

## Chrysomelidae of Samoa (Coleoptera)<sup>1</sup>

J. LINSLEY GRESSITT

BERNICE P. BISHOP MUSEUM  
HONOLULU, HAWAII

(Presented at the meeting of November 13, 1956)

In the series INSECTS OF SAMOA, Maulik in 1929 reported upon the Chrysomelidae then in the British Museum (Natural History) and the Bishop Museum. He enumerated 17 species, of which 11 were described as new. Four of the new species were made the types of new genera. Since that time, additional material has accumulated at Bishop Museum, and this forms the basis for this paper. Five new species and two new subspecies are here described. All of them appear to be endemic. Because of the comprehensiveness of Maulik's paper, the previously known species are not redescribed. Also, because the synonymy and distribution of most of the non-endemic genera, as well as the synonymy of most non-endemic species, have been treated in Bryant and Gressitt (PACIFIC SCIENCE, 11:2-91, 1957) and Gressitt (INSECTS OF MICRONESIA 17(1), 1955), these are not repeated here.

The chrysomelid fauna of Samoa is interesting from several standpoints. It seems to represent the easternmost extension of the family into the Pacific islands. This family is not well represented on oceanic islands (Gressitt, SYSTEMATIC ZOOLOGY 5:12-32, 47, 1956). Nevertheless, the 24 Samoa species represent a sizeable sample for the eastern limit. It compares with the 137 Fiji species and the 38 Micronesian species. Three of the Samoan species are definitely introduced, and two others occur also in Fiji (one of these latter also in Tonga). Three of the genera described by Maulik as endemic to Samoa and another described by Weise have since been found in Fiji, leaving one endemic for the present, and this is here tentatively reduced to subgeneric standing. The proportional subfamily representation is similar to that in Fiji, except that there is no cassidine in Fiji. The Samoan species, however, is introduced. The genus *Brontispa*, of which a new species is here described, has not been found in Fiji. The general zoogeographical relationship of the Samoa Chrysomelidae may be stated as being an impoverished extension of the Fiji fauna, with a few species without congeners in Fiji. These latter species have their closest relatives in Micronesia and the New

---

<sup>1</sup> Partial results of a grant from the National Science Foundation (Zoogeography of Pacific Insects, G-2127). My visit to Samoa was under the auspices of the Pacific Science Board (National Research Council) through the support of the Office of Naval Research.

Guinea area, as far as can be determined at present. Of the 19 endemic species, 2 have their closest relatives in Micronesia. The rest presumably have their closest relatives in Fiji, but in certain genera, e.g., *Stygnobia*, the Samoa species are all very distinct from the Fiji species, and the descendants of their common ancestor, if the taxonomy is correct, may have been lost in the past or exist on islands further to the west.

This paper is based on the study of nearly 3,000 specimens of Chrysomelidae from Samoa. The bulk of the unreported material was taken by E. C. Zimmerman in 1938 and 1940, and O. H. Swezey in 1940. Smaller numbers were taken by J. F. Illingworth in 1921, D. T. Fullaway in 1930, Wray Harris in 1937, E. J. Ford, Jr. in 1942, J. L. Gressitt in 1952, C. P. Hoyt in 1953-1954, and N. L. H. Krauss in 1955.

In the enumeration of specimens, the following abbreviations are used: BISHOP (Bishop Museum), BM (British Museum, Natural History), US (United States National Museum), CAS (California Academy of Science), and CSIRO (Commonwealth Scientific and Industrial Research Organization, Canberra). All specimens are deposited in the Bishop Museum unless otherwise indicated.

The *Brontispa* drawings were prepared by Dorothy Rainwater, with the genitalic drawings by myself.

#### KEY TO THE CHRYSOMELIDAE OF SAMOA

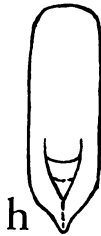
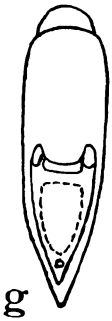
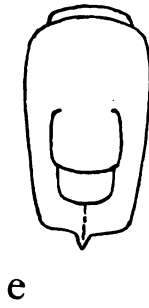
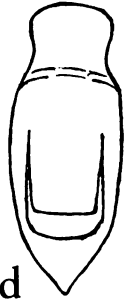
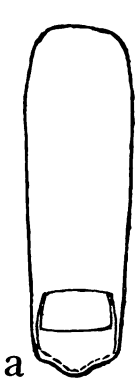
1. Head normal, with vertex not projecting, and with mouth directed forward or somewhat downward. . . . . 2
  - Head with vertex projecting strongly forward and mouth directed posteriorly below; mouth sometimes partly hidden by prosternum. . . . . 22
- 2(1). Antennae not closely inserted on front of head, separated by frons or vertex; elytra generally somewhat rigid. . . . . 3
  - Antennae closely inserted on front of head; elytra often not rigid. . . . . 16
- 3(2). Middle three abdominal segments constricted in central portions; form of body subcylindrical (Cryptocephalinae). . . . . 4
  - Middle three abdominal segments not constricted; form of body more or less ovate or rounded. . . . . 8
- 4(3). Eyes touching above; antenna less than one-half as long as body; pronotum deeply punctured. . . . . 5
  - Eyes not touching above; antenna more than one-half as long as body; pronotum not deeply punctured. . . . . 6
- 5(4). Dorsum with many minute hairs; elytron distinctly greenish. . . . .
  - . . . . . *Pycnophthalma tutuilana tutuilana* Maulik
  - Dorsum glabrous; elytron bluish with bronzy tint. . . . .
  - . . . . . *Pycnophthalma tutuilana upoluana*, n. subsp.

