontal median furrow weak but distinct, relative length of interocular distances at anterior margin of postocelli and at base of clypeus approximately 2:1, WAS > OAD > IAD; clypeus: Fig. 73, disc gently roundly raised and the madian tooth at anterior margin slightly reflected, mandible as given in Fig. 73, antennal joint 1 approximately 4 times as long as its maximum breadth, joints 2, 3 and 4 subequal in length, 3 about 1.5 times as long as wide at apex, occipital carina not toothed at the ends; collar of pronotum anteriorly subcarinate, without median incision, with the posterior margin narrowly discoloured, median scutal line of mesonotum reaching posteriorly about a third from base, posterior margin of the segment not crenate, scuto-scutal furrow also without crenae, scutellum subquadrate, area dorsalis not marked off, but medianly finely canaliculate, the canal shallower posteriorly, but reaching the apex of the dorsal aspect, where the madian elongate excavation of the posterior aspect begins which is deep and distinctly margined by a carina on each side up to above middle of the aspect; petiole (Fig. 74) in form as in *venustum*, pygidial area (Fig. 75) with surface flattened, apically gently roundly inclined towards middle; in fore wing radial cell with apex obliquely truncate and with an accessory cell which is marked by a weak brownish vein, nervulus antefurcal, N=D, legs without particularity, hind tibia with a few spines externally.

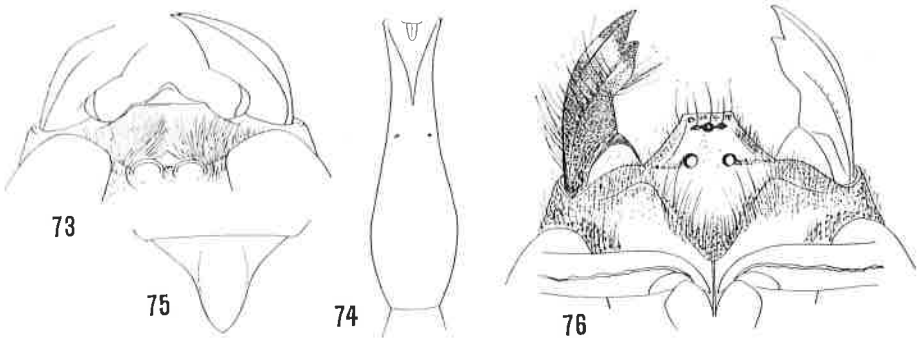
Vertex and upper frons finely and closely punctured, more closely so than in *venustum* and less shining, punctures slightly sparser laterally; mesonotum, scutellum slightly more sparsely and mesopleuron much more sparsely punctured, fairly strongly shining, dorsal area of propodeum smooth and polished, well contrasted to the finely punctuate rest of the segment, at base comparatively coarsely crenate; abdomen practically impunctate, but the dorsal surface except the swollen part of petiole not strongly shining, due to delicate microsculpture, pygidial area microcoriaceous, dull and opaque, ventral side of abdomen well shining.

♂, unknown.

* In *venustum*, when the anterior frons is held vertical the upper frons comes to be horizontal, in the present species the latter comes to be slightly inclined anteriorly.

Holotype: ♀, Fukui Pref. (Taniyama, about 600 m), 31. VII. 1972, Y. Haneda leg. (Coll. Tsuneki).

Paratypes: 3 ♀, the same place, 27. VII; 1, 6, VIII. 1972, Y. Haneda leg.




Figs. 73-76. 73-75: *Rhopalum* (*Rhopalum*) *hanedai* sp. nov., ♀.
76: *Smicromyrme fukudai tokunosimana* ssp. nov., ♂.
73, 76: Clypeus. 47: Petiole of abdomen. 75: Pygidial area.

### 19. *Rhopalum arasianum* is a variation of *R. watanabei* m.

*Rhopalum arasianum* was erected basing on female specimens which were similar in the end structure of the occipital carina to *R. calceatum* and which had the lateral carinae of the pygidial area very short or almost lacking as in *R. watanabei*. Recently I have captured a considerable number of the specimens of both sexes of *R. watanabei* in the montanic region of Fukui Prefecture and made the detailed reexamination of the characters of this species. As a resultit it was confirmed that the end structure of the occipital carina was considerably varied, including the state of *R. ararianum*, in both sexes.

