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STUDIES ON THE FORMOSAN SPHECIDAE (XIV)
NOTES ON SOME SPECIMENS NEWLY EXAMINED, WITH A DESCRIPTION
OF A RELATED JAPANESE SUBSPECIES
(HYMENOPTERA)

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1. An aberrant form of *Trypoxylon subpileatum* Strand, 1922

The below listed male specimen of *T. subpileatum* is markedly different from the normal form of the species in the sculpture of the propodeum. It further differs somewhat in the structure of the frontal shield and is much smaller.

♂. Length 6.8 mm (usually 8.0-11.3 mm). Frontal shield: General structural feature as in the typical form, but the inside of the carinae markedly shallower than usual, especially on anterior portion and the weak S-shaped sinuation of the anterior carinae much weaker, nearly straight. Propodeum: Lateral furrows of the area dorsalis very weak and shallow, becoming shallower and indistinct posteriorly, median furrow also shallow and not broad, only the medio-posterior excavation of the dorsal aspect broad and deep, disc (areas between the median and lateral furrows) obliquely and finely striate, median furrow on the posterior portion very indistinctly and sparsely crenulate, lateral furrows crossed by the oblique discal striae, outside the area dorsalis longitudinally, finely and closely rugoso-striate, the striae extended to posterior inclination and run oblique; the sides of the segment broadly smooth and polished, only on posterior part obliquely, closely but not strongly striate. (For comparison in the typical specimens: Area dorsalis encircled by a broad, fairly deep and coarsely crenate furrow, the furrow at the medio-posterior part much more broadened and deepened; median longitudinal furrow also broad, deep and coarsely crenate, the intermediate area (disc) very narrow, moderately coarsely rugose or rugoso-reticulate; outside the area till the lateral longitudinal carinae the surface transversely coarsely striate, the similar striae on posterior inclination reach inwards the narrow median longitudinal furrow; the sides of the segment obliquely, finely and fairly closely striate, only the narrow medio-anterior part without striae and shining. This type of sculpture is very constant in this species in both sexes).

In view of the differences above mentioned the specimen appears to belong to another species. In other important characters, such as the structure of the genitalia, antennae and clypeus and in the punctuation and coloration, however, it completely agrees with the typical specimen of *T. subpileatum*. Possibly it represents a mutant, suddenly appeared, or at least not as yet fully fixed.

Examined specimen: 1 ♂, Nantou Pref. (Puli), 27. VII. 1971, Y. Haneda leg.

2. Notes on *Trypoxylon tainanense* Strand, 1923

Trypoxylon tainanense Strand, Internat. Ent. Zeitschr., 16 (23): 188, 1923 (♀).

Trypoxylon tainanense: Tsuneki, Etizenia, 22: 2, 1967 (♀, keyed).

Specimen examined: 1 ♀, Ilan City, Ilan Pref., 9. VIII. 1971, Y. Haneda leg.

♀. Length 11.0 mm. Well agrees with the original description except the antennal structure. Strand says that das 2. Geisselglied ist 4mal so lang wie am Ende dick, die

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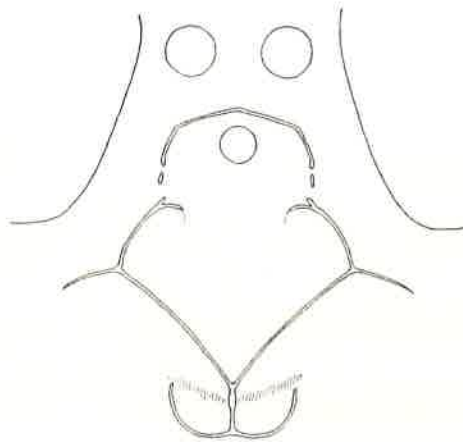


Fig. 1. Frontal shield of *Trypoxylon tainanense* Strand.

antennal bases, posterior half fairly markedly inclined towards the medial line including the anterior ocellus.

3. A new specimen of *Trypoxylon fenchihuense* Tsuneki, 1967

Trypoxylon fenchihuense Tsuneki, Etizenia, 22: 16, 1967 (from Fenchihu, Chiai Pref., 1400 m).

Specimen examined: 1 ♂, Lishan (Taizhong), Taichung Pref. (1600 m), 6. VIII. 1971, Y. Haneda leg.

Remarks. Except for the slight difference in the blackish maculation on the abdomen it well agrees in characters with the type.

4. On *Larra polita* F. Smith (1958)

Larra polita: Tsuneki, Etizenia, 20: 24, 1967.

Larra polita: Tsuneki. Ibid., 55: 2, 1971.

Specimen: 1 ♂, Liyuchih, Hualien Pref., 3. VIII. 1971, Y. Haneda leg.

Remarks. In the specimen observed the ferruginous red colour of the mandibles and the legs turns into more brownish and the mid and hind tibiae together with the fore femora dark brown. The specimen is much smaller than usual (6.0 mm) and the sides of the propodeum merely punctured, almost completely lacking the mixed striae. However, as to other characters including those of the genitalia it completely agrees with the usual specimens of this species and no doubt it shows only a variation in coloration.

IOD at vertex slightly *more* (not less, as I erroneously gave in the key of my first paper) than as long as antennal joints 3 and 4 taken together, but slightly less than as long as joints 2+3+4.

