

PACIFIC INSECTS

Vol. 4, no. 4

December 15, 1962

Organ of the program "Zoogeography and Evolution of Pacific Insects." Published by Entomology Department, Bishop Museum, Honolulu, Hawaii, U. S. A. Editorial committee: J. L. Gressitt (editor), J. R. Audy, D. E. Hardy, M. A. Lieftinck, T. C. Maa, I. M. Mackerras, L. W. Quate, J. J. H. Szent-Ivany, R. Traub, R. L. Usinger and K. Yasumatsu. Devoted to studies of insects and other terrestrial arthropods from the Pacific area, including eastern Asia, Australia and Antarctica.

THE TINGIDAE OF AMBOINA, LARAT, AND KAI ISLANDS (Hemiptera)

By Carl J. Drake and Florence A. Ruhoff*

The fauna of the islands of the South Pacific and Indian Oceans is unusually rich in species and striking forms of lacebugs. Although species have been described from many of the islands, little or no collecting has been done on a large number of them.

The present paper is based upon specimens kindly sent to the authors by Hugh B. Leach, California Academy of Sciences, San Francisco, and J. Linsley Gressitt, Bishop Museum, Honolulu, Hawaii, as well as material in the Drake Collection (United States National Museum). The holotypes of all new species are deposited in the collection of the above mentioned academy.

For the fine illustrations, the authors are indebted to Elsie H. Froeschner and Patricia J. Hogue, both of Arlington, Virginia. The paper is a by-product of studies of the Tingidae being supported in part by National Science Foundation Grant 18721.

AMBOINA I. Seven species of tingids are recorded in the literature from Amboina: *Cysteochila aspera* Drake and Poor, *Eteoneus homelys* Drake and Ruhoff (fig. 1), *Diconocoris javanus* Mayr, *Cottothucha oceanae* Drake and Poor (fig. 2), *OrotinGIS muiri* Drake and Poor (fig. 3), *Stephanitis amboinae* Drake and Poor, and *S. australis* Drake and Poor. The species being reported for the first time from there are *Cysteochila abundans* Drake and the new form described below.

Engynoma citra Drake and Ruhoff, n. sp.

Small, oblong, brownish testaceous with pronotal disc and body beneath brown; elytra with a slightly indicated, fuscous crossband near middle; cephalic spines testaceous. Length 2.62 mm, width (elytra) 1.00 mm.

Head very short, only slightly produced in front of eyes; cephalic spines very long, median erect, frontal pair porrect, and occipital pair decumbent. Antennal tubercles small, blunt, each concave within. Antenna very slender, moderately long, inconspicuously se-

* Both of Smithsonian Institution, Washington, D. C.