- 6(4). Elytron even, not corrugated; length more than 2 mm. . . . . 7  
 Elytron not even, distinctly corrugated; length less than 1.6  
 mm. . . . . **Ditropidus corrugatus**, n. sp.
- 7(6). Pronotal punctures very feeble; elytron dark; Upolu. . . . .  
 . . . . . **Ditropidus lucidus lucidus** (Maulik)  
 Pronotal punctures distinct; elytron often pale on central por-  
 tion of disc; Tutuila. **Ditropidus lucidus subpallidus**, n. subsp.
- 8(3). Wing venation not reduced; cubital veins present; clypeus not  
 divided into two parts; body subspherical (Eumolpinae). . . . . 9  
 Wing venation greatly reduced: cubital veins lacking; clypeus  
 divided into two parts; body subrounded and compressed  
 (Chrysomelinae); reddish to pitchy with reddish pronotum  
 . . . . . **Plagioderma samoana** Maulik
- 9(8). Prothorax nearly as broad or as broad as elytra, distinctly mar-  
 gined at side. . . . . 10  
 Prothorax much narrower than elytra, feebly margined at side;  
 body strongly tapered posteriorly; elytron punctured in dis-  
 tinct rows; black, in part tinged with reddish. . . . .  
 . . . . . **Stethotes rufonigra** Maulik
- 10(9). Prothorax slightly narrower than elytra; dorsum generally glab-  
 rous; length generally more than 5 mm. . . . . 11  
 Prothorax as broad as elytra; dorsum densely pubescent. . . . . 12
- 11(10). Dorsum glabrous, green tinged with golden and reddish; ely-  
 tron punctured in regular rows. **Rhyparida aureovirida**, n. sp.  
 Dorsum pubescent, pale brown with greenish tinge on prono-  
 tum; elytron irregularly punctured. . . . .  
 . . . . . **Rhyparida subaeneicollis** Fairmaire
- 12(10). Elytral punctures entirely irregular; pronotum not completely  
 vermiculate. . . . . 13  
 Elytral punctures partly in rows; pronotum completely vermi-  
 culate. . . . . **Stygnobia vermiculicollis**, n. sp.
- 13(12). Pronotum partly reticulate and rugose; or very coarsely punc-  
 tured and body length less than 2.8 mm. . . . . 14  
 Pronotum finely and distinctly punctured; body length more  
 than 3 mm. . . . . 15
- 14(13). Pronotum and elytron with slightly uneven contour, and with  
 irregular areas of pubescence; length over 6 mm. . . . .  
 . . . . . **Stygnobia aenescens** Maulik  
 Pronotum and elytron even, evenly pubescent; length less than  
 2.8 mm. . . . . **Stygnobia minuta** Maulik
- 15(13). Apex of pronotum not much narrower than base; body length  
 5-6 mm.; pale to reddish brown. . . . . **Stygnobia cauta** Weise  
 Apex of pronotum much narrower than base; body length 3-4

- mm.; color varies from brown to nearly black. . . . .
- 16(2). Posterior femur not greatly enlarged; femoral organ lacking; anterior coxa conical apically (Galerucinae) . . . . . 17
- Posterior femur greatly enlarged for jumping, and having an endo-skeletal organ; anterior coxa not conical apically (Alticinae) . . . . . 20
- 17(16). Elytron smooth, without ridges . . . . . 18
- Elytron strongly carinate; body pale reddish brown . . . . .
- . . . . . **Plesistia brunnea** Maulik
- 18(17). Elytron black or partly marked with black . . . . . 19
- Elytron entirely reddish testaceous. **Aulacophora similis** (Olivier)
- 19(18). Elytron with a large basal and a large preapical mark of black; pronotum pale; antenna pale . . . . .
- . . . . . **Aulacophora quadrimaculata** (F.)
- Elytron entirely black; pronotum pale brown to pitchy; antenna dull . . . . . **Aulacophora nigrobrunnea** Maulik
- 20(16). Hind tibia without a strong projection beyond tarsal insertion . . . 21
- Hind tibia with a strong, acute projection beyond tarsal insertion; body nearly round in outline; black to reddish brown . . . . . **Sphaerophyma insularum** Maulik
- 21(20). Posterior tibia depressed at apex, which is divided into two very short lobes, each usually ending in a short spinule; reddish testaceous, feebly punctured. **Aphthona samoana**, n. sp.
- Posterior tibia not depressed at apex, which is rounded and furnished with a small spinule placed in middle of terminal border; black, deeply punctured. . . **Nesohaltica nigra** Maulik
- 22(1). Pronotum and elytra without broad expansions, often spined (not so in Samoan forms); head not covered by pronotum (Hispidinae) . . . . . 23
- Pronotum and elytra with broad marginal expansions, the former often covering head (Cassidinae); reddish ochraceous, often intricately marked with black on sides of elytral disc. . . . . **Cassida strigula** Montrouzier
- 23(22). Prothorax squarish, not constricted near apex and base; entirely dark bluish . . . . . **Brontispa balakae**, n. sp.
- Prothorax distinctly constricted near apex and base; reddish testaceous with posterior two-thirds of elytra metallic greenish blue. . . . . **Promecotheca caeruleipennis** Blanchard

---

FIG. 1. Dorsal views of aedeagus. a, *Ditropidus lucidus lucidus* (Maulik). b, *D. lucidus subpallidus*, n. subsp. c, *D. corrugatus*, n. sp. d, *Rhyparida aureovirida*, n. sp. e, *Sygnobia aenescens* Maulik. f, *S. vermiculicollis*, n. sp. g, *S. cauta* Weise. h, *S. variabilis* Maulik. i, *Aphthona samoana*, n. sp.



## CRYPTOCEPHALINAE

**Ditropidus (Aprionota) lucidus lucidus** (Maulik), new combination  
(fig. 1, a)

*Aprionota lucida* Maulik, 1929, INS. SAMOA 4(3):179, fig. 1 (type from Upolu, in British Museum).