5. *Liris (Dociliris) intermedia* sp. nov.

Very close in structure to *L. subtessellata* (Sm.) and in colour to *L. docilis* (Sm.).

♂. Length 6.7 mm. Coloration and pilosity as in *L. docilis* (legs wholly black), but the pile bands of abdomen on tergite 1, 2, 3 and 4 as in *L. subtessellata* and they glitter more brightly than in that, therefore much more distinct. In structural distinctions very similar to *L. subtessellata* and only the following differences can be observed:

drei folgenden Geisselglieder sind mindestens doppelt so lang wie am Ende dick. In the specimen before me, however, the 3rd joint of antennae (his 2. Geisselglied), even in the narrowest view, only thrice as long as wide at apex (the 4th 2.5 times and the 6th about twice as long as broad at apex). Ultimate joint 2.6 times as long as broad at base.

As to the frontal shield Strand described it in detail, but without the illustration. In the specimen observed by me the form of it seen vertically from above is as given in Figure 1. Anterior half of the shield very shallow, raised forwards to connect with the medial longitudinal carina located between the

(1) Antennal joints slightly shorter, in the narrowest view joints 6-12 approximately 1.7 times as long as wide at apex (in *subtessellata* about twice as long as wide); rhinaria similar. (2) Propodeum at the lateral margins of dorsal aspect with no trace of longitudinal carina (in *subtessellata* clearly be observed, though not complete). Striation similar. (3) Genitalia very similar (distinctly different from those of *L. docilis*), the sole difference: The black coloured bristles-holder of the paramere is at the apex similarly bifurcate, the dorsal branch as well as the ventral branch carries a fringe of long bristles (Fig. 2. in *subtessellata* the ventral branch only carries the bristles).

Paramere at the ventral margin of the apical half adorned with a fringe of long bristles as in *subtessellata*. Further, the form of the clypeus, relative length between interocular distance at vertex and antennal joints 2+3, the medio-anterior slight impression of mesonotum, the degree of the excavation at the underside of fore and hind femora and the pilosity of fore femora beneath etc. almost identical with *L. subtessellata*. From this, however, it can easily be separated by the wholly black hind legs. From *L. docilis* it can easily be distinguished by the structure of the fore femora, 8th sternite and genitalia.

♀, unknown.

Holotype: ♂, Tientian, Hualien Pref., 4. VIII. 1971, Y. Haneda leg. (the writer's coll.).

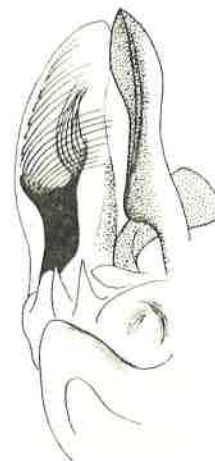


Fig. 2.
Genitalia (left half)
of *Liris (Dociliris)*
intermedia sp. nov.,
seen from inside.

6. *Liris (Nigliris) japonica* (Kohl), some variations

Liris japonica: Tsuneki, Etizenia, 20: 34, 1967.

Liris japonica: Tsuneki, Ibid., 53: 7, 1971.

(1) *Specimen concerned*: 1 ♂, Liyuchih, Hualien Pref., 3. VIII. 1971, Y. Haneda leg.

In this specimen the sculpture of the propodeum is markedly different from that usually met with in this species. Except for the median carina the longitudinal carinulae almost completely lacking and the surface appears to be transversely moderately closely rugoso-striated. The feature is quite contrastic to the aberration described in my previous paper (Etizenia, 20: 37) wherein the longitudinal striae alone remained very distinct. In the hairing at the ventral side of the abdomen and in the distribution of the antennal rhinaria the specimen belongs to type 2 given in the paper above cited.

(2) *Specimen concerned*: 1 ♀, Liyuchih, Hualien Pref., 3. VIII. 1971, Y. Haneda leg.

In this specimen the dorsal side of propodeum is anteriorly obliquely and posteriorly transversely, both strongly and very coarsely striate, almost without the sectioning carinulae, but the surface minutely irregularly and delicately rugulose. In other distinctions as in the usual form.

(3) *Specimen concerned*: 1 ♀, Ilan, Ilan Pref., 9. VIII. 1971, Y. Haneda leg.

The sculpture on the broad medio-posterior area of propodeum very minutely rugoso-reticulate. In this specimen, further, the median produced part of clypeus markedly broad, distinctly broader than in the usual form of the species. Half the anterior

margin of the median part distinctly greater in length than the distance between the lateral angle of the margin and the eye (usually both are subequal in length). Besides the above in this specimen the punctures on the mesopleuron are much finer than usual and the surface is more strongly shining.

7. *Cerceris varia* of Formosa is a subspecies

Cerceris varia: Tsuneki, Etizenia, 44: 20, 1970.

Only the male has been collected. But the specimens markedly differ from the Javanese ones in the coloration of the abdomen (as given in my previous paper) and considerably so in the form of the body. It seems better to treat them as a geographic variation:

Cerceris varia kalensis ssp. nov.