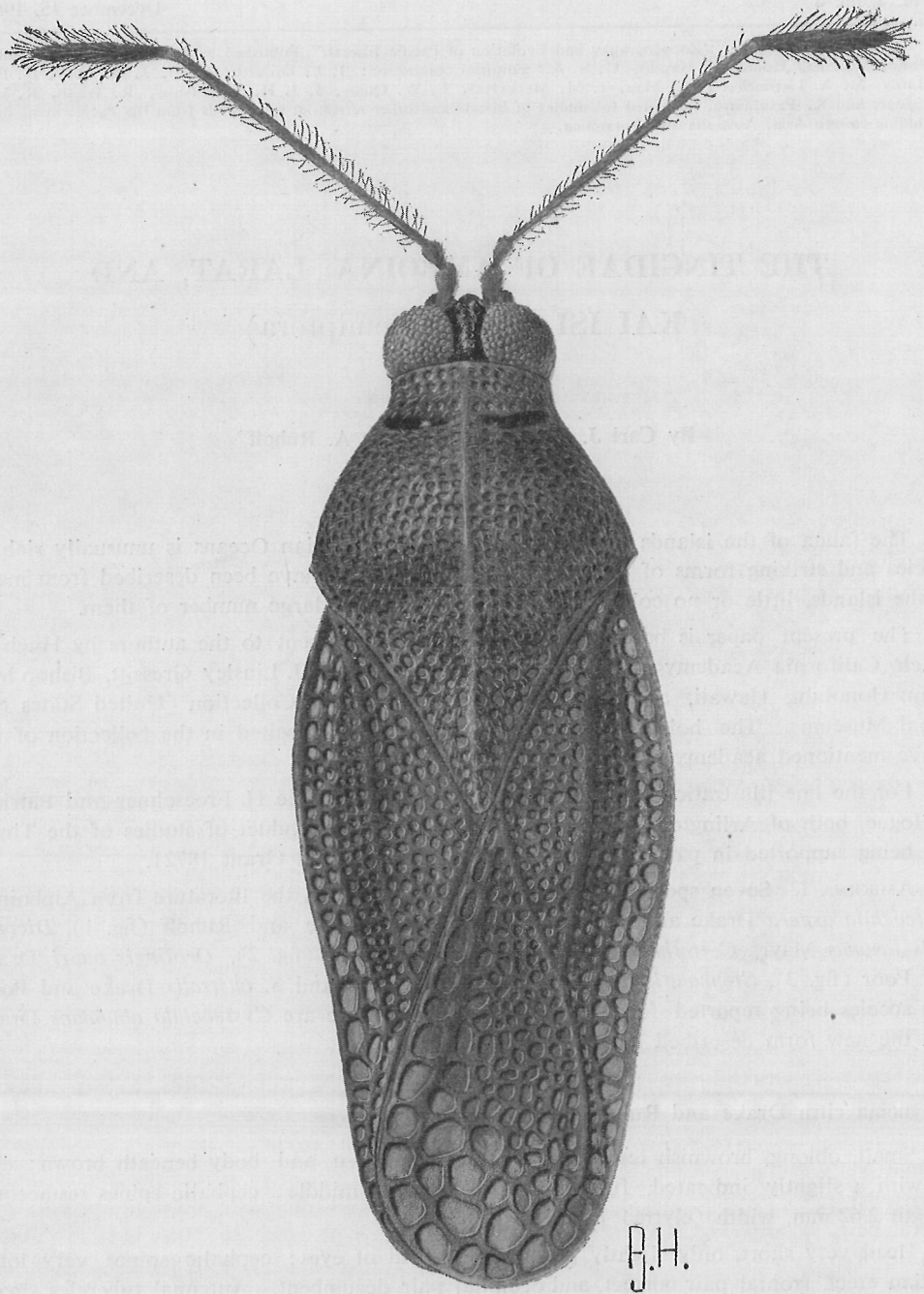


Fig. 1. *Eteoneus homelys* Drake and Ruhoff.

