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NEW JAVANESE SPECIES OF *HADRONOTUS* (HYM., PROCT. SCELIONINAE)

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THE material with which the present short paper deals was submitted to the Imperial Institute of Entomology for determination by Dr. Leefmans, head of the Institute for Plant Diseases at Buitenzorg. It is at the request of Dr. Ferrière of the former Institute, himself too busy to undertake the task, that the writer describes the four new species which this material contains.

The specimens were all bred from the eggs of different species of Hemiptera by Mr. J. van der Vecht. The types have been placed in the British Museum.

The four species to be described have the following characters in common:—

Colour: The legs, except the coxae which are blackish-brown and the front femora which are more or less infuscated, uniformly yellow but varying in degree of brightness even in individuals of the same species; in any case, the colour of the scape, whether it be obscure or bright, will coincide pretty much with the colour of the legs. In the specific descriptions only the colour of the scape will be given as a rule.

Head clearly transverse, nowhere punctate. Frons with an impression which is margined or unmargined; in the latter case, it is defined at least, by being sculptured differently from the rest of the frons. Clypeus more or less semicircular, without a trace of lateral angles. Mandibles with 3 teeth, the upper one the longest. Eyes completely bare or with scattered, microscopic hairs which are visible only under a high magnification as in *homoeoceri*. Vertex behind, not at all margined; the occipital margin is continued upwards to as far as the temples at which point it turns abruptly inwards, describing an obtuse angle; the upper arm of this angle is very short. Posterior ocelli separated from the eye-margin by about their longer diameter. Cheeks without a trace of striation. Antennae of the male short, when folded back over the head, not extending beyond the posterior margin of the scutellum; segments 6–11 of the funicle not longer than wide.

Thorax covered with raised points or rugulosities, in no sense punctate. Postscutellum costate throughout; medially, its posterior margin is very slightly produced to form a transverse, ridge-like swelling which may be feebly emarginate. Seen from the side, the scutellum does not completely overlap the postscutellum except in individuals of *homoeoceri*. Wings uniformly yellowish- or brownish-hyaline, large, extending far beyond the apex of the abdomen; the pubescence is somewhat coarse, the hairs more or less erect and not very close together; the venation is pale and indistinct except in *leptocorisae*; the subcostalis is more or less straight, taking at the most a hardly perceptible downward curve before reaching the marginalis; marginalis about one-third as long as the stigmalis, except in *leptocorisae*; postmarginalis about twice as long as the stigmalis, its limits defined by the bristle-like hairs which arise from it.

Abdomen not obviously longer than wide.

It should be noted that such characters as those dealing with the pubescence of the wing and the arrangement and shape of its nervures in the above covering description are purely relative and have little independent value unless they are used in comparison with other species of the genus in which they are otherwise modified. The writer's paper on the African species of *Hadronotus*, now in course of preparation, will, it is hoped, show how far these and the other taxonomic details given can help in subdividing the members of the genus into fairly well-defined species-groups.

Key to the Species.

1. Frontal impression not margined by a ridge; radicle of the antennae a little more than one-third of the length of the scape *leptocorisae*, sp. n.
Frontal impression completely margined by a sharply defined ridge; radicle of the antennae distinctly less than one-third of the length of the scape 2.
2. Vertex with a distinct, though sometimes ill-defined ridge connecting the posterior ocelli 3.
Vertex without a trace of a ridge connecting the posterior ocelli *dasyini*, sp. n.
3. Vertex in front of the posterior ocelli finely and fairly regularly reticulated, the meshes of the reticulation being about equal in size to the anterior ocellus *oophagus*, sp. n.
Vertex in front of the posterior ocelli finely scabrous (the sculpture is extremely fine and quite indefinite) but with a few raised lines or reticulations forming a broken ring around the anterior ocellus *homoeoceri*, sp. n.

***Hadronotus dasyini*, sp. n.**

♀. Scape, pedicel and first 5 segments of the funicle rather intense ochreous yellow; the club has hence 5 black segments.