♂. Wings hyaline, antero-distal corner strongly darkened, this marking is rather distinctly outlined and very conspicuous. The form and the maculation of the abdomen: Fig. 3, the dotted areas brownish red. Sternite 2 at base on each side with a small blunt tubercle, seen from beneath it is rather ill-defined, but in the lateral view it can clearly be observed. The area between the tubercles slightly raised; this sternite medianly sparsely, laterally somewhat more closely, both grossly but not deeply punctured.

Holotype: ♂, Hualien (Kalen) Pref. (Liyuchih), 16. VIII. 1966, K. Tsuneki leg.

Paratypes: 2 ♂♂, Taitung Pref. (Taoyeh), 14. VIII. 1966, K. Tsuneki leg.

8. *Cerceris umbinifera* Maidl, 1926

Cerceris umbinifera Maidl, Zool. Medded., 9: 229, 1926 (♀♂).

Cerceris umbinifera: Van der Vecht, Ibid., 39: 349 (♀), 352 (♂), 354, 1964.

Specimen examined: 1 ♂, Kentin Park, Pingtung Pref., 30. VII. 1970, Y. Haneda leg.

Remarks. This species is new to Formosa. The specimen examined well agrees in characters with the original description and with the key by Van der Vecht, except that the yellow maculae on the head and the abdomen much better developed; Clypeus wholly yellow except all the marginating lines, lateral maculae on face very large; basal mark of 2nd tergite distinctly larger than that given by Vecht and the tergite with a narrow yellow line on each side along the apical margin, the bands on tergites 3-6 all complete and distinct, that on 3 the broadest, that on 4 the narrowest and the 6th' broader than the 5th'.

台湾初記録種 (模式産地はジャワ・スマトラ)。ただし台湾では今は未知。

♂。第2腹面節基部両側に明瞭な門鉾状小突起がある。頭楯は膨隆し中央前縁3齒、両側は鈍、心形域の凹溝および正中溝は幅広く、これに挟まれた部は狭く、太い縦溝であらくえぐられている (変異あらん)、後脚基節内面に強い縦稜。体黒色で頭楯 (周縁線を除き全部) と顔面の両側大紋、前胸背の2紋、テグラ (中央透明)、後楯板、第2腹背節基部中央の大紋、後縁両側に近い1横線、第3-6節の後縁線 (3が最も太く、以下6, 5, 4と順次細い)、第3, 4腹面節の両側紋、触角柄節 (先端と側面の1線



Fig. 3. Abdominal maculation of *Cerceris varia kalensis* subsp. nov., ♂.

は黒褐), 脚の各基節先端, 全転節, 腿節上の1縦線, 前・中脛節, 後脛節外面, 前付節(先端に向いやや褐)および第1中付節は黄; 翅は基部を除きかなり強く曇る。体長9mm。♀は原著によれば, ♂に似るがその頭楯は♂より強く隆起し, 前方に陥凹部を欠き前縁円く突出, その中央わずかに凹む。第1腹背節後縁に赤色部がある。

9, 10. On two species of *Cerceris* collected 50 years ago

9. *Cerceris luzonensis fukaii* Rohwer, 1911

Specimen: 1 ♀, Kuantsuling, Tainan Pref., 24. IV. 1922, the late Dr. K. Takeuchi leg.

Remarks. In this specimen the macula on the lamina of the clypeus well developed, extending somewhat to the lateral areas, collar of pronotum with two small lateral yellow spots, quite exceptional to the species (see the key by myself) and a narrow medial transverse yellow mark is present before apical margin of the 2nd tergite.

10. *Cerceris sinensis* F. Smith, 1856

Specimen: 1 ♀, Kuantsuling, Tainan Pref., 22. IV. 1922, the late Dr. K. Takeuchi leg.

Remarks. In this specimen the maculae of the body well developed: A yellow spot is present on temple above behind eye, anterior part of pronotum (nape region) broadly yellow, postscutellum with a yellow band, the usual 3 maculae on tergite 2 melted together, leaving a small black spot on each side towards middle of the segment and a narrow transverse blackish mark at the apical margin.

11. *Psen (Mimumesa) vanlithi* Tsuneki, 1959

Psen (Mimumesa) vanlithi Tsuneki, Mem. Fac. Lib. Arts, Fukui Univ., Ser. II, 9: 61, 1959 (♀♂, Central Japan).

Psen (Mimumesa) vanlithi meridionalis ssp. nov.

Differs from the nominate race in that the punctures on vertex and mesonotum somewhat larger (similarly sparse) in both sexes, antennal flagellum in ♀ faintly brownish beneath (not so bright ferruginous as in the typical female) and occipital carina in ♂ stronger, more highly raised, with the accompanying furrow coarsely crenate.

Otherwise, including the structure of the male genital organs, as in the nominate race.

Holotype: ♂, Ilan City, Ilan Pref., 7. VIII. 1971, Y. Haneda leg.

Paratype: 1 ♀, the same place and time with the holotype.

Remarks. This is the first record of the occurrence of the species from the region other than Japan. According to the private information of the collector this species was very common on the leaves of the sweet potato of the field in the suburbs of the city.