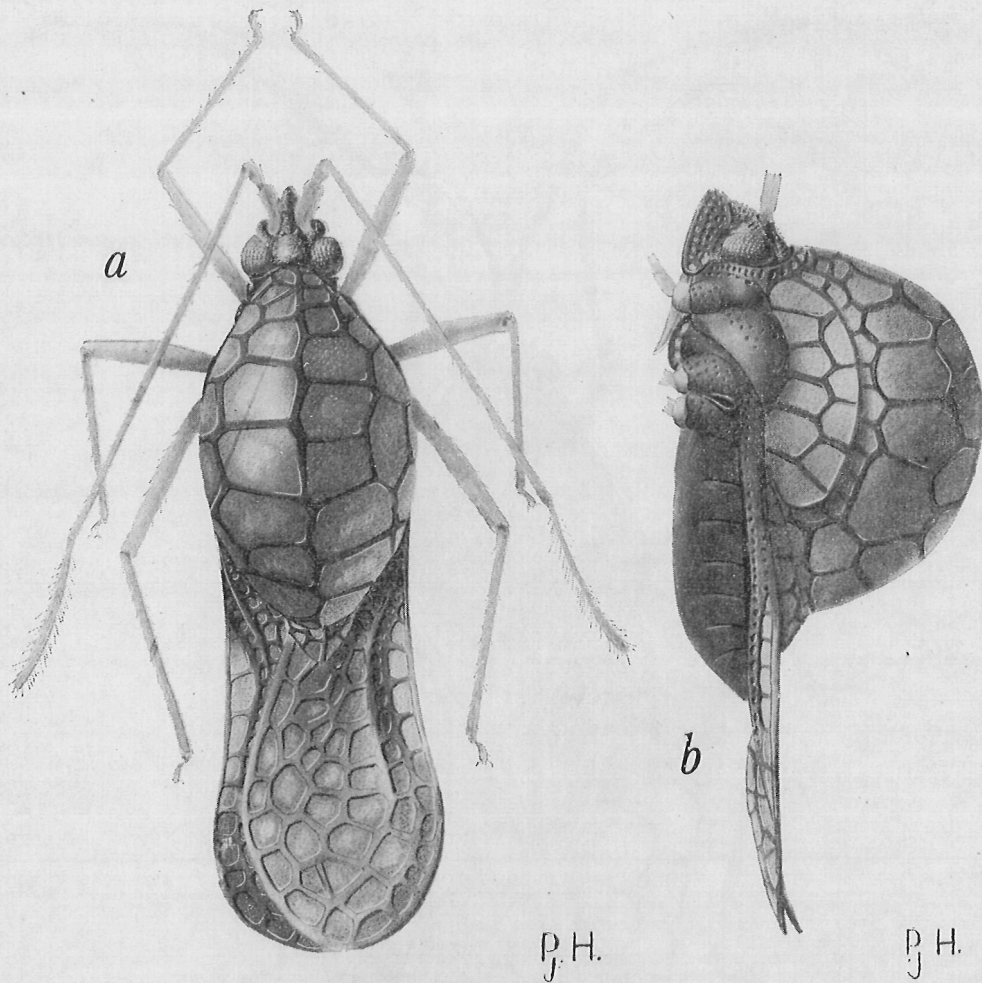


Fig. 2. *Cottothucha oceanae* Drake and Poor.

tose, measurements: segment 1, 0.18 mm; 2, 0.15 mm; 3, 0.62 mm; 4, missing. Bucculae wide, areolate, anterior ends meeting in front of labium; reaching a little beyond middle of mesosternum; labial laminae of rostral sulcus wide, areolate, nearly parallel, open at base.

Pronotum moderately convex across humeral angles, coarsely punctate; tricarinate, all carinae very strongly raised, folicaceous, biseriate with basal row of areolae much smaller than outer row; median carina more elevated and with higher arch on pronotal disc than lateral pair; lateral carinae divergent anteriorly, each concave on inner side in front of middle of pronotal disc; hood small, triangularly extended backwards between calli, with a long, erect, spine on each side at callus; paranotum narrower than pronotal carinae, reflexed nearly upright, biseriate, with basal row of areolae much smaller than outer marginal row, armed with 3 or 4 long spines on exterior margin (1 at latero-anterior corner, 1 opposite callus, other 2 between there and humeral angle). Legs slender, sparsely cloth-

