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**Some Fossorial Hymenoptera collected by the Osaka  
City University Biological Expedition  
to Southeast Asia 1957-58**

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**1961**

**Some Fossorial Hymenoptera collected by the Osaka  
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Through the courtesy of Dr. K. Iwata the writer had a good opportunity of investigating the specimens of the fossorial wasps which were collected chiefly in Thailand by the members of the Osaka City University Biological Expedition. The collection was not large, but a very interesting one, including two new species and one new subspecies of the genus *Trypoxylon*, one new subspecies and one unrecorded sex of a species of *Passaloecus* and one new subspecies of *Oxybelus*.

The writer wishes to express his heartiest thanks to Dr. K. Iwata. Thanks for the kindness in consulting literature are also due to Drs. S. Sakagami, K. Sekiguchi, Messrs. K. Shibuya, R. Ohgushi and Y. Murakami.

A. Genus *Trypoxylon* LATREILLE, 1802

1. *Trypoxylon obsonator tropicale* subsp. nov.

? *Trypoxylon obsonator* BINGHAM, *Faun. Brit. Ind., Hym.*, I, p. 226, 1897.

♀. The specimens examined agree well in general characters with those from Japan (type locality), but they appear to have the interocular space somewhat narrower. Measurement revealed that it is true as given in Table 1.

Table 1. Comparison between specimens of *T. obsonator*  
from Japan and Thailand.

Specimens from	Head width	Interocular distance		Number of ex. averaged
		at clypeus	at vertex	
Japan	77	16	23	4
Thailand	78	14.5	20	2

Remarks. Numerals are relative values, value 30 stands for 1 mm.

♂. The example recorded below bears the distal joints of the antennae relatively much longer as compared with those in the Japanese specimens, viz.

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in the former slightly more than 4 times as long as wide at base, while in the latter having the similar body length they are nearly 3 times as long as wide (17.5/5.8, average of 3 specimens). But the structure of the male genitalia is quite identical with that of the nominate race. They seem, therefore to represent respectively a geographical race and should be separated at the sub-specific rank.

Holotype: ♂, Chieng Mai, Thailand, 4. II. 1958, H. Ikoma leg.

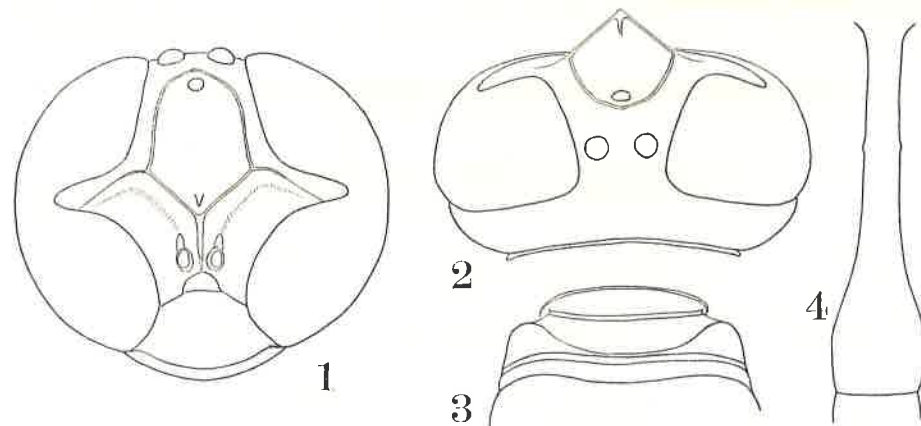
Allotype: ♀, Ibid.

Paratype: 1♀, Ibid.

2. *Trypoxylon thaianum* sp. nov.

Amongst the members hitherto known of the genus *Trypoxylon* having the frontal shield well margined by the carinae the present species most closely resembles *T. chinense* GUSSAKOVSKIJ (1937), but differs from it in the structure of the lower portion of the frontal shield and also somewhat in punctuation. The species can be distinguished from the allied Indian species, *T. pileatum* SMITH, at least by the difference in the punctuation on the thorax. It is also different from the similar *T. arabicum* GUSSAKOVSKIJ in the puncturing of the mesonotum and in the sculpture of the propodeum. From the common European *T. scutatum* the species can be separated not only by the form of the frontal shield, but also by having the short median carina on the vertex and the differently sculptured median segment.