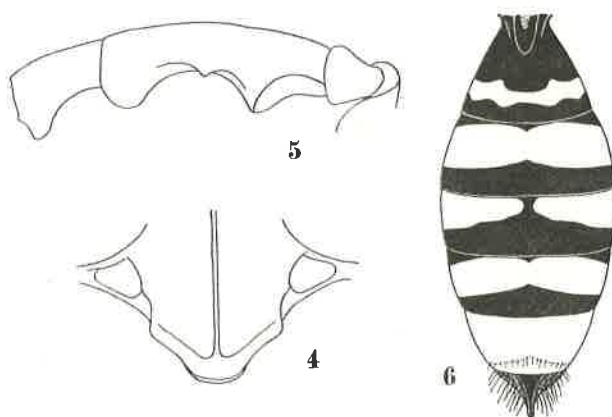
12. *Psen (Psen) shukuzanus* nom. nov.

for *Psen (Psen) longicornis* Tsuneki, 1967 (Etizenia, 24), nec *Psen (Mimumesa) longicornis* Fox, 1898 (Trans. Amer. Ent. Soc., 25) (Courtesy of Mr. J. P. van Lith).

13. *Ectemnius cavifrons* from Formosa and Japan

A. *Ectemnius (Clytochrysus) cavifrons kizanensis* ssp. nov.

♂ (Both antennae from joint 5 apically lacking). The male differs from the typical one of Europe in the following characters: (1) Median produced part of clypeus broader



Figs. 4-6. *Ectemnius (Clytochrysus) cavifrons kizanensis* ssp. nov., 4-5, ♂; 6, ♀. 4 = Clypeus. 5 = Antennal joints 2, 3 and 4 (posterior view). 6 = Maculation of abdomen.

(Fig. 4), (2) covering hairs of clypeus brassy in colour, (3) antennal joint 3 beneath on posterior margin towards middle more distinctly toothed (Fig. 5). In the sculpture of mesothorax, in the detailed structure of the propodeum and in the maculation of the abdomen it is very similar to the European specimens.

♀. More closely resembles the typical race than in the male. Only the yellow bands of the abdomen (Fig. 6) seem to be much broader. In the specimen, orange yellow are antennal joints 1 and 2 wholly, mandibles except apical third, medianly interrupted band on collar of pronotum, humeral tubercles, a spot on transparent brownish tegulae, a band on scutellum, a band on tergites 1-4 respectively (on 3 medianly interrupted), tergite 5 wholly, all legs from apex of femora apically except some spines on tibiae, end joints and a small patch on inside of middle tibiae. Wings pale yellow, stigma and veins ferruginous. Length ♂ and ♀ about 12 mm.

Holotype: ♂, Chihshan (Kizan), Pingtung Pref., 7. IV. 1932, collector unknown.

Paratype: ♀, the same place and time. (Both in Coll. Tsuneki).

B. *Ectemnius (Clytochrysus) cavifrons nipponensis* ssp. nov.

The Japanese representatives of this species markedly differ from the Formosan as well as the European population in the maculation of the body and legs. The yellow maculae are much less developed. Maculae on thorax (on pronotum, scutellum and post-scutellum) are usually narrow or small, and some of them very frequently disappeared; in males the thorax is in a number of the specimens wholly black. Maculae on tergite 1 of abdomen are in both sexes lacking and on other tergites never forming a band, but always separated from each other into the lateral markings. Legs more broadly black: Fore tibiae with a black streak on posterior margin, mid and hind tibiae wholly black except a narrow yellow streak on outer margin. Generally, however, the maculation is somewhat better developed in the female than in the male. Besides the maculation the striae on the mesopleuron sparser and much weaker, and on lower portion more broadly lacking than in the typical race. The impression on the latero-posterior part of propodeum much less deep and indistinct and the medial furrow of the posterior inclination

narrower (almost parallel-sided) and more distinctly outlined. Moreover, in the male antennal joint 3 completely lacking the medial protuberance on the posterior margin (cf. Fig. 5, in this the protuberance is well developed).

Holotype: ♂, Arashi, Fukui Pref., 24. IX. 1967, K. Tsuneki leg.

Paratypes: 10 ♀ 10 ♂, Soukkyo, Hokkaido, 6-10. VIII. 1944-47; Towada, Aomori Pref., 4. VIII. 1957; Koike, Fukui Pref., 24-28. V. 1955, K. Tsuneki leg.

Other specimens: A number of ♀ and ♂ from various parts of Japan.

14. Discovery of *Crossocerus denticrus* in Formosa

Specimen examined: 1 ♀, Liyuchih, Hualien Pref., 3. VII. 1971, Y. Haneda leg.

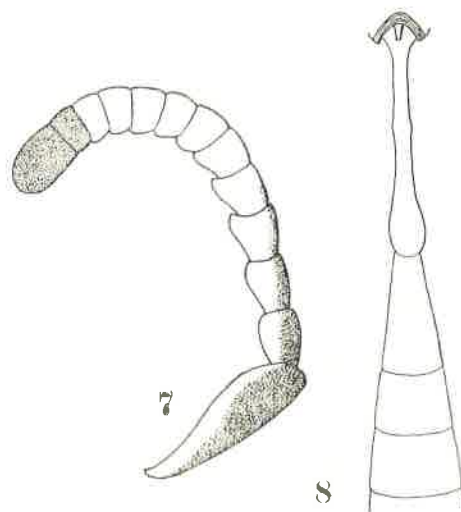
Remarks. In structural and colorific distinctions the specimen from Formosa shows almost no note-worthy difference from those of Japan. Only the black maculae on the tibiae of all legs appear somewhat narrower or smaller and weaker in its blackish tone (slightly brownish).