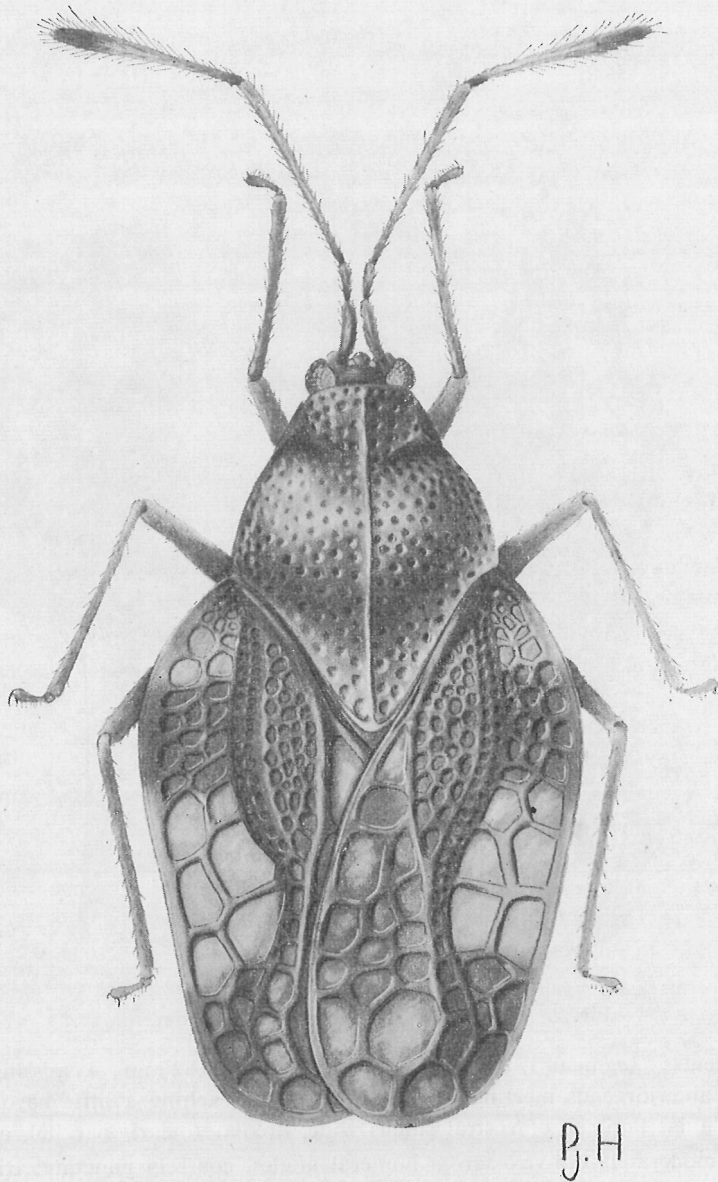


Fig. 3. *Orotinis muiri* Drake and Poor.

ed with pale inconspicuous pubescence.

Elytra wider than abdomen by width of costal areas, sutural areas overlapping each other so that their apices lie jointly rounded in repose; without tumid elevations; costal area moderately wide, biseriata, composed of 2 rows of areolae, cells of outer marginal row distinctly larger than those of inner row; subcostal area nearly vertical, composed of

3 rows of small areolae; discoidal area about $5/8$ as long as elytra, widest near middle, there 6 areolae deep, acutely angulate at base and apex; hypocostal lamina composed of single row of small areolae. Hind wings slightly longer than abdomen, densely clouded with fuscous.

Holotype, (macropterous ♀), Amboina, Amboina I., Malay Archipelago, F. Muir.

This genus was known heretofore by several species from the Australian mainland, Tasmania, and some coastal islands near the Queensland Coast. The biseriate costal areas, paranota, and pronotal carinae separate it at once from all its Australian congeners.

LARAT I. Four species are recorded in the literature, from Larat: *Cantacader laratanus* Drake, *Cysteoichila euphues* Drake and Ruhoff, *Haedus vicarius* (Drake), and *Stephanitis laratana* Drake. One new species, described below, is the only additional tingid record for the island.

***Dictyla icela* Drake and Ruhoff, n. sp.**

Small, oblong, testaceous with veinlets of pronotum between humeri and many veinlets of elytra fuscous to dark fuscous, areolae whitish, mostly subhyaline; head blackish fuscous, eyes black; body beneath black, slightly shiny. Legs testaceous with tarsi dusky or fuscous. Antenna testaceous with segment 4 brown to fuscous. Length 2.35–2.50 mm, width (elytra) 0.80–0.90 mm.