The additional material at hand of this and related species suggests that *Aprionota* should be relegated to subgeneric status.

UPOLU:—Ten, Afamalu, 650 meters, sweeping and beating, June 22–July 5, 1940, Zimmerman; one, near Tapatapao (Mt. Tafatafao?), 300 meters, beating, July 13, 1940, Swezey.

This species was described from nine specimens, eight of which were from Upolu. The ninth specimen, from Tutuila, is here assigned to the following new subspecies.

**Ditropidus (Aprionota) lucidus subpallidus**, new subspecies (fig. 1, b)

*Aprionota lucida* Maulik, 1929, INS. SAMOA 4(3):179 (part, Tutuila).

Female: Reddish castaneous, in part testaceous or piceous; head reddish brown, testaceous on labrum; antenna testaceous on first two segments, reddish brown to pitchy on remainder; pronotum castaneous, slightly pitchy at side; elytron castaneous, with central portion of disc testaceous and translucent or transparent; ventral surfaces reddish brown, partly pitchy on abdominal sterna. Body glabrous above, sparsely to moderately hairy beneath and on appendages.

Head with frons sparsely and deeply punctured and nearly as broad as deep. Antenna slightly more than one-half as long as body; scape nearly as long as next three segments combined; sixth longer than fifth and subequal to each of following. Pronotum practically as broad as elytra, finely and sparsely punctured, smooth, shiny, and evenly convex. Scutellum with visible portion smooth, barely longer than broad, rounded behind. Elytron smooth, feebly grooved except at side. Ventral surfaces irregularly punctured; last sternite very deeply concave along middle. Length 2.3 mm.; breadth 1.45 mm.

Male: Coloration similar; last sternite plain. Length 2.1 mm.; breadth 1.3 mm.

Paratypes: Color varying from dark pitchy brown to slightly paler than holotype; two paler than types and six darker. Length 2.1–2.9 mm.; breadth 1.2–1.5 mm.

TUTUILA:—Holotype female and allotype male (Bishop 2540), north side Pago Pago, 360 meters, beating dead branches, Aug. 8, 1940, Zimmerman. Eight paratypes: one paratopotype, same data as types; five (BISHOP, CSIRO, CAS US, BM), Fangatogo (Fagatoga?) 270 meters, beating shrub-

bery, Aug. 25, 1940, Zimmerman; one, Amanave, 120 meters, beating, Aug. 7, 1940, Zimmerman; one, Tutuila, 250 meters, Aug. 8, 1930, H. C. Kellers (paratype of the nominate form). SAVAII:—A questionable specimen from Sili, Feb., 1955, Krauss.

Differs from the nominate form in being more closely and distinctly punctured, particularly on frons and pronotum; in being less constricted at middle of side of elytron; and in being paler, as a rule.

**Ditropidus (Aprionota) corrugatus**, new species (fig. 1, c)

Male: Reddish castaneous, in part much paler or darker; head testaceous, slightly darker on parts of frons; antenna testaceous basally, piceous brown distally; pronotum castaneous, rather dark on sides of disc; elytron slightly paler castaneous; ventral surfaces castaneous, testaceous on last abdominal sternite; legs testaceous, ochraceous on femora. Body glabrous above, moderately clothed with shortish pale hairs beneath and on appendages.

Head sparsely and finely punctured, and feebly wrinkled, on frons; eyes touching above. Antenna four-fifths as long as body, moderately thickened in distal half; third to fifth segments long and slender; fourth slightly longer than third and shorter than fifth. Pronotum nearly as broad as elytra, sparsely and finely punctured, obliquely depressed at middle of side, strongly and angulately produced posteriorly over scutellum, the lobe strongly convex. Elytron slightly constricted at middle, distinctly emarginate on border; disc with ten deeply impressed grooves with distinct punctures; the punctures mostly narrow, and larger at side. Ventral surfaces irregularly punctured, largely impunctate on inner portion of metasternum and on side of first abdominal sternite; last sternite finely and closely punctured. Legs short, stout, feebly punctured. Length 1.65 mm.; breadth 1 mm.

UPOLU:—Holotype male (Bishop 2541), Malololelei road, 500 meters, beating shrubbery, July 8, 1940, Zimmerman.

This species differs from *D. (A.) lucidus* (Maulik) in being smaller; less broadened at humeri; less constricted in middle of elytron; the pronotum more narrowed anteriorly, impressed at side, and much more distinctly punctured; and the elytra more heavily punctured and distinctly corrugated. The antenna of *corrugatus* is similar in structure to that of *lucidus* but is longer.

**Pycnophthalma tutuilana tutuilana** Maulik

*Pycnophthalma tutuilana* Maulik, 1929, INS. SAMOA 4(3):181, fig. 2 (Tutuila; type in Bishop Museum).

This species is bronzy brown with the prothorax greenish bronzy and closely punctulate, and the legs pale. Length 1.9–2.1 mm.; breadth 1.2–1.4 mm.

TUTUILA:—This species was described from the unique type (Bishop 485) from Pago Pago. Eight specimens, Fangatogo (Fagatoga?), Aug. 25, 1940, beating shrubbery, Zimmerman; two, Malaeloa, May, 1954, Hoyt.

*Pycnophthalma tutuilana upoluana*, new subspecies

Female: Reddish brown, moderately tinged with bronzy; antenna pale ochraceous, very slightly duller distally; legs reddish ochraceous, paler distally; head reddish brown, darker on vertex and clypeus; pronotum dark reddish brown with bronzy and gray-blue reflections suggesting pruinosity; elytron reddish brown with bluish reflections suggesting pruinosity; ventral surfaces reddish brown. Body nearly glabrous above and with sparse, short, pale hairs beneath and on distal portions of antenna.