*R. arasianum*, therefore, should be dealt with as a synonym of *R. wetanabei*.

Specimens examined: 1 ♂, Hokkaido (Jozankei), 10. VIII. 1948; 1 ♂, Kuriles (Etorofu), 29-30. VII. 1949; 1 ♂, Nikko (Chuzenji), 5. VII. 1952; 7 ♂, Fukui (Koike), 21. IX. 1972; 4 ♀, Hokkaido (Jozankei, Sapporo, Sounkyo), 19. VIII. 1952; 25. VII. 1952; 8-9. VIII. 1958; 1 ♀, Aomori (Mt. Hakkoda), 27. VII. 1964; 2 ♀, Nikko (Yumoto), 10, 28. VI. 1952; 1 ♀, Mt. Haku, 31. VIII. 1957; 16 ♀, Fukui (Koike, Arashi, Taniyama), 30. VII.—28. IX. 1958-72.

## II. MUTILLIDAE

### 1. *Smicromyrme alberici* (Zavattari, 1913)

*Smicromyrme alberici:* Tsuneki. Etizenia, 64: 19, 1972

*Specimen examined:* 1 ♀, the Ryukyus (Is. Ishigaki: Takeda), 13. VIII. 1972. T. Nambu leg.

*Remarks.* The specimen agrees almost completely in characters with the typical one of Formosa, except that the antennal flagella are slightly more restricted in the reddish brown colouration. In the Formosan specimen the basal half of flagellum beneath and basal two joints of flagellum above reddish brown, while in the Ishigaki

specimen observed the basal two joints of flagellum beneath only reddish brown.

As to the taxonomic problem regarding the present species I have already given discussion at some length in the paper above cited.

This species is easily separable from others by the 2nd tergite of the abdomen carrying three pile marks transversely disposed. Length 5 mm.

This is the first record of the species from Japan.

### 2. *Smicromyrme fukudai tokunosimana* ssp. nov.

(Ref. *Smicromyrme fukudai* Tsuneki. Etizenia, 61: 18, 1972.)

The new subspecies differs from the nominate race known from the Yakushima (lying south off the south coast of Kyushu and considered to belong to the Palaearctic Region) in that the medial part of the clypeus is shorter (Fig. 76, cf. Fig. 46 of my paper above cited and also that of *S. rapa* on page 15 of Etizenia, 64) and the body is much smaller (but this character is considered considerably variable).

Holotype: ♂, the Ryukyus (Is. Tokunoshima: Mt. Inokawa), 2. VIII. 1972, T. Nambu leg.

*Remarks.* In colour the present species resembles more closely *S. scaphella* Chen, known from the eastern region of Continental China, but this species is considered to be different from *fukudai* at least in the structure of the clypeus (from the original description the character is not well realized, but at least the description does not agree with the character of *fukudai*) and in the punctuation of the 2nd tergite.

In the present subspecies, besides the relatively shorter clypeus, there is some difference from the typical race in the grade of reflection of the anterior part of the clypeus, that is to say, the angle formed by the medio-anterior produced part of clypeus with the main polished part of inclination is smaller than in *fukudai fukudai*, that is, the part is more strongly reflected or raised.

As to the taxonomic position of *fukudai* there is a problem which will be discussed in connection with the following species.

### 3. *Trogaspidia fukudai tokunosimana* ssp. nov.

(Ref. *Trogaspidia fukudai* Tsuneki, Etizenia, 61: 14, 1972.)

The specimen differs from the type, captured on the Is. Yakushima, in that the pygidial area is almost completely smooth and polished, sides of prothorax without puncture and its ventro-anterior corner triangularly acutely pointed at apex, propodeal scale distinctly defined and the body is much smaller (about 6.5 mm, but probably variable). Otherwise as in the type of *fukudai*

Holotype: ♀,the Ryukyus (Is. Tokunoshima: Mt. Inokawa), 2. VIII. 1972.