♀. Length 10.5 mm. Totally black, with apices of mandibles, palpi, tibial spurs, apex narrowly of each tarsal joint and wing veins brownish; apical margin of pronotum rather broadly membraneous and amber-coloured. Pilosity on lower front, clypeus and temples below silvery, pubescence on other parts



Figs. 1-4. *Trypoxylon thaianum* sp. nov. 1. Head seen in front. 2. Head seen from above. 3. Pronotum. 4. The 1st abdominal segment.

of body whitish. Head seen from above (Fig. 2) with interocular distance  $1/4$  as large as width of head, with ratio of OOD:POD nearly 1:3, hind ocellus as large in diameter as POD, vertex from upper end of frontal shield to between postocelli longitudinally gently subcarinate, occipital margin distinctly carinated. Head seen in front (Fig. 1) with frontal shield rounded above and distinctly margined by carinae, lower carinae straight and forming distinct angle in middle, distance between eyes at base of clypeus nearly as large as that at vertex (ratio 6:7), clypeus with anterior margin roundly produced, with marginal area comparatively broadly glabrous and slightly raised, main part gently convex; supra-clypeal area broader than long (Fig. 1), oculo-mandibular space none. Antenna with relative length between joints 3, 4, 5, 11 and 12 respectively 9, 7, 6, 4.5, and 8. Pronotum (Fig. 3) with a transverse furrow across middle, antero-lateral portions well developed with corners rounded, anterior inclination flattened with hind margin roundly curved posteriorly, thus letting medial portion of the area in front of the transverse furrow almost none, area behind the furrow wholly membranous; mesonotum just behind pronotum rather suddenly raised, with medio-anterior short furrow very feeble, scutellum only slightly wider than long. Propodeum with area cordata raised and roughly margined by broad furrow, with similarly broad furrow in middle, the portion just behind area cordata where the three furrows joined together deeply depressed, thence a broad furrow runs to posterior inclination and reaching to apex of the segment. Abdomen with 1st segment nearly petiolate (Fig. 4), nearly twice as long as 2nd and 5 times as long as wide at apex; medial keel on caudal tergite distinct throughout and acuter towards apex. In fore wing recurrent nervure received by cubital cell at about  $2/3$  from base of the cell, radial cell slightly longer than hind tibia, not attaining to apex of the wing.

Vertex and surface of frontal shield very minutely and sparsely punctured, with intervals microscopically finely coriaceous, half-mat; mesonotum, scutellum and mesopleuron half-mat, with sparse fine punctures and sparsely covered with comparatively long greyish pubescence, punctures all aciculate. Dorsal and dorso-posterior surface of propodeum including area cordata transversely strongly and very coarsely striate, on median furrow of area cordata the striae roundly curved anteriorly, on its lateral areas mixing finer striae, interval considerably shining. Lateral longitudinal carinae separating sides of the segment from the dorsal surface distinct throughout, the sides smooth, having striae on dorsal and posterior marginal portions only.

Holotype: ♀, Li, Thailand, 27. XII. 1957, K. Yoshikawa leg.