Head sparsely but distinctly punctured on frons. Antenna less than one-half as long as body; third to fifth segments moderately slender and subequal in length; following much stouter. Prothorax evenly narrowed distally, with moderately dense punctures. Scutellum narrow, elliptical, depressed. Elytron with 10 grooved rows of punctures, sixth row deeply grooved basally, seventh row not grooved, but with large punctures basally. Ventral surfaces subcoarsely punctured. Pygidium more finely punctured. Length 2.1 mm.; breadth 1.3 mm.

UPOLU:—Holotype female (Bishop 2542), Afiamalu, 630 meters, beating, July 3, 1940, Zimmerman.

Differs from the nominate form from Tutuila in being less metallic above and more glabrous; with darker legs, rougher frons, stouter antenna, less closely punctured pronotum, and less deeply grooved and less strongly punctured elytron.

EUMOLPINAE

*Rhyparida aureovirida*, new species (fig. 1, d)

Male: Reddish brown, largely metallic golden green above; head reddish brown tinged with bronzy green; antenna reddish basally and pitchy distally, with apices of segments mostly reddish brown; pronotum shiny castaneous in some lights and largely golden green in others; scutellum bronzy purplish brown; elytron golden green, changing to bronzy reddish brown in some lights; ventral surfaces bright reddish brown; legs reddish with tarsi and distal portions of tibiae shiny blackish. Body glabrous above, very sparsely pubescent beneath; last five antennal segments with close, short, pale pubescence.

Head narrower than apex of prothorax; frons moderately punctured and slightly rugose; occiput more sparsely punctured, smoother, but with a pair of adjacent low swellings near center. Antenna slightly more than one-half as long as body, moderately slender, slightly compressed; scape slightly shorter than next two segments combined; second a little shorter than third; third



to fifth subequal; sixth shorter; seventh stouter, longer than scape, subequal to remaining. Pronotum one-half again as broad as long, much narrower than elytra, suboblong, but slightly convex on each border, slightly narrower at apex than at base; disc smooth and even, finely and sparsely punctured, nearly flat above in lateral view. Scutellum scutiform, with only a few minute punctures. Elytron more than three times as long as pronotum, gradually narrowed posteriorly, convex in lateral view; disc with 11 distinct rows of moderate punctures including scutellar row, the rows becoming somewhat confused in apical third; the punctures mostly smaller than longitudinal interspaces. Ventral surfaces shiny, very sparsely and finely punctured. Legs shiny; femora strongly swollen. Aedeagus bent downward to nearly a right angle before apex, subevenly narrowed to tip. Length 7.75 mm.; breadth 4.25 mm.

TUTUILA:—Holotype male (Bishop 2543), Mt. Pioa, 550 meters, beating shrubbery, Aug. 29, 1940, Zimmerman.

Differs from *R. subaeneicollis* Fairmaire in being nearly twice as large, and in having the elytra more greenish than pronotum and punctured in regular rows instead of irregularly punctured.

#### *Rhyparida subaeneicollis* Fairmaire

*Rhyparida subaeneicollis* Fairmaire, 1879, LE NATURALISTE 1:76 (Samoa, type in Paris Museum?); 1881, ANN. SOC. ENT. FRANCE (6)1:484; Maulik; 1929, INS. SAMOA 4(3):190.

No specimens have been seen, as was likewise reported by Maulik.

#### *Stygnobia aenescens* Maulik (fig. 1, e)

*Stygnobia aenescens* Maulik, 1929, INS. SAMOA 4(3):182, fig. 3 (Tutuila; type in Bishop Museum).

TUTUILA:—Seventy-nine specimens. Fangatonga (Fagatoga?) Reservoir, Aug. 2, 1938, Zimmerman; Matafau (Matafao?) trail, Aug., 1940, Zimmerman; Amouli, Moloata, north side Pago Pago, Aug., 1940, Zimmerman; Moloata, May, 1954, Hoyt; Avau, Amouli, Fagasa, Pago Pago (Bryan, Kellers, Judd, Swezey and Wilder; reported by Maulik).

#### *Stygnobia vermiculicollis*, new species (fig. 1, f)

Male: Reddish brown, varying to pitchy, clothed with golden to whitish pubescence; head reddish, pitchy black on median portion of frons, vertex, and occiput; antenna ochraceous, slightly duller on parts of postmedian segments; pronotum reddish brown; elytron reddish brown, in part vaguely darker; ventral surfaces reddish brown, slightly pitchy on side of metasternum; legs pale reddish brown with bases and apices of femora blackish. Body moderately clothed above with golden pubescence, in part somewhat whitish; ventral surfaces more sparsely and less evenly clothed.

Head about as broad as apex of prothorax, rather broad and flat between eyes and antennal insertions, punctures vermiculate-reticulate. Antenna slender, nearly as long as body; scape not quite as long as next two segments together; second two-thirds as long as third; fourth slightly longer than second and third combined; fifth equal to fourth, longer than sixth; sixth to last subequal. Pronotum two-thirds as long as broad, slightly narrower at apex than at base, feebly convex on side and apex, sinuate at base with middle of base convex; disc convex, slightly irregular, densely vermiculate. Scutellum about as broad as long, slightly narrowed and rounded apically, densely punctured. Elytron more than two and one-half times as long as pronotum; disc uneven, with some partial ridges and punctures of two sizes, the small punctures very dense and irregular, the larger punctures partly in vague longitudinal lines. Ventral surfaces sparsely and shallowly, or finely punctured. Legs shiny, moderately punctured. Aedeagus narrow, tapered and acuminate apically. Length 6 mm.; breadth 3.1 mm.

UPOLU:—Holotype male (Bishop 2544), Afiamalu, 630 meters, beating shrubbery, June 13, 1940, Zimmerman. Three paratypes, males, one (CAS) same data as type, the other two Malololelei road, 550 meters, beating shrubbery, July 8, 1940, Zimmerman.