Head very short, armed with short pale spines, occipital spines sometimes absent; bucculae brown, areolate, closed in front. Antenna slender, nude, measurements: segment 1, 0.09 mm; 2, 0.08 mm; 3, 0.70 mm; 4, 0.30 mm. Labium brown, nearly reaching to base of mesosternum; rostral laminae brown, areolate, widely cordate and closed at base on metasternum.

Pronotum moderately convex, almost entirely concealed by reflexed paranota, only small hood, part of median carina, and triangular process uncovered; hood very small, feebly convex on front margin; posterior process triangular, areolate; lateral carinae visible only on triangular process, there convergent anteriorly, all carinae without areolae; paranota very large, completely reflexed. Legs slender, nude. Ostiolar canal of scent glands not visible on either metapleuron.

Elytra a little wider and longer than abdomen. The sutural areas overlapping each other in repose; costal area composed of 1 row of large nearly quadrate areolae; subcostal area biseriate in front of tumid elevation, triseriate just behind elevation, thence uniseriate apically; discoidal extending a little beyond middle of elytra, with boundary vein separating discoidal and subcostal areas sharply obtusely raised a little before apex, there extending deeply into subcostal area, obtusely angulate at apex, areolae deep near apex, tapering to one areolae at base. Hind wings dark fuscous, shorter than elytra. Hypocostal area brown, uniseriate.

Holotype ♂, and allotype ♀, both macropterous, Larat, Tanimber Is., X. 1907. Paratypes: 2 specimens, taken at same time as type.

This species belongs to the group of *Dictyla* that include *D. amitina* (Horváth) and *D. aima* Drake of Australia, and *D. formosa* (Drake) and *D. sauteri* (Drake) of Taiwan and the Philippines. It can be distinguished from these species by the larger paranota, wider elytra, and larger areolae of costal areas.

KAI (KEI) I. Heretofore, tingids were unknown from Kai Island. We have two species collected at Toeal, Kai I.: *Leptoypha anceps* (Horváth) (Australian indigene) and the new genus and species characterized below.

***Aeipeplus* Drake and Ruhoff, n. gen.**

Type species, *Aeipeplus kaianus*, n. sp.

Head very short, little produced in front of eyes, armed with dorsal spines; eyes moderately large; bucculae wide, areolate, with ends curved inward and meeting in front of labium. Antenna rather short, slender, distinctly granulate; segment 1 and 2 short, slightly swollen; 3 longest, slenderest, granulate; 4 fusiform, nearly 1/2 as long as 3. Antennal tubercle short, blunt, concave within. Pronotum broad, punctate, tricarinate; median carina low; lateral carina high, areolate, reflexed inwardly so as to lie extended on pronotal disc with upper margin of each touching median carina; hood small, inflated; paranotum wide, areolate, completely reflexed. Legs rather short, distinctly granulate, femora slightly swollen.

Elytra wider and a little longer than abdomen; costal area fairly wide; subcostal area nearly vertical; discoidal extending behind middle of elytra, on same horizontal level as sutural area. Dorsal surface slightly rugulose, also pronotum slightly rugulose. Lateral margins of pronotum and elytra armed with some short, rounded, blunt teeth.

This genus, allied to *Trachypeplus* Horváth in general aspect, is easily distinguishable 1) by the foliaceous lateral carinae, which are totally reflexed inward and rest spread out on the pronotum with upper margin against the median carina and 2) by the granulate antennae and legs.

***Aeipeplus kaianus* Drake and Ruhoff, n. sp. Fig. 4.**

Small, elyptical, dark fuscous with reflexed paranota in front of humeri pale testaceous; hood brownish testaceous; head black with dorsal spines brownish; costal area mostly brownish with some veinlets dark fuscous; discoidal areas with apices brownish or testaceous-brown; body beneath black. Antennae with segments 1 and 2 black, 3 brownish, and 4 dark fuscous. Legs dark fuscous with tibiae brown, and tarsi fuscous. Length 2.75 mm, width (elytra at middle) 1.26 mm.