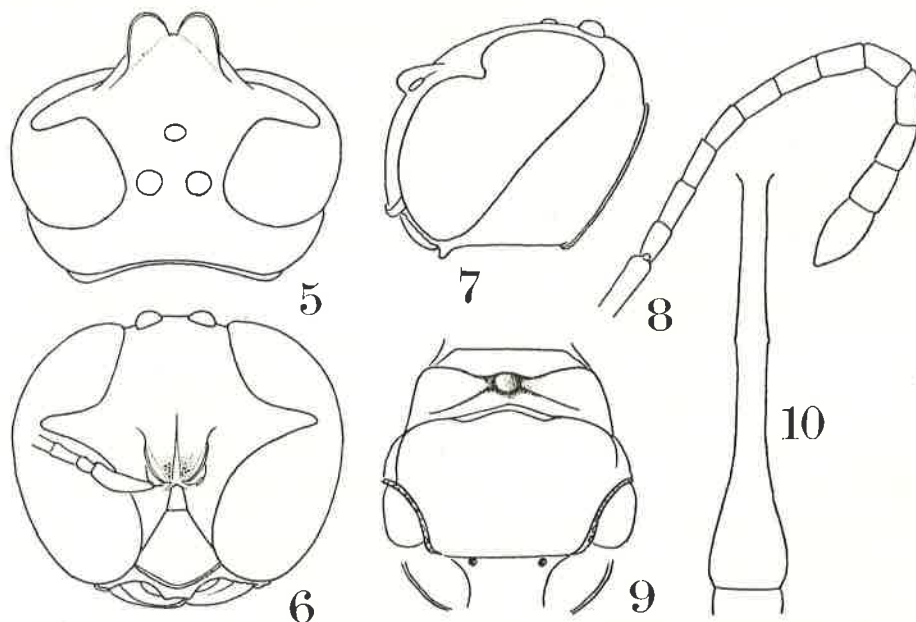
### 3. *Trypoxylon bilobatum* sp. nov.

This species is characteristic in the form of the head, clypeus, supra-clypeal area and propodeum as well as in the smallness of the body, but is

most remarkable in having two lobiform appendages just above the base of the antennae.

♀. Length 5.2 mm. Very small slender wasp belonging to the group that has the long petiolated 1st segment of the abdomen. Black and shining. Mandibles, tibiae and tarsi of front legs and metatarsi of mid legs ferruginous or pale yellow; mid tibiae and articulations of legs brownish; antennae, tegulae and veins of wings and tarsi of mid and hind legs dark brown; wings hyaline, strongly iridescent. Pubescence on lower front and clypeus rather short and silvery, close and appressed, temples, pro- and mesopleurons and apical portions of propodeum also moderately closely covered with silvery white piles.

Head seen from above (Fig. 5) very thick, with occipital margin well carinated and gently roundly emarginated, ocelli in a slightly elongate equilateral triangle, OOD:POD nearly 1:3, POD slightly smaller than diameter of postocelli, no carina between these which are larger than anterior one. Frontal median groove hardly defined. Head seen in front: Fig. 6; ratio of interocular distance near base of clypeus and at vertex approximately 2:3. Two lobiform processes just above base of antennae: Fig. 6, seen from above: Fig. 5, clypeus and supra-clypeal area as given in Fig. 6. Head seen in profile: Fig. 7, with outline of head and front very markedly rounded. Antenna: Fig. 8, with relative length of joints from base to apex: 11, 6, 8, 5, 5, 6.5, 7, 7, 7, 6, 6, 5 and



Figs. 5-10. *Trypoxylon bilobatum* sp. nov. 5. Head seen from above. 6. Head seen in front. 7. Head seen in profile. 8. Antenna of male. 9. Pro- and mesonotums. 10. The 1st abdominal segment.

10, apical joint not curved, slightly swollen near base and roundly tapering towards apex, apex pointed. Pronotum well developed (Fig. 9), with antero-lateral corners rounded and medianly in front provided with a marked tubercle, transverse furrow arising from near posterior ends of lateral margins and reaching to hind margin of the median tubercle defined, the area behind which rather evenly depressed, but not membranous; mesonotum roundly and markedly convex; scutellum and postscutellum gently so, the former nearly quadrate, bearing a small but distinct pit on each side of anterior margin (Fig. 9). Propodeum with lateral carinae distinct throughout the space, with dorsal portion elevated, area cordata feebly enclosed by shallow, rather fine grooves, with surface nearly flattened and medianly longitudinally, broadly depressed, posterior inclination with a deep median furrow, not well-defined in outlines but with a distinct bottom groove. First segment of abdomen petiolated, gently swollen only on posterior 4th and approximately 5.5 times as long as wide at apex and longer than hind coxa, trochanter and femur united, or twice as long as 2nd segment (Fig. 10). In fore wing radial cell longer than hind tibia (ratio 30:23), not attaining to apical margin, recurrent nervure jointed with cubital nervure at about 2/3 from base of the cubital cell.

