

ON A SMALL COLLECTION OF FULGORIDS FROM THE ISLANDS
OF KRAKATAU, VERLATEN AND SEBESI.

By

F. MUIR,

Hawaiian Sugar Planters' Experiment Station, Honolulu, T. H.

The collection dealt with herein form part of a series of observations and collections made by various Dutch naturalists on the fauna and flora as they reappear on those islands which were overwhelmed by the great eruption of the volcano of Krakatau in 1883. For this reason they have great biological interest and it is of great importance that correct identifications be given. It is therefore better to leave an identification in doubt or even to describe as new specimens whose specific distinction is uncertain.

The fulgorids of Sumatra are hardly known and those of Java only slightly, so that we are at a disadvantage when trying to draw conclusions from this group of insects. The establishment of phytophagous insects in a new locality presupposes the establishment of their host plants; more species of phytophagous insects must migrate into a new region than can be established. Fulgorids have but small power of flight, so their appearance on these islands is of interest. Grass-feeding insects have a better chance of dispersal than most of the others as grasses are so prevalent. Of the three species of *Cixiidae* mentioned below two are known to feed on grasses; of the eight species of *Delphacidae*, *Ugyops* is not like to feed on grasses but the other seven are. The adult *Derbidae* are not likely to feed on grasses, but they are likely to feed on palms; the young of these all live in rotten wood so that considerable forest growth with some decay is necessary for their survival. The two species of *Nisia* are probably grass feeders. The *Derbidae* have poor power of flight and their incident of endemism in islands is high; the possibility of the nymphs being carried in old logs must be considered.

FULGOROIDEA.

CIXIIDAE.

1. *Kirbyana javana* MUIR.

One male and one female from Sebesi (DAMMERMAN, April 1921). This is known from Java and Sipora.

2. **Dystheatias deventeri** KIRKALDY.
One female from Krakatau (DAMMERMAN, September 1926). Hitherto only known from Java.
3. **Oliarus dispar** MUIR.
Three males from Krakatau (DAMMERMAN, December 1919; September 1920) and one female from Verlaten Island (DAMMERMAN, December, 1919). Originally described from Java, Pekalongan.

DELPHACIDAE.

4. **Ugyops notivena** (WALKER)?
Six specimens from Krakatau and one from Sebesi. Only a comparison with the type can make this identification certain.

5. **Tropidocephala** sp. Fig. 1.

There is a damaged male of this genus without the head and pronotum, which appears to be undescribed. I give a figure of the genitalia and the following description for future reference. Black or very dark brown, the legs lighter. Tegmina black or very dark brown, a very small light mark at node. The corium and clavus covered irregularly with small granules bearing black hairs, the membrane (distad of nodal line) having fewer confined to the membrane near the nerves. The genitalia are typically those of *Tropidocephala*; the tegmina are somewhat like those of *Paranda globiceps*.

One male from Krakatau (DAMMERMAN, September 1920).



Fig. 1. — *Tropidocephala* sp.
Full view of male genitalia.

6. **Tropidocephala** sp.
There is one female specimen which may be a light form of *T. brunnipennis* SIGN.
Hab. Krakatau (DAMMERMAN, Dec. 1919).
7. **Eoeurysa flavocapitata** MUIR.
One male and two females from Krakatau (DAMMERMAN, September 1920). Formerly known from China and Federated Malay States.
8. **Dicranotropis** sp.
One female which I do not care to place a specific name to.
Hab. Krakatau (DAMMERMAN, September 1920).

9. *Nilaparvata lugens* (Stål).

Three female specimens from Sebesi (DAMMERMAN, April 1921).
This is a widely distributed species first described from Java.

10. *Sogata intrudens* sp. n. Figs. 2, 3.

Male: length 2.3 mm; tegmen 2.7 mm.

Vertex very slightly longer than wide, base slightly wider than apex, the medio-lateral carinae arising from the lateral carinae about the middle and continued into the frons, the basal medial carina obscure. Length of frons nearly double the width, base narrower than apex, sides slightly curved, median carina narrowly forked at base. Antennae reaching nearly



Fig. 2-3.—*Sogata intrudens*.

2. Lateral and 3. full view of male genitalia.

to middle of the clypeus, second segment nearly 1.5 time the length of first. Lateral pronotal carinae nearly straight, diverging posteriorly, not quite reaching the hind margin. Hind basitarsus slightly longer than the other two together; spur not so long as basitarsus, thin, tectiform, with about twenty

five teeth on the hind margin. The lateral and full view of the genitalia figured; there is no armature on the anal segment.

