

ON A COLLECTION OF ORTHOPTEROID INSECTS FROM  
JAVA MADE BY OWEN BRYANT AND WILLIAM PALMER  
IN 1909

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The expedition to Java in 1909 by Bryant and Palmer was made under the auspices of the United States National Museum, though financed largely by Doctor Bryant. By agreement the material collected was delivered to the Museum for determination by specialists associated with that institution, a set of duplicates to be returned to Doctor Bryant. The following report is on that portion of the insects collected belonging to the orders Dermaptera and Orthoptera.

Order DERMAPTERA<sup>1</sup>

Family ARIXENIIDAE

ARIXENIA JACOBSONI Burr

*Arixenia jacobsoni* BURR, Ent. Mo. Mag., ser. 2, vol. 23, 1912, p. 105, fig.

Single specimen, a male much broken, of this aberrant earwig was in the collection, taken at Pelaboean Ratoe. Unfortunately, it bears no date or other information.

Family FORFICULIDAE

Subfamily PYGIDICRANINAE

DIPLATYS NIGRICEPS Kirby

*Diplatys nigriceps* KIRBY, Journ. Linn. Soc. Lond., vol. 23, 1891, p. 507.

One female, Mount Salak, May 5.

KALOCRANIA SIAMENSIS Dohrn

*Pygidicrana siamensis* DOHRN, Stett. Ent. Zeit., vol. 24, 1863, p. 51.

Three males, Buitenzorg, March and April 15.

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<sup>1</sup>The Dermaptera, with the exception of the family Arixeniidae and the forficulid genera *Labidura* and *Platylabia*, were determined by Dr. Malcom Burr over a decade ago, and the subfamily grouping is as arranged by him except that he gave family rank to the groups here used as subfamilies.

## ECHINOSOMA SUMATRANUM DeHaan

*Forficula (Echinostoma) sumatranum* DEHAAN, Verh. Nat. Gesch. Nederl. Overz. Bezitt. Orth., 1842, p. 244.

One male, one female, two nymphs, Megamendg Mountains (4,200 feet altitude); three nymphs, Tjibodas, Mount Gede (7,800 feet altitude).

## Subfamily LABIDURINAE

## ALLOSTETHUS INDICUM Burmeister

*Forficula indicum* BURMEISTER, Handb. Ent., vol. 2, 1838, p. 751.

One male, Mount Salak; one nymph, Buitenzorg, March.

## GONOLABIS JAVANA Bormans

*Anisolabis javana* BORMANS, Ann. Soc. Ent. Belg., vol. 27, 1883, p. 63, pl. 2, fig. 4

One male, Tjibodas, Mount Gede, January 20. Doctor Burr writes that this is the third known specimen of this rare species.

## EULABIS KIRBYI Burr

*Anisolabis ? kirbyi* BURR, Ann. Mag. Nat. Hist., vol. 20, 1897, p. 311.

One male, Tjibodas, Mount Gede, August 26. This also, says Doctor Burr, is the third known specimen of its kind, the other two being in his collection. This specimen differs from the others, according to Burr, in the feeble development of the keels on the penultimate ventral segment and in the nearly symmetrical forceps. Burr had this placed in the genus *Gonolabis* but he has recently referred it to *Eulabis*.<sup>2</sup>

## LABIDURA RIPARIA Pallas

*Forficula riparia* PALLAS, Reise Rus. Reichs., vol. 2, Anhang, 1773, p. 727.

One female nymph, Buitenzorg. This specimen was not taken by Bryant and Palmer, but is listed here because it is present in the National Museum collection.

## PLATYLABIA MAJOR Dohrn

*Platylabia major* DOHRN, Stett. Ent. Zeit., vol. 28, 1867, p. 347.

Two males and two females, Megamendg Mountains.

## Subfamily LABIINAE

## IRDEX NITIDIPENNIS Bormans.

*Spongiphora nitidipennis* BORMANS, Ann. Mus. Stor. Nat. Genova, ser. 2, vol. 14, 1894, p. 382.