Vertex and upper front smooth and polished, with a few fine punctules scattered, punctures on frons progressively slightly larger and closer below and near base of antennae rather granulate, half-mat; pro-, mesonotums and scutellum finely and closely punctured, but fairly glittering on mesonotum, laterally on the areas punctures sparser and surface polished; mesopleuron practically impunctate, polished. Area cordata on median segment anteriorly obliquely, posteriorly transversely and coarsely striate, areas near the lateral carinae finely closely punctured, sides of the segment smooth and shining, only on posterior and dorsal periferal regions narrowly striate. Abdomen normally very finely closely punctured.

Holotype: ♂, Mae Hoi, Thailand, 4. I. 1958, T. Umesao leg.

#### B. Genus *Passaloecus* SHUCKARD, 1837

##### 1. *Passaloecus sumatrensis yoshikawai* subsp. nov.

The present subspecies differs from the nominate race chiefly in the sculpture of the lower front\* and somewhat also in colour. *P. sumatrensis* MAIDL was originally described on the basis of female specimens alone. While the examples dealt with here are all males. However, the differences above men-

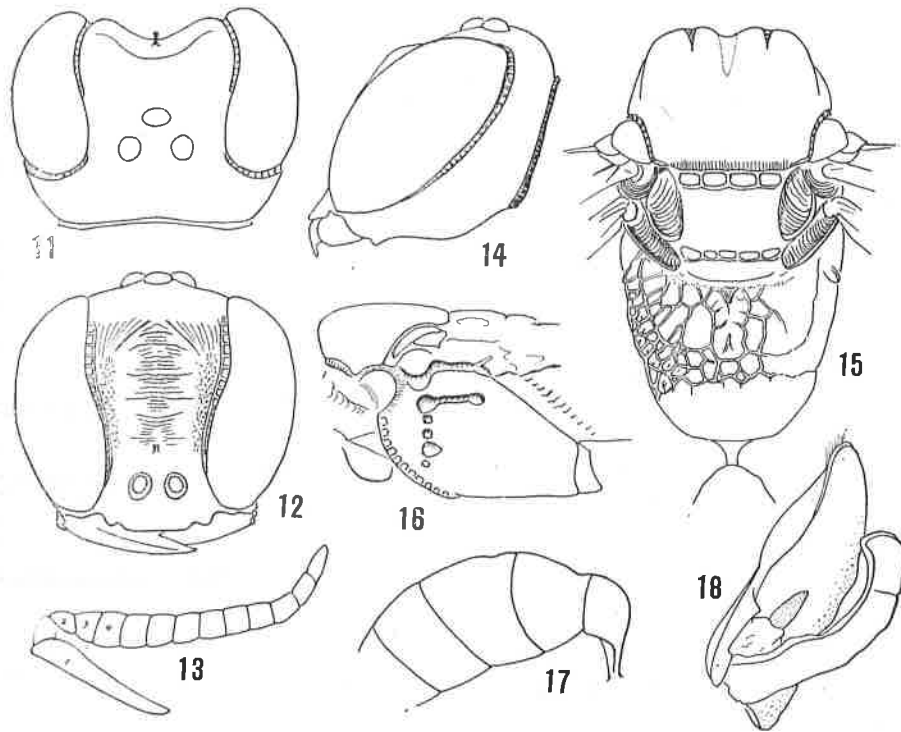
\* In the original paper the sculpture on the area is somewhat differently given between its Latin and German descriptions. Although the state given in Latin is closer to that of the present subspecies and even if it is true, the difference is very marked between the two races.



tioned seem to surpass the range of the sexual variation.\* They were, therefore, considered to represent respectively a geographical race.