15. *Rhopalum (Latrorhopalum) erraticum* Tsuneki, 1968

Rhopalum (Latrorhopalum) erraticum Tsuneki, Etizenia, 51: 24, 1968.

Specimen examined: 1 ♂, Tsuifeng, Nantou Pref., 28. VII. 1971, Y. Haneda leg.

Remarks. The figure of the male antenna given in my previous paper shows partly a distorted state and partly a state seen obliquely in front and is likely to give the investigators an erroneous image. In the present specimen it is held in a normal condition and the state is shown in Fig. 7. Abdominal segments 1-4: Fig. 8.



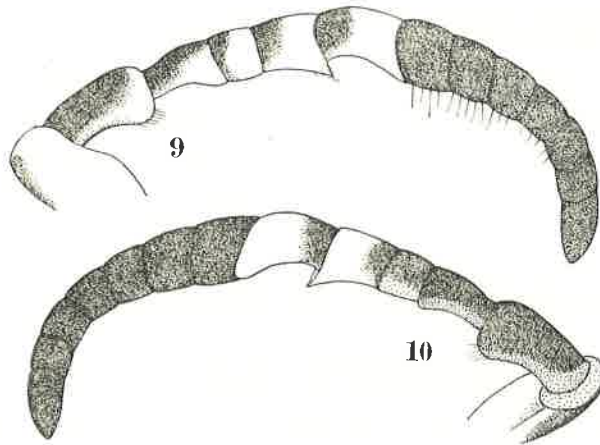
Figs. 7-8. *Rhopalum (Latrorhopalum) erraticum* Tsuneki, ♂.
7 = Antenna. 8 = Basal 4 segments of abdomen.

16. *Rhopalum (Calceorhopalum) watanabei* Tsuneki, 1952

Rhopalum (Calceorhopalum) watanabei Tsuneki, Jour. Fac. Sci. Hokkaido Univ., Ser. VI, Zool., 11: (1): 124, 1952 (Japan).

***Rhopalum (Calceorhopalum) watanabei tsuifenicum* ssp. nov.**

♂. The new subspecies is more broadly dark maculated in the antennae and legs than in the typical race, with the punctures on the vertex and mesonotum slightly larger. The structure of the clypeus similar, but the lateral angles not so acute as in the Japanese race.



Figs. 9-10. Antenna of *Rhopalum (Calceorhopalum) watanabei tsuifenicum* ssp. nov.
9 = frontal view. 10 = posterior view.

Maculation of the antenna seen in front: Fig. 9, seen from behind: Fig. 10. Legs similarly structured, but the coloration somewhat different: Fore and middle legs sulfur yellow with the following black: Fore coxae wholly, middle coxae except tip, fore femora at base and above (but not reaching the apex), middle femora except apex. Hind legs black, with the following yellow: Tip of coxae and basal ring and a stripe on inner margin of tibiae.

Holotype: ♂, Tsuifeng, Nantou Pref. (about 2500 m), 28. VII. 1971, Y. Haneda leg.

Ampulicinae collected during my second visit to Formosa

17. *Ampulex amoena* Stal, 1857

Ampulex amoena: Tsuneki, Etizenia, 21: 1, 1967.

Very many specimens were almost everywhere seen. Only 3 ♀ 5 ♂ were collected in Tsukeng, Ilan Prefecture.

18. *Trirhogma caerulea* Westwood, 1840

Trirhogma caerulea: Tsuneki, Etizenia, 21: 4, 1967.

Specimens collected: 1 ♀, Chia Pref. (Kuanhua), 1. VIII. 1968; 4 ♂, Nantou Pref. (Pempuchi), 26. VIII. 1968.

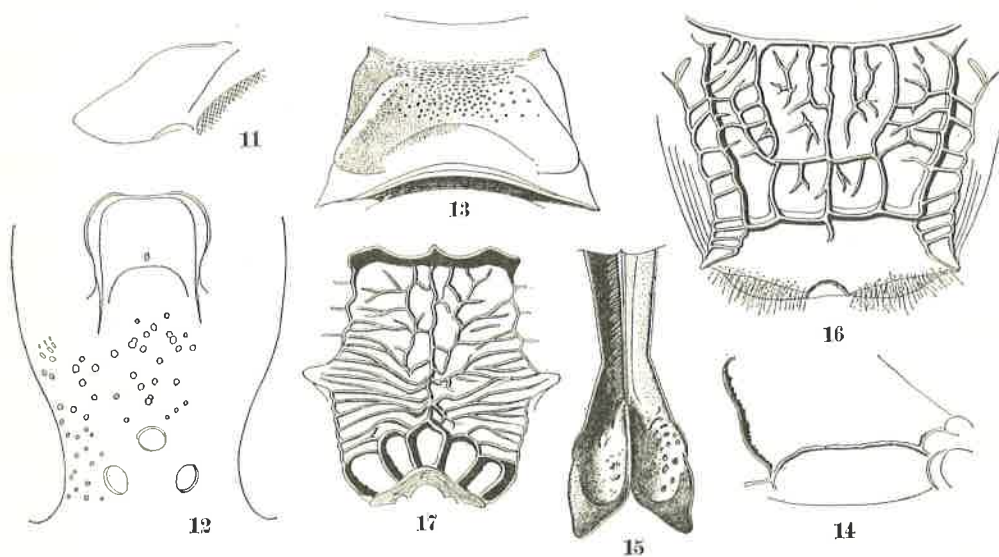
Remarks. The female specimen above listed was 25 mm in length. When captured it was climbing the wall of the broken house, carrying a nymphal insect of *Periplaneta australasiae* (Fabricius) (det. Dr. S. Asahina), measuring 18 mm in length. The males were licking the honey dew of the aphides on the leaves of bamboos.