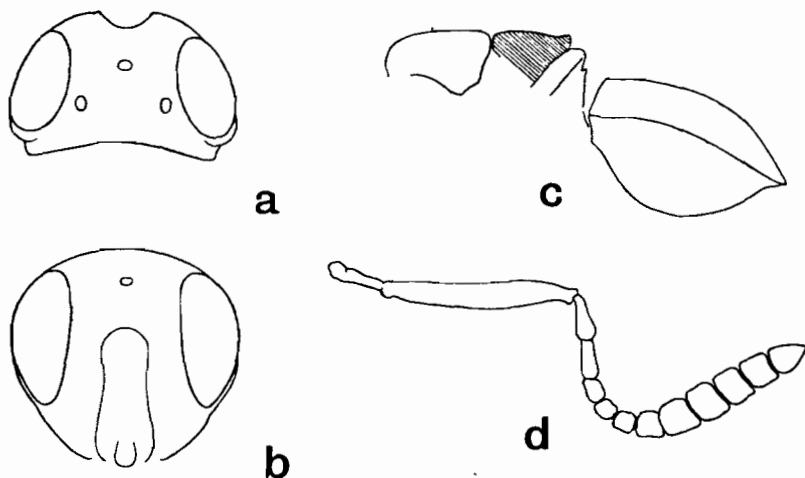


FIG. 1.—*H. dasyini*, sp. n.—a, head (from above); b, head (from in front); c, thorax (lateral); d, antenna, ♀.

Head not markedly transverse, its greatest width to its greatest length as 14:11. Frontal impression completely and sharply margined, rather narrow, about $2\frac{1}{2}$ times as long as its narrowest width, that is, just before the apex where it is very slightly narrowed; just at the point where the 2 lateral ridges bounding the impression bend inwards to meet above, a tiny ridge branches off from each almost at right angles and connects it with the inner margin of the eye; the impression is connected above with the anterior ocellus by a similar, more or less distinct ridge. Frons to the side of, and above, the impression, and the

anterior part of the vertex with strong, very distinct raised rugosities on a very finely scabrous surface which form a very irregular reticulation. Posterior, declivous part of the vertex strongly and more closely and evenly reticulated or sometimes transversely striate-reticulate. There is no trace of a carina between the posterior ocelli. The general impression of the sculpture of the head is that it is strong and coarse. Cheeks irregularly and strongly reticulated everywhere. Eyes large and close together, the shortest distance between them on the frons equal to their width. Antennae: radicle a little less than a third of the length of the scape; segment 1 of the funicle about twice as long as wide; 5 a little nearer in size to 6 than to 4 so that the club is more or less 6-segmented but is not sharply differentiated.

Thorax somewhat flattened. Mesonotum strongly and rather coarsely reticulate-rugose but the reticulate element by no means marked; posteriorly the rugosities tend to become longitudinal. The hairs are short, adpressed and each one tends to show more or less separately. Scutellum sculptured like the mesonotum, not at all gibbous posteriorly so that, when seen from the side, it is nearly in the same plane as the abdomen.

Abdomen a little narrower than the thorax, hardly longer than wide; segment 2 finely and sometimes very unevenly wrinkled over nearly its whole length; all the segments with broad, entirely smooth and shining apical bands.

The male differs from the female only in the antennae; these have the scape brownish-yellow and the funicle entirely blackish-brown.

Length: ♂♀, 1.4 mm. approx.

JAVA: Banka. Described from a series of 10 females and 2 males bred from eggs of *Dasynus piperis*, China.

The species is largely characterised by the strong, coarse sculpture of the head and of the thorax, by the large eyes and the shape of the head.

Hadronotus oophagus, sp. n.

In general appearance and size very like *dasyni*, but not as closely related to it as to the following species. It may be compared with *dasyni* as follows:—

♀. Scape, pedicel and first 4 segments of the funicle yellow; the club has hence 6 black segments, of which the first is not quite so dark as the following.