♂. Length 5.5-5.8 mm. Black with a weak bronzy reflection on mesonotum. Humeral angles, extreme ends of front and mid femora, and areas near base of hind tibiae externally pale yellow; mandibles at apex, 5 basal joints of antennae wholly, joints 6-8 beneath, wing tegulae (with a dark spot), trochanters, tibiae and tarsi of front and mid legs, apices of all coxae, bases of all femora, front and mid femora apically broadly, hind femora at apex narrowly, hind tibiae externally and internally, hind metatarsi and greater part of wing veins bright ferruginous; hind tarsi dark brown. Wings hyaline, apically very slightly clouded. Lower front laterally and clypeus covered with silvery pubescence. Head seen from above: Fig. 11, occipital carina distinct, accompanied by crenate groove in front, ocelli in a low equilateral triangle, each with a conspicuous depression on external margin, OOD:POD:OCD=1:1:2.5, no carina on upper front. Head seen in front: Fig. 12. Interocular distance at vertex approximately 1.5 times as large as that at base of antennae, oculo-antennal distance subequal to diameter of antennal socket and slightly larger than interantennal distance; excavation on lower front deep, transversely rounded, without upper bordering carina but provided with a distinct frontal process a short distance (=about the diameter of antennal socket) above base of antennae which is slender, comparatively long (nearly as long as 3rd antennal joint) with apex truncate. Clypeus flattened above, with anterior margin broadly truncate in middle, on both sides of this portion, separated by a small emargination, a short rounded protuberance defined; inner orbits of eyes between upper front and base of clypeus bordered by a crenate furrow which is fringed with strong carina on inner margin. Similar crenate furrow defined on posterior margin of eye on its upper 2/3 up to the level of postocelli (Fig. 14). Antennae: Fig. 13, flagellum markedly broadened near base. Head seen in profile: Fig. 14. Thorax-complex seen from above: Fig. 15, mesonotum trisulcate in front, lateral sulci crenulate, scuto-scutellar furrow consisted of 4 large fovea, the structures similar to those in the nominate race. On propodeum area cordata defined by regularly running semicircular carinae and medianly longitudinally, broadly impressed, posterior inclination medianly longitudinally excavated; mesopleuron (Fig. 16) with a single (upper) longitudinal furrow just as in *P. abnormis* KOHL. Petiole of abdomen: Figs. 15 and 17, constriction between 1st and 2nd abdominal segments striking (Fig. 17), between 2nd and 3rd less marked, but the constriction is located, in reality, on anterior portion of the 2nd and 3rd segment respectively. Genitalia: Fig. 18. In fore wing 2nd discoidal cell large, its 1st

\* The form of the anterior margin of the clypeus is also different, but this seems to be ascribed to the sexual character, just as is the case in the closely allied species, *P. abnormis* KOHL.



Figs. 11-18. *Passaloecus sumatrensis yoshikawai* subsp. nov. 11. Head seen from above. 12. Head seen in front. 13. Antenna ( $\delta$ ). 14. Head seen in profile. 15. Thorax-complex. 16. Mesopleuron. 17. Abdomen in the lateral view. 18. Male genitalia.

recurrent nervure and 2nd transverse medial nervure subequal in length, its cubital and discoidal nervures parallel. Hind femora moderately incrassate as usual.

Vertex impunctate and polished, upper front latero-anteriorly with very minute punctules sparsely scattered, uppermost portion of facial excavation with strong, coarse and obliquely running carinae, other portions of the excavation transversely, very finely and closely striated, areas adjacent to eyes somewhat strongly, moderately closely punctured. Mesonotum finely, moderately closely, mesopleuron finely, sparsely and rather indistinctly punctured, posterior margin of mesonotum distinctly crenate. Propodeum coarsely reticulate (Fig. 15), sides of the segment obliquely, finely and closely striate.

Holotype:  $\delta$ , Nam Tha, Laos, 13. III. 1958, K. Yoshikawa leg.

Paratype: 1 $\delta$ , Ibid.

2. *Passaloecus siamensis* COCKERELL, 1931

*Passaloecus siamensis* COCKERELL, *Ann. Mag. Nat. Hist.*, X, 3, p. 37, 1931 ( $\sigma$ ).