19. *Dolichurus pempuchiensis* sp. nov.

This species (♀) may be the other sex of *D. shirozui* m. that had been known from the same valley by one male alone. Except for the difference in punctuation which is usually observed between the sexes, the sculpture on the pronotum and median segment, the relative length of cubital cell 2 and especially the form of the metasternal plate differ considerably from those of *D. shirozui* and I deal with the specimen as a separate species. Among the females of another species *D. formosanus* m. is closest to the present specimen, but is different in the form of the clypeus seen in profile, in the form of the mesosternal plate and in the much closer punctuation on the head. *D. abbreviatus* is also somewhat similar, but it differs from the specimen, besides the characters stated in connection with *D. formosanus*, in the form of the interantennal shield.

♀. Length 11.5 mm. Black, without metallic shine; a spot near apex of mandibles ferruginous; palpi, antennae apically and spines of tarsi of legs brown to dark brown. Long sparse bristles on mandibles pale brown, on clypeus, frons, pronotum and scutellum dark brown to black, short pubescence on body and legs greyish white; wings hyaline, on anterior and distal region slightly darkened.

Head seen in front slightly wider than long (10 : 9), with inner orbits convergent gently downwards and fairly strongly upwards. Clypeus in form as usual and in middle carinate, the carina on upper half strong and acute, but on lower half very obtuse and weak, in profile: Fig. 11; interantennal shield seen vertically from above: Fig. 12, fairly strongly concave, with a weak small tubercle at the centre, the surface above the tubercle not medianly carinate. Interocular distance at vertex approximately as long as antennal joints 2 and 3 combined (32 : 34), OOD : POD = 7 : 8, width of postocellus relatively 5



Figs. 11-17. *Dolichurus pempuchiensis* sp. nov., ♀.

11 = Clypeus seen in profile. 12 = Interantennal shield. 13 = Pronotum. 14 = Furrows on mesopleuron. 15 = Metasternal plate. 16 = Dorsal aspect of propodeum. 17 = Posterior aspect of propodeum.

(ocelli larger than in *abbreviatus*), each ocellus inclined externally and along its outer margin the vertex deeply and narrowly grooved. Head in profile with temple subparallel, distinctly shorter than eye; 3rd joint of antenna 4 times as long as wide at apex, nearly as long as the 4th. Pronotum (Fig. 13) with postero-lateral tubercles comparatively weak, with the medial impression also not strong, on mesopleuron the angle formed by the epicnemial and the lower longitudinal furrows (Fig. 14) acuter than in *abbreviatus*, hence the episternum appears shorter than in this (in *formosanus* the furrows broader and not well outlined inwards). Metasternal plate: Fig. 15. Structure and sculpture of propodeum on dorsal aspect: Fig. 16, on posterior aspect: Fig. 17, the outermost carinae of the dorsal side (in Fig. 15 shown by those with thick shade) especially strong and high. General structure of abdomen normal, with the anterior inclination of tergite 1 flattened, not concave, and with surface broader than in the compared species. Cubital cell 2 in fore wing with the upper vein distinctly longer than the apical vein, length ratio about 4 : 3 (in *shirozui* ♂ both the veins equal in length).

Frons very sparsely and shallowly punctured (Fig. 12, sparser than in both the compared species), within the interantennal shield the surface smooth and polished, only on uppermost area with few punctures and weak rugae, vertex smooth and shining, on the sides along the inner orbits finely, sparsely and weakly punctured. Pronotum on anterior inclination finely, closely transversely rugoso-punctate, on the collar anteriorly somewhat rugoso-punctate, on the main part punctures not confluent, fine and weak, on the lateral swollen areas almost impunctatae, except a distinct bristle-bearing strong puncture. Punctures on mesonotum very sparse and weak, mesopleuron distinctly, more closely punctured, punctures somewhat irregular in size and on upper portion somewhat rugosely confluent; sculpture on propodeum as given in figs. 16 and 17, the sides of the segment longitudinally sparsely striate, the striae anteriorly weaker and mostly not reach the anterior margin. Punctuation on abdomen normal, but the impunctate polished area on the disc of tergites slightly broader than in *abbreviatus*, on sternite 2, just behind the anterior transverse carina without sculpture, smooth (in *abbreviatus* distinctly punctured and rugose). ♂, unknown.

Holotype: ♀, Nantou Pref. (Pempuchi), 26. VIII, 1968, K. Tsuneki leg.