*Remarks.* At the moment of my descriptions of *Trogaspidia fukudai* and *Smycromyrme fukudai*, both of which were captured on the Yakushima at nearly the same time, I had a doubt that they might represent the different sexes of the same species, since according to the classification system of Mickel both belonged to the genus *Trogaspidia.* I thought, however, that the Chen's system was more advanced and logical, and I divided them at the generic rank.

In the private communication of Mr. T. Nambu, the collecter of the new subspecies, he informed me that the specimen of *T. f. tokunosimana* when captured was in

copula and put in the killing bottle in this condition; he later captured one more male; but when he tried to take the specimens out of the killing bottle one of the male specimens happened to drop into the grass and could not be rediscovered; he could not determine which of the male specimens had been lost. According to this communication there is a considerable probability that *Trogaspidia fukudai tokunosimana* and *Smicromyrme fukudai tokunosimana* are the paired specimens. Considering that the lost specimen may belong to the same species as that of the remaining male specimen, the possibility is as much increased. The relation is just what I doubted at the moment of my descriptions.

If the relation is truly the case, the change of the definition of the genera or the erection of a new genus to include the species having the combined characters of parts of *Trogaspidia* and *Smicromyrme* of the present day taxonomy seems to be necessary, since the return to the old system that disregards the difference in the structure of the male genitalia is irrational.

## References


Chen, S. W. 1957. A revision of the velvety ants or Mutillidae of China (Hymenoptera). Quart. Jour. Taiwan Mus., 10 (3-4): 135-224.

Giner Mari, J. 1943. *Cerceris* orientalis, V. Los *Cerceris* Latr. de la isla de Formosa (Hymenoptera: Sphecidae). Arb. morph. taxon. Ent. Berlin-Dahlem, 10 (2-3, 4): 168-173, 209-223.

Gussakovskij, V. 1937. Espèces paléarctique des genres *Didineis* Wesm. *Pison* Latr. et *Psen* Latr. (Hymenoptera, Sphecoidea). Trav. Inst. Zool. Acad. Sci. URSS. IV (ref. 633-695).

Krombein, K. V. 1949. The Aculeate Hymenoptera of Micronesia. I. Scoliidae, Mutillidae, Pompilidae and Sphecidae. Proc. Hawn. Ent. Soc., 13 (3): 367-410.

Tano, T. 1972. Chrysididae and Sphecoidea collected on the Ryukyus. Life Study, 16 (1-2): 22-25 (in Japanese).

Tsuneki, K. 1955. Two new species of the genus *Rhopalum* from Japan (Hymenoptera, Sphecidae, Crabronidae). Kontyu, 23: 105-108.

——— 1956. Die Trypoxylonen der nordöstlichen Gebiete Asiens (Hymenoptera, Sphecidae, Trypoxyloninae). Mem. Fac. Lib. Arts, Fukui Univ., II, 6 (1): 1-42.

——— 1959. Taxonomical notes on some species of Japanese *Rhopalum* (Hymenoptera, Sphecidae, Crabroninae). Akitu, 5: 67-70.

——— 1959. Contribution to the knowledge of the Cleptinae and Pseninae Faunae of Japan and Korea (Hymenoptera, Chrysididae and Sphecidae). Mem. Fac. Lib. Arts, Fukui Univ., II, 9 (1): 1-78.

——— 1959. Une nouvelle espèecs du Crabronien du Japon. Akitu, 8: 83-84.

——— 1960. Taxonomic notes on some Japanese species of Aculeate Hymenoptera, with the description of a new species of the genus *Trypoxylon*. Kontyu, 28: 239-243.

——— 1960. The Japanese and Korean species of *Rhopalum* (Hym., Sphec., Crabroninae). Life Study, 4 (4): 57-62.

——— 1963. *Crossocerus leclercqi* is a species of *Piyumoides* (Hym., Sphec., Crabroninae). Ins. Matsumurana, 26 (2): 99-103.

——— 1963. The tribe Gorytini of Japan and Korea (Hymenoptera, Sphecidae). Etizenia, 1: 1-20,

——— 1966. Taxonomic notes on *Trypoxylon* of Formosa and the Ryukyus, with descriptions of new species and subspecies (Hymenoptera, Sphecidae). Etizenia. 13: 1-19.