Light brown; a few lighter spots on frons, darker over abdomen. Tegmina hyaline, slightly stramineous, veins brown, more distinctly so on veins apical of cross veins, a dark mark on margin at apex of clavus; wings hyaline, veins brown.

The female is a little larger and darker in colour than the male.

Hab. Verlaten Island. One male and one female (DAMMERMAN, Sept. 1920).

11. *Sogata furcifera* (HORVÁTH).

One male from Sebesi of this widely distributed species (DAMMERMAN, April 1921).

DERBIDAE.

12. *Phaciocephalus* sp.

A dark, female specimen from Sebesi without a head which I do not care to put a name to. (DAMMERMAN, April 1921).

13. *Kamandaka (Eosaccharissa) javana* KIRK. Fig. 4.

The type of this species is lost but the one male from Krakatau (December 1920) agrees with the original description. I figure the genitalia which should be compared with specimens from sugar cane in Java.

The apex of the anal segment is produced into two sharp spines; the medio-ventral process is long and thin.

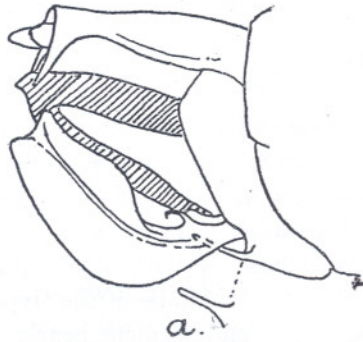


Fig. 4.—*K. (Eosaccharissa) javana*. Lateral view of male genitalia; a. medio-ventral process of pygofer.*



Fig. 5.—*Phantasmatocera unapunctata*. Lateral view of male genitalia; a. apex of anal segment.

14. ***Phantasmatocera unopunctata*** MUIR. Fig. 5.

Two males from Sebesi (April 1921) and two females from Krakatau (December 1919) which agree with the description of this species, but the type specimen is not available at present for detailed comparison of the male genitalia. It was reported, with some uncertainty, from Siberut Island.

15. ***Kaha peregrina*** sp.n. Figs 6,7, a,b. Male: length 2.3 mm; tegmen 3.8 mm.

Head not so greatly produced as in type species, produced in front of eye about the length of an eye. The second segment of antenna produced into two portions, one of which bears long, narrow scales.

Reddish brown; the vertex and base of frons light. Tegmina and wings reddish brown with darker veins; the veins in costal cell and the apical veins narrowly bordered with white.

The genitalia are figured. They come near to *K. pseudomedia* MUIR from the Philippine Islands, but it is not that species.

One male from Krakatau (December 1919).

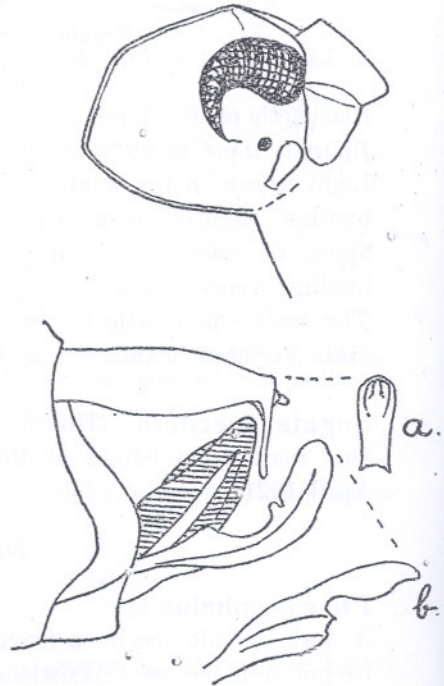


Fig. 6-7.—*Kaha peregrina*. 6. Lateral view of head. 7. Lateral view of male genitalia; a. apex of anal segment; b. ventral view of left genital style.

16. *Proutista fenestrata* (BIERMAN) Fig. 8.

Two males from Sebesi (DAMMERMAN, April 1921) which agree with the description of this species. The genitalia are figured. The anal segment is long and narrow, slightly bent ventrad about one fourth from the apex; at the bend there is a slight projection on each side. The genital styles are long, thin and cylindrical on apical two thirds, the apex slightly swollen and produced into two short processes. In *P. wildmani* from Formosa, the apex of the anal segment is produced into three short stout points.

This species was formerly only known from Java.

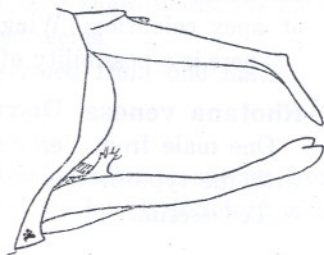


Fig. 8.—*Proutista fenestrata*.
Lateral view of male genitalia.