ADDENDA

The following specimens were sent by Mr. B. S. Chang, Kuangyin, Taoyuan Prefecture:

20. *Ammophila* (*Hoplammophila*) *aemulans rhinoceros*, Strand, 1913

Ammophila rhinoceros Strand, Arch. Naturg., Abt. A, 3: 85, 1913 (♂).

Ammophila (*Hoplammophila*) *aemulans*: Tsuneki, Kontyu, 35 (4): 384, 1967 (♂, Nanshanchi).

Ammophila (*Hoplammophila*) *aemulans rhinoceros*: Tsuneki, Etizenia, 26: 9, 1967.

Specimens examined: 1 ♀ 1 ♂, Taoyuan Pref. (Paling, 600 m), 5. V. 1971, B. S. Chang leg.

21. *Larra fenchihuensis* Tsuneki, 1967

Larra fenchihuensis Tsuneki, Etizenia, 20: 22, 1967 (Fenchihu, 1400 m).

Larra fenchihuensis: Tsuneki, Ibid., 55: 1, 1971 (Kuanghua, 1300 m).

Specimen examined: 1 ♀, Taipei Pref. (Yangmingshan, 600 m), B. S. Chang leg.

22. *Bembecinus nigriclypeus* (Sonan, 1928)

Bembecinus nigriclypeus: Tsuneki, Etizenia, 31: 12, 1968; Ibid., 56: 6, 1971.

Specimen examined: 1 ♀, Taoyuan Pref. (Paling, 600 m), 11. VII. 1969, B. S. Chang Leg.

23. *Cerceris changi* sp. nov.

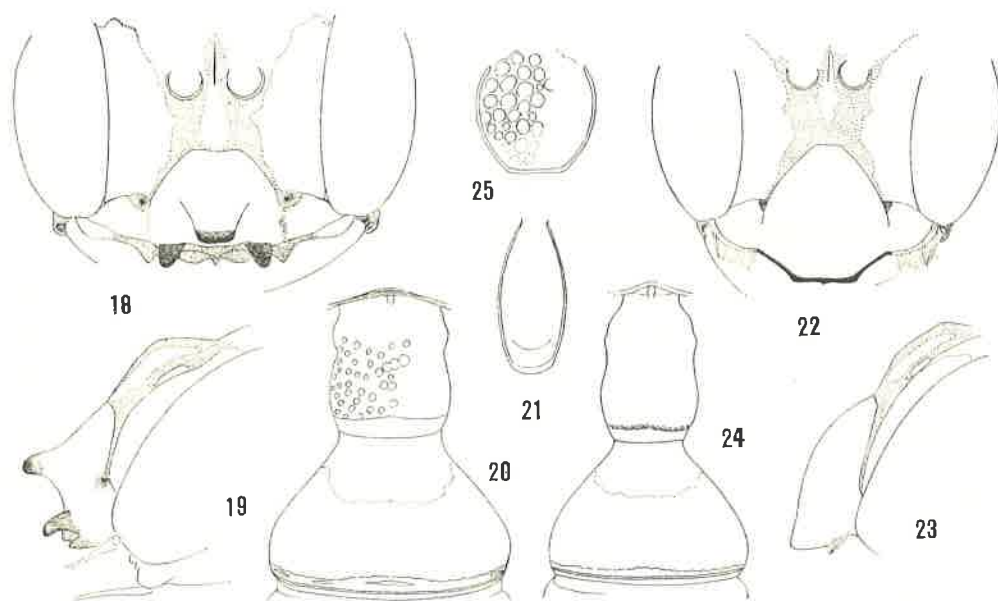
Closely resembles the Javanese species, *C. lucti* van der Vecht, differs from it, however, in the detailed structure of the clypeus and especially in punctuation of the body and coloration of the wings. In the structure of the clypeus it somewhat resembles *C. hexadonta* Strand of Formosa, but differs from it essentially in that structure and especially in the coloration of the body.

♀. Length 9.5 mm. Black with the following portions yellow or orange yellow (with an asterisk): Clypeus except apical margin (with the teeth) and the apex of lamina, mandibles except apical third, a lengthened oval marking extending from supraclypeal area to interantennal carina, large lateral marks on lower frons (Fig. 18) touching the clypeus and eye, antennal joint 1 in front, flagellum beneath*, a small spot* behind eye near top, collar* of pronotum wholly, scutellum*, postscutellum*, tegulae largely, a large mark on epimeral area of mesopleuron, two large marks on propodeum, a large medio-basal mark on tergite 2 (Fig. 20), tergite 3* wholly, posterior half of tergite 5*, apical margin of sternite 2*, apex and lateral marks of sternite 3*, apical portion of coxae and trochanters wholly of all legs, apical half of fore and mid femora, rest of fore and mid legs except arolia and brownish medial part of mid tarsi and base and apical spur of hind tibiae. Apical margin of tergite 2 very narrowly and intermittently yellowish; apical margin of clypeus and of lamina pitchy black. Wings slightly clouded throughout and markedly darkened on anterior marginal area, especially broadly so at the apical corner.