——— 1966. Contribution to the knowledge of the Larrinae fauna of Formosa and the Ryukyus (Hymenoptera, Sphecidae). Etizenia, 17: 1-15.

——— 1967. Studies on the Formosan Sphecidae (I). The subfamily Larrinae (Hymenoptera). Etizenia, 20: 1-60.

——— 1967. Idem (II). The subfamily Trypoxyloninae. Ibid., 22: 1-21.

——— 1967-68. Sphecoidea from the Ryukyus and Formosa (Hymenoptera). Kontyu, 25

(4): 282-290; 26 (1): 54-58.
———— 1968. On some Sphecoidea from the Ryukyus (Hymenoptera). Trans. Shikoku Ent. Soc. 9 (4): 107-111.
———— 1968. Three species of *Pison* from the Marianas (Hymenoptera, Sphecidae). Kontyu, 36 (1): 21-22.
———— 1968. Descriptions and records of some fossorial wasps in Japan (Hym., Sphecidae). Etizenia, 27: 1-8.
———— 1968. Studies on the Formosan Sphecidae (VI). The subfamily Nyssoninae (Hym.), with notes on *Bembecinus* of the Ryukyus and Korea. Ibid., 31: 1-26.
———— 1970. Change of the taxonomical position of three species of Crabroninae occurring in Japan, with notes on some species (Hym., Sphecidae). Ibid., 50: 1-8.
———— 1971. Studies on the Formosan Sphecidae (IX). A supplenent to the subfamily Sphecinae (Hym.). Ibid., 53: 1-7.
———— 1971. Idem (X). Revision of and supplement to the subfamily Trypoxyloninae (Hymenoptera). Ibid., 54: 1-19.
———— 1971. Idem (XI). A supplement to the subfamily Larrinae (Hymenoptera), with appendix on *Tachysphex* of the southern Ryukyus. Ibid., 55: 1-21.
———— 1971. Idem (XII). A supplement to the subfamily Nyssoninae, with the *Bembecinus*-species of the Ryukyus and Korea. Ibid., 56: 1-15.
———— 1972. On some species of the Japanese Sphecidae (Hymenoptera), notes and descriptions. Ibid., 59: 1-20.
———— 1972. Studies on the Mutillidae of Japan (Hymenoptera). Ibid., 61: 1-26.
———— 1972. Mutillidae collected in Formosa in 1966 and 68 (Hymenoptera). Ibid., 64: 1-25.
Yasumatsu, K. 1935. The genus *Pison* Spinola of the Japanese Empire (Hymenoptera, Trypoxylonidae). Ann. Zool. Jap., 15 (2): 227-239.
———— 1938. Notes suppleméntaires sur le genre *Pison* Spinola du Japon (Hymenoptera, Trypoxylonidae). Festschrift f. Prof. Dr. E. Strand, 5: 81-84.
———— 1938. A revision of the genus *Sphex* Linné of the Japanese Empire (Hymenoptera, Sphecidae). Tenthredo, 2 (1): 44-135.
Yoshimoto, C. M. 1960. Revision of Hawaiian Crabroninae, with synopsis of Hawaiian Sphecidae (Hym.). Pacif. Ins., 2 (3): 301-337.

## *ADDENDA*

### ***Crossocerus* (*Ablepharipus*) *congener fukuianus* Tsuneki is a distinct species**

In Etizenia 50 (1970) I proposed to deal with the Japanese specimens of seeming *Crossocerus congener* Dahlbom as a local race basing upon the comparison with the redescription of this species by Prof. J. Leclercq. Recently, through the courtesy of Prof. Leclercq I could obtain a female specimen of this very rare species collected by P. P. Badig in Balzburg-Parsch (am Busch) on Sept. 10, 1963. Upon the direct comparison it was at once cognized that our specimens were distinctly different from the species hitherto presumed and they must be raised to the species rank, although the general colouration and morphology are very close to *congener*. The differences are as follows (from marked to less marked):