17. *Proutista furcato-vittata* (Stål).

A second species of this genus from Krakatau (September 1920) has the abdomen missing and the tegmina damaged but I think it is Stål's species, originally described under *Phenice*.

18. *Zoraida (Peggiopsis) javana* (MELICHAR).

One female from Sebesi (DAMMERMAN, January 1922), which agrees with the description. The hind margin of the pregenital plate very slightly rounded. Anal segment wide, about as long as broad, subcircular with a small projection at the apex. Formerly known only from Java.

19. *Zoraida (Zoraida) pseudosylvicola* MUIR (?) Fig. 9, a.

This species was described from a female from Borneo, Telok Air, and agrees with a male from Krakatau (September 1920), but until it can be compared with a male from Borneo there must be some uncertainty of the identification. The genitalia come near to those of *Zoraida laratae* MUIR. I give a figure and description for comparison.

Male: length 3.6 mm; tegmen 9 mm; wing 4.2 mm.

Antennae 1.5 times the length of frons, slightly flattened, sense organs evenly distributed over surface. The sulca down frons fairly large.

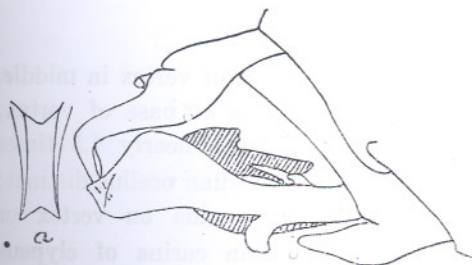


Fig. 9.—*Zoraida pseudosylvicola?*
Lateral view of male genitalia; a. apex of anal segment.

Clypeus longer than frons, median and lateral carinae distinct, sides flattened. First median sector furcate, joined to Cu making it four veined; four simple median sectors. Wings about half the length of the tegmina. Stramineous; mesonotum darker. Abdominal tergites darker brown with

distinct light pustles or sense organs, largest on sixth tergite. Anal segment darker brown, genital styles light. Tegmina hyaline; the costal, subcostal, radial, basal, medial and half of second median cells brown, the colour extending onto base of median sectors; veins brown, apices of R and M at apex colourless. Wings hyaline with brown veins.

There is a possibility of *laratae* being only a colour variety of this species.

20. **Rhotana venosa** DISTANT.

One male from Verlaten Island (DAMMERMAN, April 1920) which agrees with the type of this species. The only other locality it is reported from is Tenasserim.

21. **Zeugma vittata** WESTWOOD.

One female from Sebesi (DAMMERMAN, April 1921).

This is the same as *Z. monticola* KIRK. and is known from Java, Borneo and the Malay Peninsula. A closely allied species, *Z. corporaali*, is known from Sumatra. One species from Siberut and one from Sipora are also known.

MEENOPLIDAE.

The species of the genus *Nisia*, in common with the species of all the genera of this family, are only recognized with any certainty by the genitalia, and as most species have been described without even a reference as to the sex it is nearly impossible to be sure of identifications. Under the name of *Nisia atrovenosa* (LETH.) stand specimens from various localities and they represent more than one species. As the genitalia of the male of this species from the typical locality has never been described it is impossible to be sure of its identification; it is therefore better to describe as new those specimens whose identification is uncertain, rather than make more wrong identifications.

22. **Nisia dammermani** sp.n. Figs. 10, 11, a.

Male: length 2.7 mm; tegmen 3.8 mm.

The lateral carinae of vertex and frons large; length of vertex in middle, equal to width in middle, two small triangular areas at base of vertex; length of frons nearly 1.5 times the width, median ocellus distinct; no median carina on vertex or frons; median carina of clypeus distinct, lateral carinae absent or very obscure. Venation of tegmen typical; first claval vein strongly granulate, Sc + R slightly so.



Fig. 10-11. — *Nisia dammermani*.
10. Dorsal view of head. 11. Lateral view of male genitalia; a. ventral view of genital style.

The genitalia are figured. The genital styles are simple, straight and narrow with rounded apex

which is very distinct from the styles of *atrovenosa* from several localities.

Light brown; darker on carinae of vertex and frons and over abdomen. Tegmina hyaline, slightly stramineous, veins darker brown except the Sc + R which is light. The costal margin is light; very slightly fuscous along margin of apical cells. Wings hyaline with light veins.

Hab. Sebesi (DAMMERMAN; April 1921). Described from one male.

23. *Nisia atrovenosa* (LETH.)

Two males and one female (damaged) which are similar to species from Queensland and elsewhere identified as this species but I doubt if it be correct. Sebesi (DAMMERMAN, April 1921).