Entomologiske Meddelelser 35 (1967)

Noona Dan Papers No. 40.

The burrower bugs collected by the Noona Dan Expedition mainly in the Philippines and Bismarck Islands (Hemiptera: Cydnidae).

By
Richard C. Froeschner
Smithsonian Institution.

Through the kind cooperation of Dr. Børge Petersen of the Zoological Museum, Copenhagen, Denmark, the 270 Cydnidae collected by the Danish Noona Dan Expedition in the Philippines (1961) and the Bismarck Islands (1962) (Petersen, 1966, Ent. Meddr. 34:283-304) were forwarded to me for study. Confident placement of some of the species was possible only because NSF Grant G 7118 enabled the author to study types in certain European museums in 1959.

The four genera and ten species (four new to science) of Cydnidae taken included three common and widespread species of the Pacific area which range onto one or more of the continents of the Old World: *Aethus indicus* (Westwood), *Geotomus pygmaeus* (Dallas) and *Macroscytus transversus* (Burmeister). The other species appear from available distribution records to have very limited ranges. This total of genera and species represents about half of those described from the general regions visited by the expedition.

All specimens of the type series for the species described here, except for a few paratypes noted as deposited elsewhere, belong to the Zoological Museum, Copenhagen. Measurements are given in millimeters.

Aethus Dallas, 1851 List Hemip. Brit. Mus., 1:112.

The exact limits of this genus are still not clear to me, but because the following species is the type of *Aethus* I do not hesitate to use this combination.

Aethus indicus (Westwood).

Cydnus indicus Westwood, 1837 in Hope, Cat. Hemip., 1:19
Aethus indicus; Dallas, 1851 List Hemip. Brit. Mus., 1:114

Although this is a very common and widely ranging species of the Old World, it was represented by surprisingly few specimens —only ten. The range of *indicus* given in literature is quite unreliable as examination of many identified specimens makes it clear that several species have been confused under the name. However, I have seen specimens from the continents bordering the Indian Ocean and from several of the islands in that body of water; in addition from numerous islands in the Pacific Ocean from the Philippine Islands south and southeast.

Solomon Islands. — GUADALCANAL: Honiara, July 27-August 4, 2 ex.

Philippine Islands. — TAWI TAWI: Lapid Lapid, November 21, 7 ex., mercury lights; Tarawakan, November 14, 1 ex.

Chilocoris Mayr, 1864 Verh. Zool. Bot. Gesell. Wien, 14:907.

In this collection of *Chilocoris,* as in most others including members of this genus, there were very few specimens of each species. This problem of limited series has made it difficult to evaluate the significance of the many small differences noted between collections from separate localities. Nevertheless, identifications, at least tentative ones, must be made.

Chilocoris entzii Horvath.

Chilocoris entzii Horvath, 1919 Ann. Mus. Nat. Hungarici, 17:260

A specimen is identified as *entzii* whose type locality was "Friedrich-Wilhelmshaven", now Madang, on the north coast of New Guinea. The original description and my notes on the type encompass this specimen very well.

Bismarck Islands. — LAVONGAI: Banatam, March 23, 1 ex.

Chilocoris incomptus, new species.

Diagnosis: Among those members of the genus with the uninterrupted transverse impression of the pronotum and virtually concolorous pronotum, scutellum and corium, this new species is recognizable by the two subapical "pegs" on the clypeus coupled with the single, subapical "peg" on each jugum.

D e s c r i p t i o n: Holotype female, brownish yellow; polished; length of body, 2.46 mm. Oval, widest across bases of hemelytra.

Head: With three primary setigerous punctures on each jugum; length nearly three-fourths width, 0.43 : 0.58, interocular width, 0.30; clypeus as long as juga, with two subapical "pegs"; juga each on basal half with three submarginal, coarse, setigerous punctures bearing fine, hair-like setae, subapically with one setigerous puncture bearing a peg; ocellus separated from eye by a space subequal to half an ocellar diameter; dorsum without further punctures. Antennal segments, I, 0.11; II, 0.66; III, 0.23; IV, 0.23; V, 0.33 [left antenna abnormal, with but 4 segments]. Bucculae almost as high as labial segment II, abruptly and convexly terminated at posterior and anterior ends. Labium reaching between middle coxae; segment II slightly compressed, without foliaceous expansion; segments I, 0.15; II, 0.38; III, 0.23; IV, 0.20.