Differs from *C. aenescens* Maulik in having the dorsum reddish instead of bronzy; the pronotum more even in contour, though duller, and more completely vermiculate, without distinct punctures; the elytron more even in general contour, but with rougher, duller surface, and with two distinct types of punctures, the larger ones in partial rows; and the aedeagus more slender and more gradually narrowed at apex.

### *Stygnobia cauta* Weise (fig. 1, g)

*Stygnobia cauta* Weise, 1922, ARCHIV. FÜR NATURGESCH. 88(A)10:154 (Samoa; type in Deutsche Entomologische Museum); Maulik, 1929, INS. SAMOA 4(3):184, fig. 4.

*Stygnobia annulipes* Weise, 1922, ARCHIV FÜR NATURGESCH. 88(A)10:154 (Samoa; type in Deutsche Entomologische Museum).

Two hundred and thirty-four specimens in Bishop Museum. SAVAI:—Fagamalo (Buxton and Hopkins; reported by Maulik), Palauli, Sili, Feb., 1955, Krauss. UPOLU:—Afiamalu, July, 1940, Swezey; Tapatapao (Mt. Tafatafao?), July, 1940, Zimmerman; Malololelei road, July, 1940, Zimmerman; Apia, Mafa Pass road, Feb., 1955, Krauss; Aleipata, Lalomanu, Leulumoega, Mulifanua (Buxton and Hopkins, Armstrong, Swezey and Wilder; reported by Maulik). TUTUILA:—Aua-Afono, Vailoa, Tuaulu, Taputimu, Amouli, Leone-Aule, Leone-Aluau, Aua-Afono, Feb.–Mar., 1930, Fullaway; Breaker Point, Blunt's Point, Aug., 1940, on *Hibiscus tiliaceus* L., Swezey;

Amouli, Amanave, Matafao trail, Aug., 1940, Zimmerman; Taputimu, Aua, Sept.-Nov., 1953, Hoyt; Pago Pago, Leone road, etc. (Kellers, Swezey and Wilder, Bryan; reported by Maulik). MANUA:—Tau (Swezey and Wilder; reported by Maulik).

### *Stygnobia variabilis* Maulik

*Stygnobia variabilis* Maulik, 1929, INS. SAMOA 4(3):186, fig. 5 (Upolu, Tutuila, Savaii; type from Upolu in British Museum).

There is extreme variation in the dorsal puncturation, particularly of the pronotum. The color varies from testaceous to pitchy.

Over 480 specimens in Bishop Museum. SAVAII:—Fagamalo, Salailua, Safune (Bryan; reported by Maulik); Palauli, Sili, Feb., 1955, Krauss. UPOLU:—Tapatapu (Mt. Tafatafao?), Afiamalu, Sinaele, Malololelei, June-July, 1940, Zimmerman, Swezey and Zimmerman, 200 specimens; Apia, Jan., 1952, Gressitt; Tapueleele, Mafa Pass road, Feb., 1955, Krauss; Malololelei, Leulomoega, Mt. Vaea, Vailima, Apia (Buxton and Hopkins, Armstrong, Swezey and Wilder; reported by Maulik). TUTUILA:—Fagatoga, 300 meters, beating, Aug., 1940, Zimmerman; Pago-Matafao trail, Aug., 1940, Zimmerman; Amanave, Amouli, north side Pago Pago, Mt. Pioa, Aug., 1940, Zimmerman; Utulei, Aug., 1940, Swezey; nearly 200 specimens. Various localities, including Fagasa and Pago Pago (Kellers, Swezey, Wilder and Bryan; reported by Maulik.)

### *Stygnobia minuta* Maulik

*Stygnobia minuta* Maulik, 1929, INS. SAMOA 4(3):188, fig. 6 (Upolu, Tutuila; type from Upolu in British Museum).

Color varies from pale reddish brown to pitchy; elytra sometimes plain and sometimes vaguely striped.

Thirty-eight specimens in Bishop Museum. UPOLU—Malololelei road, 550 meters, Aug., 1940, Swezey and Zimmerman; Afiamalu, July, 1940, Zimmerman; 35 specimens. TUTUILA:—Only the single specimen taken by Bryan at Pago Pago and reported by Maulik.

### *Stethotes rufonigra* Maulik

*Stethotes rufonigra* Maulik, 1929, INS. SAMOA 4(3):190 (Savaii; type in Bishop Museum).

This species is shiny black, tapered caudally, with elytral punctures in regular rows. Length 2.9–3.1 mm.; breadth 1.4–1.6 mm.

SAVAII:—Safune (the type, Bryan). UPOLU:—Thirteen specimens, Afiamalu, 700 meters, July 4, 1940, Zimmerman; Tiavi, 650 meters, June 21, 1940, Zimmerman.

## CHRYSOMELINAE

**Plagiodera samoana** Maulik

*Plagiodera samoana* Maulik, 1929, INS. SAMOA 4(3):191, fig. 8 (type from Upolu in British Museum).

Coloration varies from orange through reddish to pitchy black with reddish pronotum.

Forty specimens in Bishop Museum. UPOLU:—Afiamalu, July, 1940, Swezey and Zimmerman; Malololelei road, July, 1940. Swezey. TUTUILA:—Fagasa trail, 250 meters, beating shrubbery, Aug., 1940. Zimmerman.

## GALERUCINAE

**Aulacophora similis** (Olivier)

*Galeruca similis* Olivier, 1808, ENTOMOLOGIE 6:624, no. 93, pl. 2, fig. 23 (East Indies).

This is a common pest of cucurbits.