Head short, armed with 5 long, appressed spines; bucculae wide, triseriate, open in front. Labium dark fuscous, extending between hind coxae; laminae of labial sulcus blackish, areolate, parallel, open at base. Antenna rather short, slender, granulate, segment 4 fusiform, measurements: segment 1, 0.09 mm; 2, 0.08 mm; 3, 0.50 mm; 4, 0.24 mm.

Pronotum moderately convex, coarsely punctate, rugulose, tricarinate; median carina low, without areolae; lateral carinae foliaceous, divergent anteriorly, each reflexed inward and resting flatly on pronotal surface with dorsal margin touching median carina, widest in front, there triseriate, tapering posteriorly, uniseriate at base. Hood moderately large, truncate in front, tapering posteriorly, extending backwards between calli. Paranotum wide, widest at humeral angle, reflexed covering a small part of the reflexed lateral carina on pronotal disc. Metasternal scent gland without distinct ostiole and canal on metapleuron. Legs rather short, distinctly granulate, femora only slightly swollen. Pubescence on

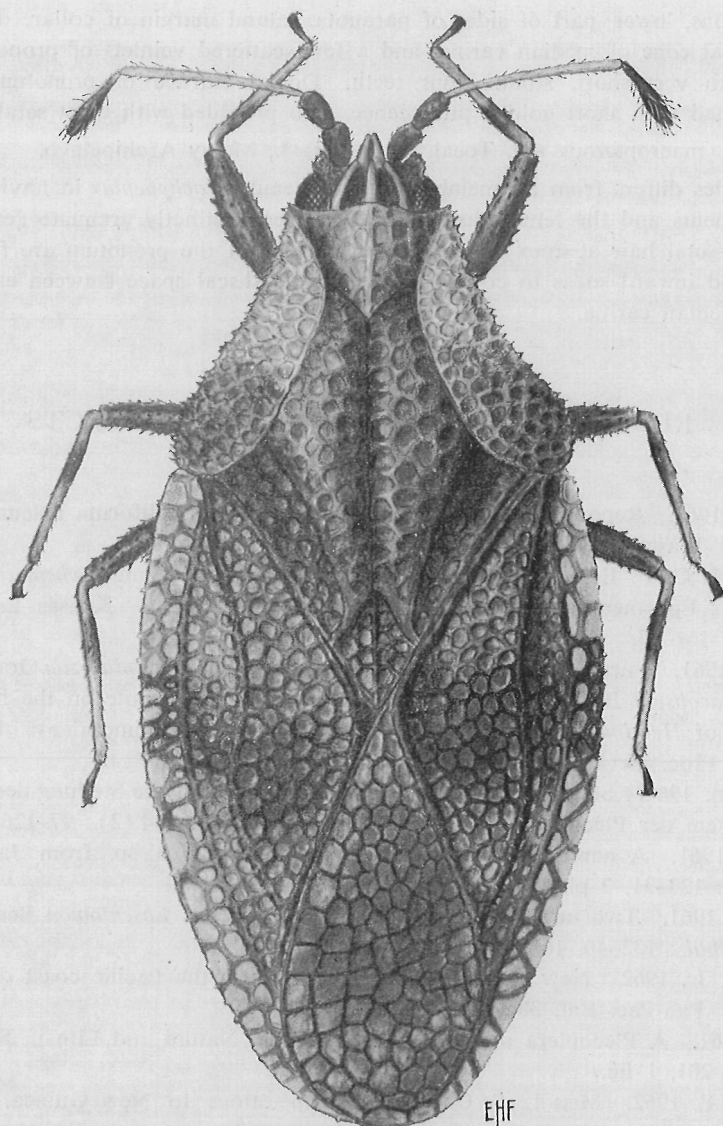


Fig. 4. *Aeiplus kaianus* Drake and Ruhoff, n. sp.

legs and body beneath sparse, very short, whitish.