Pronotum: Polished; length more than half width, 0.74: 1.33; anterior margin broadly emarginate; lateral margins converging from base, more convexly so on apical third; hind margin weakly convex; transverse, submedian impression with widely separated punctures and extending uninterruptedly across the disc nearly to the side margins; anterior lobe evenly convex, with a complete, subapical line, a small patch of distinct punctures subapically on midline and two setigerous punctures antero-laterally and one submarginally near posterior angle, elsewhere impunctate; posterior lobe with a submarginal setigerous puncture on each side and a transverse row of strong, distinct, widely spaced punctures across middle of disc.

Scutellum: Length less than width, 0.70: 0.80; polished, basal transverse impression and lateral submarginal grooves with distinct punctures; disc with widely scattered, somewhat foveate punctures.

Hemelytron: Polished, colored similar to but more translucent than pronotum and scutellum; clavus with a row of punctures on basal half; mesocorium with a distinctly punctate, impressed line paralleling clavo-corial suture, and with numerous well separated, small punctures on apical half; exocorium with an interrupted row of distinct punctures from base almost to apex; costa without setigerous punctures; membranal suture very indistinct due to fusion of corium with polished, coriaceous basal part of membrane; remainder of membrane hyaline, slightly yellowed, distinctly surpassing apex of abdomen.

Propleuron: Polished, impunctate except in impressions; prosternal carinae absent.

Mesopleuron: Entire surface dulled by evaporatorium.

Metapleuron: Evaporatorium covering all but peritreme and posterior lamella; peritreme a polished, grooved band extending all the way to lateral margin of sclerite and there bent posteriorly into a lobe.

Legs: Not specifically modified.

Sternites: Polished, impunctate except in basal sutures and a row of fine, setigerous punctures near apical margin of each segment.

Type data: Holotype ♀ and one paratype ♀, Philippine Islands, PALAWAN: Brooke's Point, Uring Uring, August 14, 1961, Noona Dan Expedition (Zool. Mus., Copenhagen; paratype USNM).

The species name is the Latin adjective meaning unadorned.

Chilocoris peterseni, new species.

Diagnosis: The large size (4.05-4.10), highly polished, virtually impunctate dorsal surface (including apical third of mesocorium) coupled with the absence of a transverse, postmedian impressed line on the pronotum permit ready recognition of this species within the genus.

Description: Holotype female. Polished, piceous, length of body, 4.10 mm. Form rather oval, sides nearly parallel.

Head: Length about three-fourths width, 0.69-0.91, interocular width, 0.82; with three primary setigerous punctures; anterior outline semicircular; clypeus as long as juga, with two subapical pegs; each jugum with a submarginal row of setigerous punctures, four setae at apex of row peglike but becoming finer toward eyes and then replaced by hair-like setae; dorsum of head elsewhere impunctate; ocelli distinct, separated from eye by a space subequal to ocellar diameter. Antennal segments, I 0.26; II, 0.13; III, 0.40; IV, 0.40; V, 0.53. Bucculae almost as high as labial segment II, tapering anteriorly and posteriorly from about posterior sixth. Labium reaching posterior margin of midcoxae, segment II weakly compressed, without foliaceous expansion; segments, I, 0.26; II, 0.64; III, 0.46; IV, 0.31.

Pronotum: Length more than half width, 1.43 : 2.31; anterior margin broadly concave; lateral margins entire, gently converging from base, more abruptly so in apical third; posterior margin

broadly convex; transverse discal impression absent; anterior lobe apically with a distinct, submarginal impressed line reaching from one anterior angle to the other, laterally with small, vague, longitudinal impression near margin; posterior lobe with few, very widely scattered, fine punctures.

Scutellum: Length less than basal width, 1.10 : 1.36; apex not reaching base of membrane; basal and submarginal impressed line coarsely punctured; disc polished, with very few, widely separated, small punctures.

Hemelytron: Polished; with strong punctures forming a short row on clavus, two incomplete rows on mesocorium paralleling claval suture, and one diagonal row on exocorium; exocorium also with a few fine punctures; costa without setigerous punctures; membranal suture straight; membrane hyaline, faintly amber yellow, surpassing apex of abdomen.

Propleuron: Weakly alutaceous, impunctate except behind anterior acetabula; prosternal carinae very low, rounded, not at all carinate.

Mesopleuron: Except for polished antero-lateral angle, dulled by impunctate evaporatorium.

Metapleuron: Except for polished peritreme, posterior lateral angle of supporting sclerite and posterior lamella, dulled by impunctate evaporatorium; peritreme typical of genus, extended as a narrow, polished, grooved band almost to lateral margin of segment and there with a prominent, posteriorly expanded lobe.

Sternites: Mostly polished, with fine, longitudinal rugulae laterally.