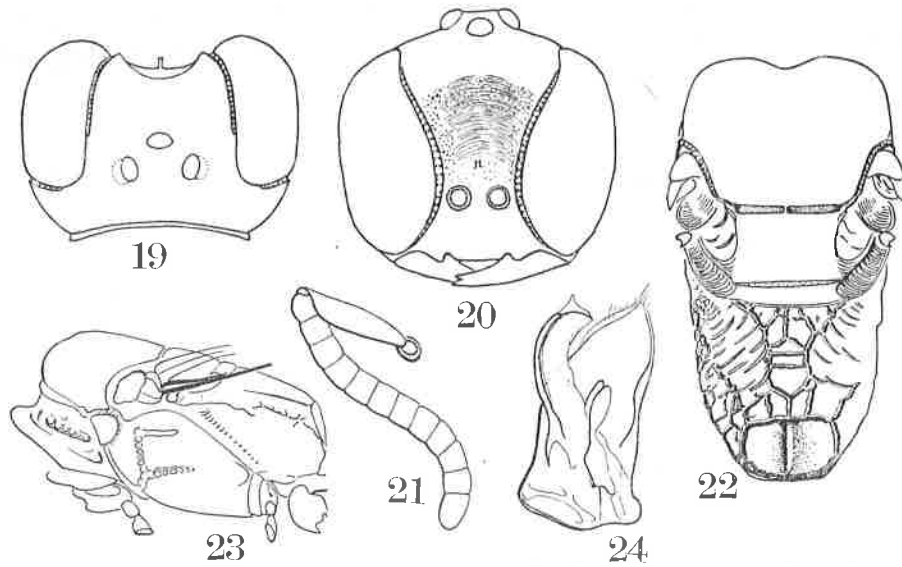


Although a specimen examined here differs from the above described species at least in the general colour of the head and thorax and in the detail of the frontal sculpture, it agrees in other characters fairly well with the description of this species. So, taking into consideration the sexual as well as the specific variations, the writer referred it to the hitherto undescribed male of this species. However, as Cockerell did not give the mesopleural character—so important in the classification of the members of the group—in his description, the final determination must be postponed until the type will be examined. Since the male of this species has been unknown and several desired distinctions were omitted in the original description, the characters of the specimen were given in full below.

♂. Length 4.7 mm. Black, with a faint bronzy lustre on head and mesonotum. Scapes of antennae, humeral angles, apical portions of all femora above, tibiae externally and tarsi of legs cream yellow; 2nd joint of antennae wholly, 3rd-10th beneath broadly, wing tegulae (with a yellow spot), apex of coxae, trochanters wholly, extreme base of all femora, front femora beneath and rest of tibial portions light ferruginous, somewhat transparent. Apices of mandibles, flagella of antennae above dark brown, the latter apically more fuscous, apical 3 joints black. Pubescence on lower front and clypeus silvery.

Head from above: Fig. 19; seen in front: Fig. 20, ratio of interocular distance at base of clypeus and at vertex approximately 5:3, oculo-antennal distance as large as interantennal distance which is half the length of diameter of the antennal socket, crenate furrows on inner and outer orbits of eyes and the frontal medial spine as in the preceding species, clypeus nearly flattened, with medio-apical margin subtruncate and rounded on lateral corners, on each side of which provided with a small rounded protuberance as in *sumatrensis*. Antenna: Fig. 21, not broadened basally. Thorax-complex in the dorsal view: Fig. 22, mesonotum roundly emarginate anteriorly in middle, thence comparatively broad furrow running down the anterior slope of the segment, no lateral crenate short furrow on each side; scuto-scutellar furrow provided with a single rib in middle; mesopleuron with two distinct longitudinal furrows which are strongly foveolate. Propodeum with area cordata not defined, only medianly broadly and deeply excavated. Abdomen strongly constricted between 1st and 2nd segments and more slightly so between 2nd and 3rd. Genitalia: Fig. 24, with apex of squama feebly pointed, while the apex of the volsella rounded in contrast with the case of the preceding species.