Elytra widest near middle, with lateral margins convex, sutural areas overlapping so that apices rest jointly rounded in repose; hypocostal lamina moderately wide, uniseriate; costal area fairly wide, biseriate, areolae not arranged in very regular rows; subcostal area nearly vertical, triseriate in widest part; discoidal area extending beyond middle of elytron, with outer boundary vein slightly arcuate, acutely angulate at base and apex, 5 or 6 areolae deep in widest part just behind the middle. Lateral margins and boundary veins of

elytral divisions, lower part of sides of paranota, lateral margin of collar, dorsal surface of hood, dorsal edge of median carina, and a few scattered veinlets of pronotum and elytra armed with very short, stout, blunt teeth. Dorsal surface of pronotum and elytra sparsely clothed with short golden pubescence, also provided with erect setal pubescence.

Holotype (macropterous ♂), Toeal, Kai (Kei) I., Malay Archipelago.

This species differs from all members of the genus *Trachypeplus* in having the first 3 antennal segments and the femora and tibiae of the legs distinctly granulate (each granulate bears a short setal hair at apex). The lateral carinae of the pronotum are foliaceous and totally reflexed inward so as to cover completely the discal space between each at lateral carina and median carina.

RECENT LITERATURE ON PACIFIC INSECTS

SMALLER ORDERS

- Acker, T. S. 1961. Report on Spongilla-flies at Clear Lake, California (Neuroptera: Sisyridae). *Wasmann Jour. Biol.* **19** (2): 283-86.
- Allen, R. K. & G. F. Edmunds, Jr. 1961. A revision of the genus *Ephemerella* (Ephemeroptera: Ephemerellidae). III. The subgenus *Attenuatella*. *Kansas Ent. Soc., Jour.* **34** (4): 161-73.
- Giles, E. T. 1961. Further studies on the growth stages of *Arixenia esau* Jordan and *Arixenia jacobsoni* Burr (Dermaptera: Arixeniidae), with a note on the first instar antennae of *Hemimerus talpoides* Walker (Dermaptera: Hemimeridae). *Roy. Ent. Soc. Lond., Proc.* **36** (1-3): 21-26, 2 figs.
- Illies, Joachim. 1961. Südamerikanische Notonemourinae und die Stellung der Unterfamilie im System der Plecopteren. *Schweiz. Ent. Gesel., Mitt.* **34** (2): 97-126.
- Imadate, G. 1961. A new species Protura, *Eosentomon asahi* n. sp. from Japan. *Kontyû* **29** (2): 123-31, 2 pls.
- 1961. Two new Proturan species of the genus *Eosentomon* Berlese from Japan. *Ibid.*: 132-40, 16 figs. 1 pl.
- Jewett, S. G., Jr. 1962. New stoneflies and records from the Pacific coast of the United States. *Pan-Pac. Ent.* **38** (1): 15-20.
- Kawai, T. 1961. A Plecoptera nymph from Thailand. *Nature and Life in Southeast Asia* **1**: 199-201, 1 fig.
- Kimmins, D. E. 1962. Miss L. E. Cheesman's expeditions to New Guinea. Trichoptera. *Brit. Mus. (Nat. Hist.) Ent., Bull.* **11** (4): 99-187.
- Kuwayama, S. 1961. Corrodentia of Thailand. *Nature and Life in Southeast Asia* **1**: 203-5, 1 fig.
- 1961. A new species of *Anomalochrysa* (Neuroptera) from Formosa. *Univ Osaka Pref., Ent. Lab., Pub.* **6**: 15-16.
- 1961. Notes on the Chrysopidae of Korea (Neuroptera). *Ins. Matsumurana* **24** (2): 121-23.
- Nakahara, W. 1961. A new species of the Mantispidae from Japan (Neuroptera). *Mushi* **35** (7): 63-66, 9 figs.

(Continued on page 772)