T y p e d a t a: Holotype ♀, Bismarck Islands, NEW BRITAIN: Yalom, 1000 m, May 20, 1962, Noona Dan Expedition, Malaise trap (Zool. Mus., Copenhagen). Paratype ♀, NEW GUINEA: Hudewa, Rev. L. Wagner (S. Austral. Museum).

The paratype has considerably less rugulae present on lateral part of abdomen, but otherwise appears conspecific with the holotype.

The dedication of this species is to Dr. Børge Petersen who was a member of the field party which collected these cydnids and was generously instrumental in making them available to me for study.

Chilocoris species.

One specimen is too teneral for specific placement or descrip-

tion as a novelty. It belongs among the species having the discal transverse pronotal impression complete, not interrupted medially. The anteocular part of the head is quite short, being distinctly less than the length of an eye.

Philippine Islands. — TAWI TAWI: Tarawakan, November 11, 1 ex.

Geotomus Mulsant and Rey, Ann. Soc. Linn. Lyon (n. ser.) 13:324.

Although this genus is recorded widely from the Palearctic, Ethiopian and Austro-Oriental regions, only one of its more than forty nominal species occurs on the Pacific islands.

Geotomus pygmaeus (Dallas).

Aethus pygmaeus Dallas, 1851 List Hemip. Brit. Mus., 1:120
Geotomus pygmaeus; Signoret, 1881 Ann. Mus. St. Nat. Genoa, 16:650

This species is extremely common and very widely spread on the islands of the Pacific. The extensive, complicated and as yet incompletely solved synonymy of *pygmaeus* prevents giving accurate distribution notes, but in general, materials seen by me have come from much of the southern Asiatic mainland and many of the far-flung islands of the Pacific world as far north as Japan and Hawaii. How much of this extensive range is due to "natural" spread and how much is due to human agency is not yet known.

The present series comprises 220 of the 270 specimens of Cydnidae taken by the expedition. As in all large series of this species, some variations in size and in extent of punctation on pronotum and scutellum exist; and an occasional individual possesses three instead of the usual two preocular, submarginal setigerous punctures. Two specimens, one a nymph, were noted from "open grass land" on May 16.

Bismarck Archipelago. — MANUS: Lorengau, June 18, 1 ex. — MUSSAU: Malakata, February 15, 5 ex.; Schadel Bay, February 14, 1 ex.; Talumalaus, January 17-20, 41 ex. — NEW IRELAND: Lemkamin, 900 m, April 5-21, 114 ex. — NEW BRITAIN: Yalom, 1000 m, May 16, 1 ad, 1 ny.

Philippine Islands. — TAWI TAWI: Tarawakan, October 20-24, 24 ex., November 11—14, 7 ex.; Lapid Lapid, November 21, 2 ex. — PALAWAN: Brooke's Point, Uring Uring, August 14-23, 21 ex.

Macroscytus Fieber, 1861 Europ. Hemip., pp. 83 and 362.

With more than thirty species, this genus occurs widely and only in the Old World. Three of the five species described from the general areas visited by the expedition were collected. In addition, two new species were found and are described below.

Macroscytus annulipes Horvath.

Macroscytus annulipes Horvath, 1919 Ann. Mus. Nat. Hungarici, 17:242

The 13 examples taken by the expedition agree well with specimens identified by comparison with Horvath's two types from New Guinea.

Bismarck Archipelago. — MUSSAU: Malakata, June 9, 11, 2 ex.; Talumalaus, January 19, 3 ex. — NEW BRITAIN: Cape Hoskins, Vaisisi, at Kavuvu River (St. 81), July 9, 1 ex.; Valoka, July 10, 12, 7 ex.

Macroscytus aquilus, new species.

Diagnosis: The single, submarginal setigerous puncture immediately anterior to the eye coupled with a single costal setigerous puncture and the unicolorous legs will separate both sexes of this species from all known species in the genus.

Description: Holotype male. Length of body, 7.78; elliptical, widest at mid-length.

Head: Length slightly greater than half width, 1.09 : 1.85; interocular width, 0,97; anterior outline a flattened semicircle; juga as long as clypeus, dorsally impunctate except for the three primary setigerous punctures; ocellus large, separated from eye by a space much less than its own diameter; jugum ventrally impunctate; maxillary plate closely punctate on posterior three-fifths; antennal segments, I, 0.36; II, 0.44; III, 0.45; IV, 0.56; bucculae about three-fourths as high as labial II, with few scattered large punctures; labium reaching apices of middle coxae, segments, I, 0.86; II, 1.03; III, 1.06; IV, 0.61.