Head more transverse, nearly twice as wide as long, 28:15. Frontal impression wider, hardly twice as long as wide. Frons to the side of, and above, the impression, and the

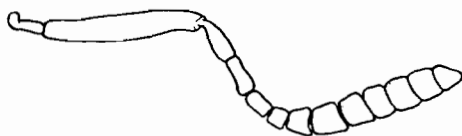


FIG. 2.—*H. oophagus*, sp. n. Antenna, ♀.

vertex in front of the posterior ocelli finely and fairly regularly reticulated, the meshes of the reticulation about equal in size to the anterior ocellus. No ridge connecting the frontal impression with the inner eye-margin. Posterior, declivous part of the vertex with well separated transverse wrinkles which are frequently interconnected by rugosities. Posterior ocelli connected by a distinct and well-marked carina. Cheeks everywhere with rugose sculpture and with a distinct (at least below) ridge midway between the genal sulcus and the occipital margin and connecting the mandibles with the temples. Eyes less large than in *dasyni*, not so close together, the shortest distance between them on the frons rather more than $1\frac{1}{2}$ times their width, 8:5. Antennae: radicle $\frac{1}{4}$ the length of the scape; segment 1 of the funicle twice as long as its greatest width; 4 a little nearer in size to 5 than to 3 so that the club consists more or less of 7 segments but is not sharply differentiated.

Thorax not at all flattened, slightly compressed laterally between the mesonotum and the scutellum, quite strongly rugose, the sculpture consisting chiefly of irregularly shaped raised points and tiny wrinkle-like rugosities; the sculpture is more or less of the same type as in *dasyni*, but less coarse. Scutellum somewhat closely reticulate-rugose, seen from the side, raised quite strongly above the level of the abdomen; it is also slightly gibbous posteriorly but by no means overlaps the postscutellum.

Abdomen: Segment 2 with delicate, irregular wrinkles over nearly its entire surface; in the middle of the segment, the wrinkles tend to be more confluent and less distinct; following segments with the apical bands extremely finely granulate so that they appear less polished than in *dasyni*.

The male differs from the female only in the antennae; these are entirely ochreous-yellow, apically sometimes a little infuscated.

JAVA: Banka, 1931. Described from a series of 4 ♀♀ and 7 ♂♂ bred from the eggs of a Coreid bug.

Hadronotus homoeoceri, sp. n.

A species very close to *oophagus* and differing from it only as follows:—

♀. *Head*: The ground-sculpture of the frons and the vertex in front of the interocellar ridge is extremely finely scabrous, without an extensive sculpture of raised lines forming reticulations, except for those raised lines or incomplete reticulations which form a distinct but irregular ring around the anterior ocellus. There is a short lateral ridge joining the frontal impression with the eye-margin, as in *dasyni*. At first sight, the head above appears to be in greater part smooth but by no means polished. Eyes virtually bare, but under a high magnification showing scattered, extremely minute hairs.

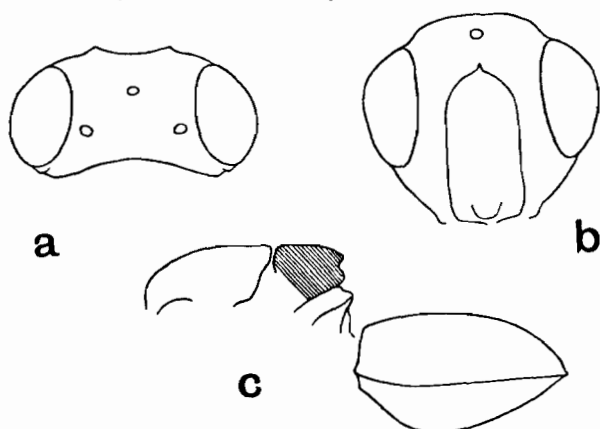


FIG. 3.—*H. homoeoceri*, sp. n.—a, head (from above); b, head (from in front); c, thorax (lateral).