Two females, Mount Salak, May 15.

## SPONGOVOSTOX SEMIFLAVUS Bormans

*Spongiphora semiflavus* BORMANS, Ann. Mus. Stor. Nat. Genova, ser. 2, vol. 14, 1894, p. 385.

One female, Buitenzorg, April 18.

<sup>2</sup> Journ. Royal Microscop. Soc., 1915, p. 537.

**LABIA MUCRONATA** Stal

*Labia mucronata* STAL, Eug. Resa. Ins., 1860, p. 303.

One male, Buitenzorg, July 3.

**LABIA PYGIDIATA** Dubrony

*Labia pygidiata* DUBRONY, Ann. Mus. Stor. Nat. Genova, vol. 14, 1879, p.364.

One broken specimen, Tjibodas, Mount Gede, April 20.

Subfamily **CHELISOCHINAE****CHELISOCHES MORIO** Fabricius

*Forficula morio* FABRICIUS, Syst. Ent., 1775, p. 270.

Three males, thirty-four nymphs from Buitenzorg, all in March, except one male on April 18, and one female from Pelaboean Ratoe.

**ENKRATES ELEGANS** Bormans

*Chelisothes elegans* BORMANS, Ann. Mus. Stor. Nat. Genova, ser. 2, vol. 20, 1900, p. 464.

Five males, four females, Megamendg Mountains (4,200 feet altitude).

**HAMAXAS FEAE** Bormans

*Chelisothes feae* BORMANS, Ann. Mus. Stor. Nat. Genova, ser. 2, vol. 14, 1894, p. 393.

One female, Buitenzorg, July 3.

Subfamily **FORFICULINAE****SKENDYLE JAVANA(?)** Bormans

*Ancistrogaster javanus* BORMANS, Ann. Mag. Nat. Hist., ser. 7, vol. 11, 1903, p. 266.

One male, Pangranggo; one female, Buitenzorg, April 25; two females, one nymph, Tjibodas, Mount Gede. Doctor Burr queried this determination and, apparently through inadvertence, credited the name to Verhoeff. The male appears to agree very well indeed with the specimen figured by Burr.<sup>3</sup>

**KOSMETOR POULTONI** Burr

*Opisthocosmia poultoni* BURR, Ann. Mag. Nat. Hist., ser 7, vol. 16, 1905, p. 491.

One male, Tjibodas, Mount Gede, September. Doctor Burr returns this as named above but points out that this specimen differs from the unique type in the black head and pronotum and the more constricted forceps. He suggests that it is perhaps a new species.

**KOSMETOR, species**

One female, Buitenzorg, March.

<sup>3</sup> Gen. Insectorum, fasc. 122, pl. 9, fig. 16.

## Order ORTHOPTERA

## Family BLATTIDAE

## Subfamily BLATTINAE

## CATARA MINOR Krauss

*Catara minor* KRAUSS, Semon. Zool. Forsch. Austral., vol. 5, 1903, p. 753, pl. 47, fig. 3.

Three females, three nymphs, Tjibodas, Mount Gede, April 20; three females, two nymphs, Buitenzorg, March.

## DORYLAEA BRYANTI, new species

Two males and two females of a medium-sized black roach occurred in the collection which apparently pertains to the genus *Dorylaea*, but can not be identified with any described species. It is therefore christened *bryanti*, in honor of the leader of the expedition, and described as follows:

*Description, male and female.*—General color very dark chestnut brown, the male the darker, being almost black; the female is decidedly lighter, especially the tegmina; abdomen black above and below in both sexes; legs, clypeus, mouth parts, and antennae yellow, the antennae beyond the base and the tarsi a little darker; head shining, piceous in the male and chestnut in the female, the eyes black to grayish yellow mottled with black.