Pronotum: Unicolorous black except for piceous hind margins and humeral angles; length slightly more than half width, 2.03: 3.87; anterior margin broadly, deeply, doubly emarginate; lateral margins converging from just anterior to basal notch, more abruptly and convexly so in apical third; hind margin weakly convex; five lateral submarginal setigerous punctures on anterior lobe, one at subbasal angle; anterior lobe impunctate except for

few scattered small punctures laterally and subapically; transverse impression absent, its site marked by an irregular, broad band of distinct punctures; hind lobe with scattered small to fine punctures almost to posterior margin.

Scutellum: Longer than wide, 2.89: 2.60, polished; discally, especially on apical third, with widely scattered, distinct punctures a little larger than those of pronotum.

Hemelytron: Piceous to black, concolorous with pronotum and scutellum; clavus with one complete, impressed row of punctures and a few extra basally; mesocorium with two complete, impressed rows of punctures, disc for full length with punctures more crowded than on scutellum and varying in size; exocorium with scattered punctures finer than those of scutellum; costa somewhat flattened, with one setigerous puncture subbasally and a row of fine, elongate punctures for much of its length; membranal suture very weakly bisinuate; membrane just surpassing apex of abdomen, hyaline with weak brown infuscation centrally.

Propleuron: Anterior convexity alutaceous, impunctate except for patch of small punctures lateral of acetabulum; impression strong, with a few punctures at bottom; posterior convexity polished, virtually impunctate; prosternal carina low but sharp.

Mesopleuron: Evaporatorium covering all of surface except broad, curved, polished band from antero-lateral angle to middle of posterior margin.

Metapleuron: Evaporatorium reaching more than three-fourths of distance to lateral margin of supporting sclerite; osteolar peritreme without a polished lobe apically.

Sternites: Shining, weakly and irregularly wrinkled laterally; each segment with a spattering of small punctures posterior to spiracles; visible sternites IV and V each with a setigerous tubercle near postero-lateral angle.

Legs: Unicolorous; anterior and middle pair not specifically modified; hind tibia with weak basal emargination followed by about 5-7 weak denticules.

Terminalia: Genital capsule smooth, polished, virtually impunctate; apical margin virtually straight.

Female: Very similar to male, but with lateral abdominal wrinkles stronger and more numerous and hind tibia not modified as there.

T y p e d a t a: Holotype ♂ (April 12), allotype ♀ (April 5) and

two paratype females (April 12 and 17), all from Bismarck Islands, NEW IRELAND: Lemkamin, 900 m, 1962, Noona Dan Expedition (Zool. Mus., Copenhagen; one paratype, USNM).

Comments: In the absence of outstanding characters, the euphonious and generally descriptive name *aquilus* is given. It is Latin for dark colored or blackish.

Macroscystus noonadanae, new species.

Diagnosis: Among those species of the genus with a single preocular, submarginal setigerous puncture on each jugum, and unicolorous femora, this species differs from all except *pfeifferi* by having a sharply impressed row of punctures across the transverse pronotal impression and no abdominal punctures mesad of the triangular patch of crowded fine punctures posterior to the spiracles. From *pfeifferi* the males differ mainly by having one to three faint tubercles distad of the basal emargination on the ventral margin of the posterior tibia rather than the large, triangular angulation of *pfeifferi* (see comments below for separating females).

Description: Holotype male. Length of body, 7.95. Elongate, elliptical, sides subparallel; surface, except minutely alutaceous coria, polished.

Head: Length nearly two-thirds of width, 1.20 : 1.89; interocular, width 0.92; anterior outline semicircular; juga as long as clypeus, dorsally impunctate except for the three primary setigerous punctures; ocellus large, separated from eye by a space distinctly less than its own diameter; jugum ventrally impunctate; maxillary plate coarsely and closely punctate on posterior three-fifths; antennal segments, I, 0.39; II, 0.45; III, 0.65; IV, 0.79; V, 0.97; bucculae almost as high as labial segment II, with a few scattered large punctures; labium reaching hind margin of middle coxae, segments, I, 0.70; II, 1.17; III, 1.04; IV, 0.52.

Pronotum: Unicolorous; length about half width, 1.95 : 3.71; anterior margin broadly, shallowly concave; side margins converging from basal notch, more convexly so in apical third; hind margin weakly convex; 3 lateral submarginal setigerous punctures on anterior lobe and 1 in subbasal angle of posterior lobe; anterior lobe with distinct punctures forming an arcuate, subapical transverse band and irregular patch on each side; transverse impression abruptly impressed, with a row of strong punctures, both inter-

rupted medially; hind lobe with several irregularly spaced punctures discally.