Vertex microscopically minutely and fairly closely punctured, upper front very delicately (defined under 30 times enlargement) coriaceous and scattered with slightly more distinct punctures which distributed closer anteriorly. Upper portion of facial excavation transversely, arcuately rugose-punctate, appearing in part subreticulate, greater part of the area transversely finely and closely



Figs. 19-24. *Passaloecus siamensis* COCKERELL, ♂. 19. Head seen from above. 20. Head seen in front. 21. Antenna. 22. Thorax-complex. 23. Thorax in the lateral view. 24. Genitalia.

striate. Mesonotum, scutellum and mesopleuron very finely coriaceous and finely, sparsely punctured. Sculpture on propodeum as given in Fig. 22.

Specimen examined: 1♂, Doi Chieng Dao, Thailand, 19. I. 1958, T. Umesao leg.

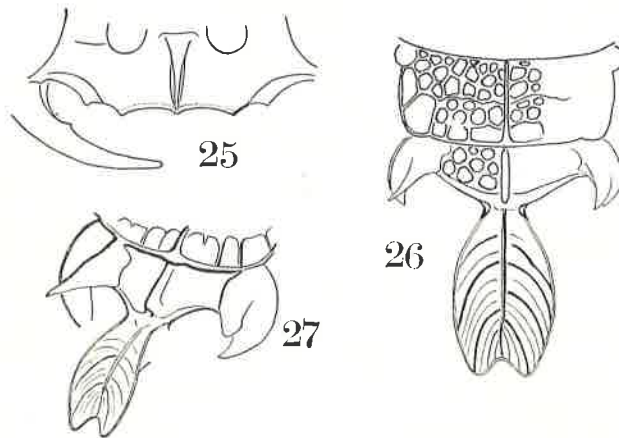
#### C. Genus *Oxybelus* LATREILLE, 1796

##### 1. *Oxybelus andalsiacus thaianus* subsp. nov.

The present subspecies differs from the nominate race (= *lamellatus* auct., *arabs* LEPELETIER, *forticarinatus* CAMERON) in the following points:

- 1) Punctuation on abdomen very much smaller and closer.
- 2) Latero-posterior spines on abdominal tergites 2-6 markedly shorter and finer, especially so on tergites 2 and 6.
- 3) Generally the hairs covering body much finer, especially markedly so on mesonotum.
- 4) Postscutellar mucro more strongly concave, with medial carina much less strong and with radiating ribs much weaker and irregular (Figs. 23 and 24). But such characters may fall within the range of specific variation.
- 5) Yellow maculae less developed, on pronotum widely interrupted in middle, on scutellum reduced to a very small spot on each side and abdominal markings also smaller.

♂. Length 4.5 mm. Clypeus: Fig. 25. Lateral laminae on postscutellum deeply bifurcate, inner lobe turning upward and slightly outward, while outer lobe downward and inward as given in Figs. 26 and 27.



Figs. 25-27. *Oxybelus andalsiacus thaianus* subsp. nov. (♂).  
25. Clypeus. 26. Scutellum, postscutellum and the mucro. 27. Ibid. seen obliquely from above.

Holotype: ♂, Doi Inthanon, Thailand, 12. I. 1958, K. Yoshikawa leg.

Remarks. (1) *Oxybelus andalsiacus* SPINOLA (1843) was previously recorded from India (Deesa) by P. Cameron (1908) under the name, *O. forticarinatus*, and later synonymized by R. E. Turner (1917) with *O. lamellatus* OLIVIER. On the other hand, V. S. L. Pate, in his investigation on the Oxybeline wasps of the Philippine Islands described, together with others, a species (*O. aequipunctatus*) which seems distinctly to come within the category of *O. andalsiacus*. However, in his species "3rd-6th abdominal tergites with small acute spines latero-apically." In this respect it agrees well with the subspecies above described. But in *aequipunctatus* "abdomen rather coarsely punctate" and, moreover, it agrees in characters of the mucro with the nominate race. Therefore, it may represent another subspecies of *andalsiacus*, viz. *O. andalsiacus aequipunctatus* PATE (Oxybeline wasps of the Philippines seem to require a revisional study).

(2) Specimens used for comparison: 3♀♀3♂♂ of *O. andalsiacus* from Portugal and Cyprus.

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