Head with the vertex slightly exposed in both sexes; eyes separated by a space about one and one-half times greater than the width of one of them; interocellar space scarcely narrower than the interocular space.

Pronotum smooth and shining; anterior margin narrowly rounded; posterior margin very broadly rounded, almost subtruncate, mesially barely produced; disk with the widest point well posterior of the middle.

Legs moderately slender; femora spined beneath, the anterior ones on the caudal margin with four or five long spines and a few shorter ones on the apical half and the cephalic margin with a row of ten or eleven long spines extending along the greater portion of the length, the basal one very short and those toward the apex of the femur somewhat shorter than the others; the posterior metatarsus is approximately equal in length with the other segments combined and armed beneath for almost its entire length with a double row of bristles; the second segment of the posterior tarsus is very slightly longer than the succeeding two and is armed beneath on the basal four-fifths with a double row of bristles; third segment short and armed beneath on the basal two-thirds with bristles; pulvilli very short except that of the fourth segment where it extends for the greater part of the length of the segment; arolia present, moderately large.

Tegmina shorter than the abdomen in both sexes, in the male covering about four-fifths its length and in the female something over one-half; wings slightly shorter than the tegmina in the female and about one-third shorter in the male.

Abdomen moderately broad; supra-anal plate of male three times broader than long, apically rather narrowly rounded, of female about twice as broad as long, subtruncate; subgenital plate of male transverse, apically entire and bearing a pair of small articulated one-segmented styles, of female valvular; cerci of both sexes short, broad and flat, separated by a distance about equal to their length; all of the segments transverse except the apical two, the broadest point at the middle; concealed genital organs of male consisting of a rather broad ventral plate lying mostly on the right side, to the left of this, projecting from beneath a submembranous dextral plate, is the usual slender apically pointed sinistral hook with a brief subapical tooth; overlying the above noted organs is a broad irregular dextral plate with a somewhat swollen apex and with a small flattened clavate subbasal appendage on the right margin, and to the right of this plate is another thick, irregularly curved plate; these complicated organs are clearly seen only in the holotype.

*Measurements.*—Length, pronotum, male 4, female 4.5 mm.; tegmina, male and female 8 mm.; width, pronotum, male 5.25, female 6 mm.

*Holotype.*—Male, Buitenzorg, Java, in March; allotype, female, Megamendg Mountains, Java (4,000 feet altitude); paratype A, male, and B, female, Tjibodas, Mount Gede, Java, April 20.

Holotype and allotype in National Museum; paratypes returned to Bryant.

*Type.*—Cat. No. 29135, U.S.N.M.

The two paratypes are decidedly broader than the others but show no structural differences; this imparts to those specimens a very different appearance due partly to a more decided contraction of the abdomen and especially to the fact that in them the tegmina are flat while in the holotype and allotype the tegmina in drying were somewhat rolled longitudinally. The pronotum of the male paratype is also noticeably blacker than in the holotype.

#### DORYLAEA, species

One immature specimen, evidently a female, Tjibodas, Mount Gede, April 20.

It is possible that this is the nymph of *D. bryanti* described above; a series of short longitudinal ridges on the posterior portions of the dorsal segments of the abdomen of this nymph suggest specific difference, however, as there is no indication of such in *bryanti*.

**HOMALOSILPHA USTULATA** Burmeister

*Periplaneta ustulata* BURMEISTER, Handb. Ent., vol. 2, 1838, p. 503.

One female, Soekaboemi, March 25; one nymph, Buitenzorg, March; two nymphs, Mount Salak, March 7 (2,500 feet altitude).

These characteristic appearing nymphs are large, the largest being 27 mm. in total length; the abdomen is wholly black except the supra-anal plate and the median portion of the venter, which are yellow; legs and basal part of antennae black; thorax yellowish, the disk of the three sections posteriorly margined with black and their disks with maculations of the same color, on the pronotal disk assuming the shape of a roughly formed circle inclosing a median longitudinal stripe with a spot on each side of it. The pronotal disk differs from that of the adult by being decidedly broadest considerably behind the middle, especially noticeable in the smaller nymph; the maculation on the pronotal disk of the adult is much more reduced than in the case of the nymphs, but there is perhaps considerable variation in these markings.