SAVAII:—Safune (Buxton and Hopkins; reported by Maulik). NUU-TELE:—Reported by Maulik. UPOLU:—Sinaele, July, 1940, Aleisa road, Apia, June, 1940, Zimmerman; 1942, Ford; Feb., 1955, Krauss. TUTUILA:—Fagaitua, Leone-Aluau trail, Fagasa trail, Aua-Afono trail, Leone-Aule trail, Vaitogi, Feb.–Mar., 1930, Fullaway. MANUA:—Tau Island (Swezey and Wilder; recorded by Maulik). One specimen is in the collection from Niue Island, June 20, 1940, T. G. Yuncker.

**Aulacophora quadrimaculata** (F.)

*Crioceris quadrimaculata* F., 1781, SPEC. INS. 1:152 ("Cape of Good Hope"; type in British Museum).

This common four-spotted species is also a pest of cucurbits. Two hundred and twenty-five specimens in Bishop Museum. SAVAII:—Fagamalo, Salailua (Bryan; reported by Maulik); Palauli, Feb., 1955, Krauss. UPOLU:—Aleipata, Siumu, Apia (after Maulik). TUTUILA:—Aua-Afono trail, Fagaitua, Fagasa trail, Amouli, reservoir on Fagatoga trail, Vaitongi, Amouli, Feb.–Mar., 1930, Fullaway; Fagatoga, Aug., 1940, Zimmerman; Taputimu, May, 1953, Hoyt. MANUA:—Olosega Island, May, 1930, Fullaway; Tau Island (Judd, Swezey and Wilder; reported by Maulik).

**Aulacophora nigrobrunnea** Maulik

*Aulacophora nigrobrunnea* Maulik, 1929, INS. SAMOA 4(3):196, fig. 9 (type from Upolu in British Museum).

This endemic species does not seem to have been associated with crops.

Fifty-one specimens in Bishop Museum. SAVAII:—Safune (Bryan; reported by Maulik). UPOLU:—Afiamalu, June, 1940, at light and beating, Zimmerman; Malololelei road, 600 meters, June, 1940, Swezey. TUTUILA:—Fagasa trail, Maupasaga, Aua-Aponota trail, Feb.–Mar., 1930, Fullaway.

### *Plesistia brunnea* Maulik

*Plesistia brunnea* Maulik, 1929, INS. SAMOA 4(3):199, figs. 10, 11 (type from Upolu in British Museum); Bryant and Gressitt, 1957, PAC. SCI., 11:67.

This elongate brown species is the only one in this genus. It has since been found in Fiji.

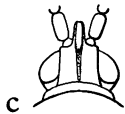
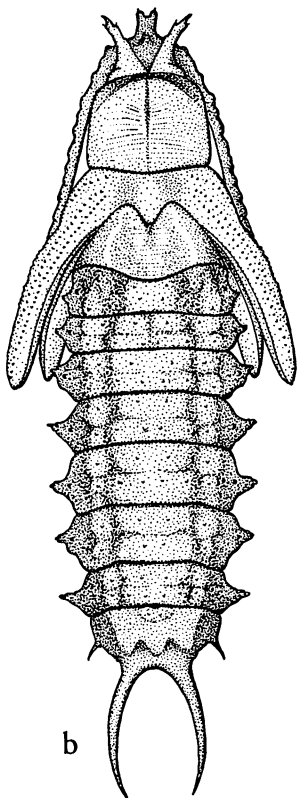
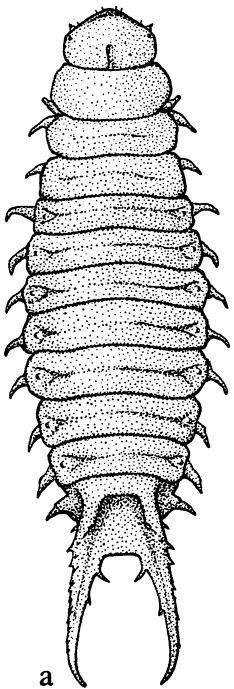
Forty-four specimens in Bishop Museum. UPOLU:—Apia, on *Hibiscus tiliaceus*, Malololelei, June, 1940, Zimmerman. TUTUILA:—reservoir on Fagatoga trail, Aua-Afono, Aunuu Island, Afone trail, Amouli, Feb.–Mar., 1930, Fullaway; Blunt's Point, sweeping, Aug., 1940, Swezey; Tafuna, Jan., 1952, Gressitt.

## ALTICINAE

### *Aphthona samoana*, new species (fig. 1, i)

Male: Testaceous brown, marked with pitchy in part; head pitchy brown, paler on frons; antenna pitchy brown, ochraceous on first two segments and reddish brown on next two; pronotum pale testaceous brown, subtransparent, appearing more reddish on areas of muscle insertion; scutellum reddish ochraceous, translucent; elytron orange testaceous, slightly piceous along suture; ventral surfaces ochraceous; legs ochraceous, reddish brown on tarsi and hind tibia, pitchy on distal two-thirds of hind femur. Body glabrous above, except for a few minute hairs on apical margin of elytron; ventral surfaces and appendages with short, sparse, pale pubescence.

Head slightly broader than long, as broad as apex of prothorax, medially convex and micropunctulate on frons, with a pair of small adjacent swellings behind antennal insertions; occiput slightly wrinkled and bordered anteriorly by an obtuse groove. Antenna four-fifths as long as body, slightly thickened distally; scape nearly as long as next two segments combined; second nearly as long as third; fourth barely longer than third; fourth to seventh subequal; eighth to tenth each very slightly longer; last longest. Pronotum three-fifths as long as broad, transverse apically, convex basally, but truncate in central portion of basal margin; side convex, but nearly straight in central portion, with a small angle one-fourth from apex and a feeble obtuse angle one-fourth from basal angle; disc evenly convex, with irregular feeble punctures. Scutellum triangular, micropunctulate. Elytron evenly rounded externally, broadest at middle, rounded at apex; disc very finely and irregularly punctured, the punctures apparently absent on basal quarter. Ventral surfaces sparsely, finely, and irregularly punctured. Aedeagus narrow, with apex suddenly slightly



narrowed and broadly truncate, with rounded corners. Legs stout; hind femur nearly two-fifths as broad as long; first hind tarsal segment nearly as long as remainder combined. Length 2 mm.; breadth 1.1 mm.