In *fukuianus* (1) body much larger, most usually 7-8 mm, (2) area dorsalis on propodeum much more swollen, its anterior half forming distinctly a rounded dorsal surface and the posterior half forming the rounded upper part of the posterior aspect, whole the area nearly smooth and polished, only on medio-anterior part short, close and delicate striae observed, the area at base coarsely foveolate and medianly furrowed, the furrow at first broad but gradually narrowed posteriorly into a fine line and hardly

reaching the posterior margin of the area, since the portions outside the area are finely punctulate or microstriate the difference of the surface condition is markedly contrasted; posterior aspect also smooth and polished upwards and the lateral margins well marked off by delicate grooves till about middle of the segment, medial furrow triangular, strongly divergent upwards. (In *congener* the area dorsalis only very feebly swollen, begining to incline almost from the base, without forming a distinct dorsal aspect, the surface finely closely striate all over, medial furrow very weak, not enlarged at base and the area enclosed nearly completely by a line of very weak fine punctures or short striae, the portions outside the area microcoriaceous and finely sparsely punctured, dull, the difference of the surface conditions is not so strongly contrasted as in *fukuianus*; medial furrow of posterior inclination narrow, only weakly divergent upwards.), (3) collar of pronotum much thicker, with the sides gently roundly swollen, as a result laterally thicker than in middle (in *congener* the collar transversely curved, anterior and posterior margins nearly parallel, or rather in middle slightly thicker or longer), (4) eyes with the ommatidia anteriorly larger, but the difference in size is not so marked as in *congener*), (5) clypeus with the anterior margin of the medial produced part roundly curved (in *congener* nearly truncate), (6) medial raised wedge at base of pygidial area with the apical angle much broader than in *congener*, thus the angle formed by the upper branches of the Y-shaped impression is markedly broader, (7) mesopleuron broadly and the first tergite wholly without puncture; generally the ground microsculpture of the body is weaker in *fnkuianus* with the surface more shining.

In connection with the change of the taxonomic position of *Crossocerus fukuianus* the race of the presumed *congener* must also be altered its name as follows:

*Crossocerus* (*Ablepharipus*) *congener bambosicola* Tsuneki, 1971

⟶ *Crossocerus* (*Ablepharipus*) *fukuianus bambosicola* Tsuneki, 1971

### The status of *passaloecus tenuis yamato* of Japan

*P. t. yamato* m. was erected on the bases that in the clypeal character it is considered between *P. tenuis* and *P. clypealis* and rather closer to *tenuis* (often medio-anterior margin completely straight) and that the humeral tubercles are largely white. Recently I could have directly compared the Japanese specimens with those of the typical race of *P. clypealis* and could ascertain that the clypeal from of our specimens was rather closer to that of *clypealis* (!) than to *tenuis* (though with some exceptions) and that they are not so different in other characters also as to be received in another geographical race. So the race, *yamato*, was suppressed and synonymised with *Passaloecus clypealie* Faester, 1947.

### On the marked variation in the from of the head in *Stigmus quadriceps*

In *Stigmus* (*Stigmus*) *quadriceps* m. (Mem. Fac. Lib. Arts, Fukui Univ., II, 4 (5): 47, 1954) usually the head is well developed, subquadrate seen from above, without the frontal medial furrow as a rule. In somes pecimens, however, especially in the females, the upper frons is longitudinally, very deeply excavated in the middle, with the sides appearing roundly raised, as if they belong to a different species. In other characters, however, no difference whatever beyond the variation range of the

species can be observed. Acocording to the examination of a number of specimens from the same locality such specimens are completely connected with the normal ones by a series of gradual intermediate variations. Hence, the specimens having a very strong furrow in front of the anterior ocellus must be considered a mere variation from the ones that have the non-furrowed upper frons.

In this species, further, the form of the head seen from above is sometimes fairly strongly convergent posteriorly. This is especially the case with the small specimens (but never so much as in *convergens*). The colour of the legs, especially the fore and the middle legs, is also markedly variable and can not be relied on as a specific distinction. They are sometimes completely ferruginous, but sometimes the femora and parts of the tibiae are dark brown to black, with every intermediate colouration.

In contrast to the above in the form of the anterior margin of the clypeus and in the sculpture on the mesopleuron (on the subalar epimeral area and on the triangle area) the variation is very slight. The rule above written in regard to *S. quadriceps* is applicable almost to all the members of the genus and of use in classifying the members of this genus.