Head seen from above with OOD : POD = 11 : 7.5, width of postocellus relatively 4. Clypeus (Fig. 18) with the lamina arising below middle, but distinctly far above the line of a pair of submarginal teeth and obliquely produced anteriorly (Fig. 19, lateral view), the submarginal teeth slightly above the extreme anterior margin and also obliquely anteriorly produced, the anterior margin 5-dentate, the median and the lateral acutely pointed at apex, but the intermediate bluntly rounded (Fig. 18), lateral teeth seen in front located outside the submarginal teeth (ditto). OAD : WAS : IAD = 10 : 4.5 : 5.5. OTD : ITD** 8 : 20, CAD : AOD = 8 : 18, inner orbits except upper portion almost parallel. Head seen in profile with eye wider than temple, temple with occipital margin roundly convergent below, without the tooth on lower margin. Antenna with joint 3 twice as long as wide at apex, about 1.5 times as long as joint 4. Pronotum with collar laterally rounded and medianly without the impressed area, with the anterior inclination nearly perpendicular and the inclination subcarinate at the top, the carina laterally distinct and at the ends, seen from above, shortly toothed (in reality this is the continued carina running down the side of prothorax). On mesopleuron scrobal furrow broad and deep. Area dorsalis on propodeum nearly right-angled isosceles triangle, with the marginal furrows anteriorly very weak, with a fine impressed line in middle. Abdominal

**Always measured at the inner margin of the tentorial pit.

segments 1 and 2; Fig. 20, segment 1 slightly longer than wide at the widest part (30 : 25), pygidial area: Fig. 21. Sternite 2 at base with a platform, the platform only on marginal area swollen and the main surface slightly concave, with its apex ending distinctly before middle of the incassate part of the sternite, the swollen area laterally and in middle particularly highly raised, appearing to be trituberculate as in some species and the median tubercle slightly extended posteriorly into a short carina. Sternite 5 with postero-lateral corners roundly swollen, but not toothed, sternite 7 with two pairs of teeth, the apical and the lateral, the lateral teeth very minute, the pencil of hairs between the teeth normal. Hind coxa without the longitudinal carina, hind tibia with a longitudinal line of triangular lamellate projections, each carrying a spine at the top, the longer of the apical spurs not reaching the middle of the following metatarsus. Wing venation normal



Figs. 18-25. *Cerceris changi* sp. nov., 18-21, ♀; 22-25, ♂.

18 and 22 = Lower frons and clypeus seen in front. 19 and 23 = Ditto, seen in profile.
20 and 24 = Abdominal segments 1 and 2. 21 and 25 = Pygidial area.

Frons and vertex somewhat rugosely subreticulate with medium-sized punctures, fine ridges between punctures again micropunctulate, lower frons sparsely, similarly dupli-punctate, clypeus finely sparsely punctured; punctuation of mesonotum and scutellum also duplicate, the gross punctures slightly longitudinally confluent, slightly larger than on vertex, with intervals also somewhat broader, mesopleuron distinctly, fairly strongly reticulate, without accompanying the micropoints. Area dorsalis transversely, weakly rugoso-striate and finely sparsely, not strongly punctured, the striae becoming stronger laterally and stoutly cross the lateral furrows of the area, rest of the propodeum coarsely, somewhat sparsely punctured, punctures irregular in size. Punctures on tergite 1 also irregular in size, with considerable shining interspaces, the following tergites subreticulate, with intervals weakly micropunctulate, punctures posteriorly slightly smaller;

pygidial area transversely, coarsely, irregularly rugose. Basal platform of sternite 2 posteriorly margined by coarse punctures, lateral areas of the sternite rather grossly and sparsely punctured, disc broadly almost impunctate.

♂. Length 7.0-7.5 mm. In coloration similar to ♀, except that apical half of tergite 6, sternite 1 medio-posteriorly broadly, sternite 2 more broadly on apical margin, sternite 3 wholly except the basal triangular incision and postero-lateral spots on sternites 5 and 6 are yellow; underside of fore femora and of hind tibiae thoroughly yellow and 3 apical tarsal joints of mid legs dark brown.

OOD : POD = 10 : 7, width of postocellus relatively 3.5; OAD : WAS : IAD = 7.5 : 5.5 : 3, OTD : ITD = 6 : 18, CAD : AOD = 10 : 16, clypeus: Fig. 22, seen in profile: Fig. 23; in structure of thorax and propodeum similar to ♀, but the medial impressed line of area dorsalis sometimes indistinct. Abdominal segment 1 slightly longer, with ratio of length to width at the widest part 33 : 21 (Fig. 24), pygidial area much more rounded (Fig. 25) and very coarsely subreticulate-punctate. Platform of sternite 2 similar, but the medial carina of the disc bluntly extended till the apex of the swollen part of the segment, end sternite without the outer pair of posterior precesses. Punctuation generally similar, but on frons and vertex without micropoints on puncture-intervals; disc of area dorsalis sometimes almost without the transverse rugose striae; punctures on abdomen generally larger, with the micropoints on intervals weaker and more obsolete.

Holotype: ♀, Taoyuan Pref. (Paling, 600 m), 2. VIII. 1970, B. S. Chang leg.

Paratypes: 3 ♂, the same place and time.

OAD Oculo-antennal distance. WAS Width of antennal socket. IAD Interantennal distance. ITD Intertentorialpits distance. CAD Clypeo-antennal distance. AOD Antennocellar distance.