Female: Last abdominal sternite plain, ungrooved. Length 2 mm.; breadth 1.05 mm.

UPOLU:—Holotype male and allotype female (Bishop 2545), Tapatapao (Mt. Tafatafao?), 300 meters, sweeping Bermuda grass; July 17, 1940, Swezey; one paratopotype female, sweeping, July 24, 1940, Swezey.

Differs from *A. nanyoensis* Chujo, of Micronesia, in being less reddish; much less distinctly and less completely punctured on elytron; and in having the aedeagus more broadly truncate apically.

### *Nesohaltica nigra* Maulik

*Nesohaltica nigra* Maulik, 1929, INS. SAMOA 4(3):201, fig. 12 (type from Upolu in British Museum).

This is the type species of the genus. Three additional species have been described from Fiji.

Sixty-six specimens in Bishop Museum. SAVAI:—Salailua (Bryan; reported by Maulik); Patamea, Sili, Feb., 1955, Krauss. UPOLU:—Afiamalu, 650 meters, June, 1940, Zimmerman; Lanutao, 700 meters, Sinaele, July, 1940, Zimmerman; Mafa Pass road, Feb., 1955, Krauss; Mt. Vaea, Vailima, Malololelei, Tuaeфу (reported by Maulik). TUTUILA:—North side of Pago Pago, Pago-Matafao trail, Amouli, 150 meters, Aug., 1940, Zimmerman.

### *Sphaerophyma insularum* Maulik

*Sphaerophyma insularum* Maulik, 1929, INS. SAMOA 4(3):202, figs. 13, 15*k* (type from Tutuila in Bishop Museum, incorrectly indicated as in British Museum in original description).

This species was described from two specimens from Tutuila.

There are now three specimens in Bishop Museum, with two new island records. UPOLU:—Afiamalu, 650 meters, sweeping, July 2, 1940, Zimmerman, one specimen. TUTUILA:—Aunuu Island, Feb., 1930, Fullaway. The type is from Pago Pago, the paratype (British Museum) from Leone road.

## HISPINAE

### *Brontispa balakae*, new species (fig. 2)

Male: Body reddish castaneous, darker on pronotum and paler on femora; antenna reddish on scape and last segment, pitchy to black on remainder;

FIG. 2. *Brontispa balakae*, n. sp. a, dorsal view of mature larva. b, dorsal view of pupa. c, dorsal outline of head of allotype female. d, dorsal view of holotype male.

elytron slightly iridescent blue, becoming brownish toward apex, and black along suture and extreme basal margin. Frons densely pale pubescent, almost resembling tarsal pads.

Head nearly one-half as long as prothorax, wider at eyes than at neck; occiput slightly broader than long, deeply grooved medially, finely punctured; cephalic process oblong, nearly as long as scape, almost one-half as broad as long, broadly grooved medially, continuous with occipital groove, leaving a narrow ridge on each side above, smooth and slightly concave beneath; frons finely punctured, with erect pubescence; postocciput impunctate. Antenna slightly longer than head and prothorax combined, slightly flattened distally; scape nearly twice as long as pedicel; third segment one-half again as long as pedicel, subequal to each of next three; seventh slightly longer, equal in length to last; eighth to tenth slightly shorter, not narrowed basally like third to sixth; last four pubescent at sides. Prothorax as broad as long, almost straight at side, slightly broader anteriorly than posteriorly; anterior angle without tooth, somewhat evenly convex; anterior margin strongly convex; basal angle distinct, without indentation; disc uneven, coarsely and irregularly punctured, largely impunctate along median line and obliquely toward anterolateral corner; side declivous to lateral margin. Scutellum about as broad as long, rounded behind. Elytron a little more than twice as long as head and prothorax combined, distinctly widened behind middle, rounded and narrowly subtruncate apically; disc regularly punctured in eight rows anteriorly and ten rows behind middle, alternate interstices broader and more strongly raised, second and fourth carinate on apical declivity; apical margin slightly expanded. Ventral surfaces largely smooth and micropunctulate, but with a few deep punctures on side of thorax. Legs relatively long and shiny; femora impunctate, hind femur reaching well beyond apex of first abdominal sternite. Length 7 mm.; breadth 2.1 mm.

Female: Interantennal process not quite one-half as long as scape, broadly grooved and blunt as in male. Length 7.1 mm.; breadth 2.2 mm.

Paratypes: Length 6.7–8 mm.; breadth 1.9–2.35 mm.

UPOLU:—Holotype male (Bishop 2507), Afiamalu, 650 meters, June 30<sup>1</sup> 1940, on *Balaka* palm, Swezey; allotype female, Malololelei road, 500 meters<sup>1</sup> on *Clinostigma* palm, Swezey; sixty-nine paratypes (BISHOP, BM, US, CSIRO, CAS): fifty-seven paratypes, of which 50 found on *Balaka*, mostly by Swezey, June 30, 1940, a few by Swezey and Zimmerman, June 19, 1940, and seven reared from *Clinostigma*, July 3, 1940, Swezey; three, same data as for allotype, Swezey; six, Lanutao trail, 400 meters, Tapatapao (Mt. Tafatafao?), Aug. 21, 1940, on *Balaka*, Swezey; one, near Tapatapao (Mt. Tafatafao?), 300 meters, July 13, beating dead branches, and one, Sinaele, 450 meters, July 27, 1940, Zimmerman; one, Malololelei, Feb., 1955, Krauss.