Thorax: Scutellum a little more strongly and less closely reticulate-rugose than in *oophagus*, seen from the side, more raised above the level of the abdomen, more gibbous posteriorly and in the females sometimes completely overlapping the postscutellum.

♂. *Antennae*, except the scape, entirely obscure brownish.

JAVA: Buitenzorg. Described from a series of 3 ♀♀ and 2 ♂♂ bred from eggs of *Homoecerus marginellus*, H. Sch.

This species and *oophagus* are clearly more closely related to each other than to *dasyni*. Both are characterised by the ridge connecting the posterior ocelli, by the laterally compressed thorax and by the gibbous scutellum. From each other they are most easily separated by the sculpture of the head.

It is very probable that *H. homoeoceri*, sp. n., is synonymous with *H. javensis*, Dodd. The 7-segmented antennal club of the female of *javensis* suggests an affinity with both *homoeoceri* and *oophagus*. The "almost bare" eyes of *javensis* point to an identity with *homoeoceri*, but Dodd's description is too inadequate to enable his species to be fixed with certainty.

Hadronotus leptocorisae, sp. n. = *f. (var.) leptocorisae*

This insect stands apart from the three preceding species and is not to be confused with any of them.

♀. Scape of the antennae in greater part brownish, becoming yellowish on its basal third; first 4 segments of the funicle brownish; 4 paler beneath. Legs rather obscurely yellow, the front femora infuscated.

Head dull, large for the size of the insect and though clearly transverse, not conspicuously so, 22 : 15. Frons with a shallow impression which is nowhere distinctly margined and is traversed by fine wavy lines. Frons and the vertex between the ocelli very delicately and somewhat indistinctly reticulated; the meshes of the reticulations are, on the whole, considerably larger in size than the anterior ocellus. Posterior, declivous part of the vertex

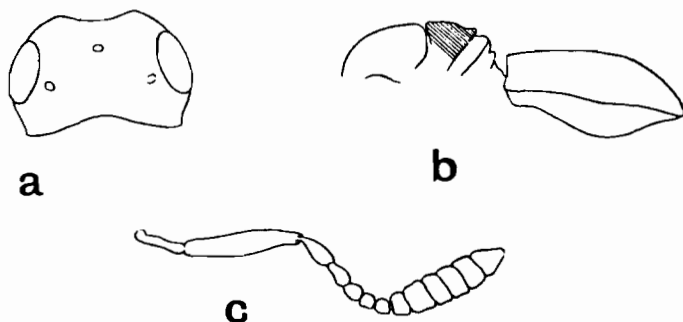


FIG. 4.—*H. leptocorisae*, sp. n.—a, head (from above); b, thorax (lateral); c, antenna, ♀.

in greater part without raised reticulations except towards the temples, dull, extremely finely granulated and appearing more or less smooth. No trace whatever of a carina between the posterior ocelli; the anterior and posterior parts of the vertex merge quite evenly and gently into one another. Cheeks behind the eyes dull and quite smooth but extremely finely granulated. Eyes rather small, the shortest distance between them on the frons, about twice as great as their width. Antennae: radicle distinctly more than one-third of the length of the scape; segment 4 of the funicle distinctly nearer in size to 3 than to 5 so that the apical 6 segments form a distinct and well-differentiated club.

Thorax a little narrower than the head, evenly convex, not at all compressed laterally between the mesonotum and the scutellum. Mesonotum very finely rugulose, the rugulosity consisting chiefly of minute, irregularly shaped points; it is clothed rather thickly with brownish hairs. Scutellum not at all gibbous posteriorly, in lateral aspect, nearly in the same plane as the abdomen. Fore-wings: subcostalis less distinct than the other veins; marginalis two-thirds as long as the stigmalis.

Abdomen: Segment 2 almost everywhere clearly and distinctly scaly-reticulate; this segment is larger in proportion to the rest of the abdomen than in the other species.

♂. Funicle brown. In all other respects, like the ♀.

JAVA: Lembang. Described from a series of 5 ♀♀ and 1 ♂, bred from eggs of *Leptocorisae acuta*, Thunb.