Scutellum: Longer than wide, 3.06 : 2.47; polished, with numerous coarse, weakly sunken punctures irregularly spaced over most of surface except on base and in basal angles.

Hemelytron: Virtually unicolorous, little paler than pronotum and scutellum; clavus with one complete impressed row of punctures and some punctures basally; mesocorium with two complete, strongly impressed rows of punctures paralleling claval suture, elsewhere with scattered punctures becoming coarser basally; exocorium with very few punctures, these finer than those of mesocorium; costa with two setigerous punctures; membranal suture very weakly bisinuate; membrane just surpassing apex of abdomen, hyaline, faintly clouded with fuscous on apical half.

Propleuron: Anterior convexity alutaceous, with numerous small punctures anteriorly and widely scattered minute ones on disc; impression strong, with crowded, very coarse punctures which become finer and sparser posteriorly, hind margin impunctate.

Mesopleuron: Dull and wrinkled evaporatorium covering all except curved, broad, polished band extending from antero-lateral angle to middle third of hind margin.

Metapleuron: Evaporatorium reaching about four-fifths to lateral margin of supporting sclerite; osteolar peritreme without a polished lobe apically.

Sternites: Shining, weakly and irregularly wrinkled except on middle third; each segment with triangular patch of dense, fine punctures posterior to spiracle; visible sternites II-V each with a small setigerous tubercle in postero-lateral angle.

Legs: Unicolorous; anterior and middle pair not specifically modified; posterior femur ventrally with a short but distinct spine subapically on each margin; posterior tibia (viewed anteriorily) ventrally with a weak basal emargination followed by a weak, blackened tubercle.

Terminalia: Genital capsule smooth, polished, virtually impunctate, apical margin very weakly sinuate medially.

Female: Very similar to male except hind tibia not modified as there.

Type data: Holotype ♂, allotype ♀ (both October 8) and three paratype females (October 8-12), all from the Philippine Islands, BALABAC: Dalawan Bay, 1961, mercury lamp, Noona

Dan Expedition (Zool. Mus., Copenhagen; one paratype, USNM).

Comments: In structure this species is so very close to *pfeifferi,* with which it was collected, that one might readily consider it but a variant. However, experience with other members of the genus has convinced me that the secondary sexual characters of the male's hind leg are quite constant and serve reliably for separating species. The females of *noonadanae* are even more similar to that sex of *pfeifferi* and may be difficult to separate therefrom unless both species are present: *pfeifferi* females are longer, measuring 9.90-10.05 and have the color of the corium more nearly as dark as the scutellum and pronotum; the females of *noonadanae* are shorter, 7.65-8.40, and have the coria noticeably browner than the general blackish shade of the pronotum and scutellum.

Macroscytus pfeifferi Signoret.

Macroscytus pfeifferi Signoret, 1883 Ann. Soc. Ent. France, ser. 6, 3:468, pl. 13, fig. 126.

On the little island of Balabac, just north of the type locality island of Borneo, two males were collected. They agree very closely with specimens I determined by comparison with the type in the Naturhistorisches Museum in Vienna, Austria. A second species which is very similar to *pfeifferi* and collected with these two specimens is described elsewhere in this paper as *aquilus.*

Philippine Islands. — BALABAC: Dalawan Bay, October 7, 12, 2 ex., mercury lamp.

Macroscytus transversus (Burmeister).

Cydnus transversus Burmeister, 1834, Nov. Ac. Leop. Carol, 16 (supplement):291, pl. 1

Macroscytus transversus; Stål, 1876 Svenska Vet. Ak. Handl., 14(4):19

This species is reported for many localities from India, China and Japan south to Java and New Guinea.

The series taken by the expedition consists of two large (9.60 and 9.92) females from New Ireland and three small individuals, two males (7.28 ond 8.10) and one female (7.94) from the Philippine Islands. There appears to be no other reason to doubt their specific identity.

Bismarck Archipelago. — NEW IRELAND: Lemkamin, April 12, 17, 2 ex., mercury lamp.

Philippine Islands. — BONGAO I: Port Bongao, November 26, 2 ex. — PALAWAN: Uring Uring, Brooke's Point, August 25, 1 ex.

Summary.

The 270 Cydnidae collected by the expedition to the Philippine Islands and the Bismarck Archipelago contained ten species in four genera. These numbers represent about half of the genera and species described from the areas visited. Four of the species were new, two in *Chilocoris* and two in *Macroscytus*.