This species differs from *B. chalybeipennis* (Zacher) in being less flattened



and less parallel-sided; the cephalic process longer; the pronotum less even, less finely and less sparsely punctured; and the elytron less finely punctured, lacking a sutural row of punctures, and not emarginate apically. The lack of a scutellar puncture row is characteristic of *Octodonta* and *Uhmanna*, but they have four teeth on each side of the prothorax.

Egg: Oblong-oval, very slightly wider near anterior end, finely reticulate; reddish brown, enclosed in a frail envelope; laid on young palm fronds. Length 1.4 mm.; breadth 0.75 mm.; depth 0.35 mm.

Newly hatched larva: Arms of tail-shovel slender and nearly one-half as long as body. Length 2.6 mm.

Mature larva: Pale testaceous, slightly duller on tip of caudal furca (tail-shovel). Head transverse, subparallel-sided, obtuse anteriorly, slightly depressed behind middle, fairly smooth; prothorax obtuse laterally, feebly pigmented across central portion; mesothorax with very prominent spiracle at anterior angle, and a backward-curving, seemingly three-segmented lateral process at middle of side; metathorax similar, with similar lateral process; first abdominal segment very similar in dorsal view to metathorax, but with slightly longer lateral process; second to seventh abdominal segments each similar to first, but each with lateral process and spiracle progressively slightly longer; last abdominal segment narrower than preceding, with similar lateral process, and with tail-shovel more than one-third as long as body, each ramus somewhat evenly tapered and arched, with a subbasal strong interior tooth, a weaker submedian tooth, some small external basal teeth, and finer dorsal teeth. Length 9 mm.; breadth nearly 3 mm. including lateral processes.

The larva is quite similar to that of *B. chalybeipennis*, giving added reason for assigning this species to the genus *Brontispa*, in spite of the differing body form and lack of extra scutellar row of punctures on elytron.

Pupa: Pale testaceous; head with bilobed anterior process and a pair of tapering, downward-curved dorsal processes bearing a few small tubercles; pronotum with a few tubercles near anterior margin and anterolateral angles; mesonotum and meranotum finely ridged transversely; elytral pad with rows of fine tubercles; abdominal tergites each with about eight fine tubercles, more distinct on second to sixth segments; a small tubercle before each spiracle from second to sixth (last); second to seventh pleurites each with a broad-based, suddenly tapering, horizontal process; last segment with a small, slender, lateral process and terminating in a long, bifurcate, caudal process with arched, tapering arms. Length 10 mm.

Hosts: *Balaka rechingeriana* Burret, *Clinostigma oncorhyncha* Beccari.

A number of eggs, larvae of different ages, and pupae, including the above described immature stages, were taken at Afiamalu, Upolu, Samoa, August 8, 1940, on *Balaka* palm, by Swezey. Adults, enumerated above, were taken at the same time.

Although there is no such evidence known, it is possible that this beetle might some day attack the coconut palm in Samoa. In some other areas, such as Micronesia, the only proven host of the species of *Brontispa* is the coconut palm, yet there, also, the beetles may have been present before the coconut palm arrived. This new species is known only from the island of Upolu, but it may very likely occur on Savaii. It is quite likely absent from Tutuila and other islands of Eastern Samoa. This species represents the easternmost known record for the genus *Brontispa*. It is not a very typical member of the genus, as it is distinctly broadened posteriorly and specially sculptured on the prothorax and elytron. It is interesting to note that no native species of *Brontispa* have been found in the New Hebrides, Tonga, or Fiji, though special searching has been done in Fiji and Tonga.

### *Promecotheca caeruleipennis* Blanchard

*Promecotheca caeruleipennis* Blanchard, 1853, VOY. PÔLE SUD 4(Zool.):312 (Tonga; type in Paris Museum).

*Promecotheca lindingeri* Aulmann, 1914, ENT. RUNDSCHAU 31:27 (Samoa).

*Promecotheca caeruleipennis* ab. *reichei*, Weise, 1922, PHIL. JOUR. SCI. 21(1):70.

*Promecotheca reichei*, Maulik, 1929, INS. SAMOA 4(3):210, figs. 17-18.

For additional synonymy, see Bryant and Gressitt, 1957, PACIFIC SCIENCE 11:90.

This is the once very destructive coconut hispine of Fiji. It is interesting that no additional specimens have been taken in Samoa in recent years.

UPOLU:—Mulifanua (reported by Maulik). Apia, Aug., 1933, H. W. Simmonds. TUTUILA:—Pago Pago and 300 meters altitude (reported by Maulik); "Samoa," 1921, Illingworth; Naval Station, seashore, royal palm, Aug. 5, 1940, Swezey.

### CASSIDINAE

### *Cassida strigula* Montrouzier

*Cassida strigula* Montrouzier, 1855, ANN. SCI. PHYS. LYON (2)7(1):67 (Woodlark Island; type in Paris Museum ?); Maulik, 1929, INS. SAMOA 4(3):214.

This tortoise beetle feeds upon sweet potato. As indicated by Maulik, this species has been called a subspecies of *C. diomma* Boisduval, from New Guinea.

Three hundred and ten specimens in Bishop Museum. SAVAII:—Patamea, Feb., 1955, Krauss. UPOLU:—Tapatapao (Mt. Tafatafao?), July, 1940, Swezey; Falepuga, July, 1940, Swezey; Toauma, Faleata Distr., 1937, Harris; Falefa, Lefaga, Tapueleele, Feb., 1955, Krauss. TUTUILA:—Many localities, nearly 300 specimens, 1918-1953, Kellers, Fullaway, Swezey, Wilder, Zimmerman, Hoyt, and others; Aunuu Island, 1930, Fullaway.