**NEOSTELEOPYGA PROPOSITA** Shelford

*Steleopyga proposita* SHELFORD, Ann. Mag. Nat. Hist., ser. 8, vol. 8, 1911, p. 5, pl. 1, fig. 1.

One male, three females, Buitenzorg, April 15; one large female nymph, Pelaboean Ratoe.

The labrum and clypeus vary somewhat in color, being often quite as black as the palpi.

**NEOSTELEOPYGA SEMONI** Krauss

*Steleopyga semoni* KRAUSS, Orth. Austr. & Malay Archipel., 1902, p. 751.

One male, Buitenzorg, March; one male, two females, Tjibodas, Mount Gede, April 20 and September.

**PERIPLANETA AUSTRALASIAE** Fabricius

*Blatta australasiae* FABRICIUS, Syst. Ent., 1775, p. 271.

Two males, one female, Mount Salak, May 15; one female, two nymphs, Buitenzorg, April 18 and March.

**PERIPLANETA BRUNNEA** Burmeister

*Periplaneta brunnea* BURMEISTER, Handb. Ent., vol. 2, 1838, p. 503.

Twenty-two adults and five nymphs from Buitenzorg in March and April and one nymph from Tjibodas in September.

The above series shows a gradual variation in color from those with the pronotum and tegmina almost black, as shown in Shelford's figure of *P. lata* Herbst,<sup>4</sup> to those in which those portions are almost

<sup>4</sup> Gen. Insectorum, fasc. 109, pl. 2, fig. 16

as light colored as in *P. americana*. It seems rather doubtful if the form figured as *lata* by Shelford as above mentioned is really Herbst's species. It is probable that the real *P. lata* is a light colored form of *brunnea*, as in color it must be similar to *americana* which it is said by the describer to resemble. The blacker forms may perhaps be the *P. robinsoni* of Hanitsch. If *P. lata* does fall here, that name will have to be used, as it is the older.

Subfamily CORYDINAE

HOLOCOMPSA DEBILIS Walker

*Holocompsa debilis* WALKER, Cat. Blatt. Brit. Mus., 1868, p. 192.

One female, Buitenzorg, April.

This specimen and another, also a female, from Mindanao, P. I., now before the writer, extend the recorded distribution of this species some distance both north and south. The female differs from the male in having the organs of flight but moderately exceeding the tip of the abdomen. There is little variation noticeable in these specimens from Mindanao and Buitenzorg; the length of body is about the same as in the male; the tegmina are about the same length as the body instead of over twice as long as in the male. The cerci of both these females are yellow and distinctly segmented, the color strongly contrasted with that of the abdomen.

Subfamily ECTOBIINAE

ANAPLECTA JAVANICA Saussure

*Anaplecta javanica* SAUSSURE, Ann. Mus. Stor. Nat. Genova, ser. 2, vol. 15, 1895, p. 71.

One female, Pelaboean Ratoe.

AREOLARIA FIEBERI Brunner

*Areolaria fieberi* BRUNNER, Syst. Blatt., 1865, p. 260, pl. 6, fig. 27.

One female, Buitenzorg, April 25.

EUTHEGANOPTERYX, species

One male, Pleboean Ratoe.

This specimen is in very poor condition, too imperfect to justify description, though it very probably represents an undescribed species.

Subfamily EPILAMPRIINAE

EPILAMPRA LAEVICOLLIS Saussure

*Epilampra laevicollis* SAUSSURE, Mem. Soc. Geneve, vol. 23, 1874, p. 129, pl. 10, fig. 45.

Three females, one nymph, Tjibodas, Mount Gede, April 20.

## EPILAMPRA LURIDA Burmeister

*Epilampra lurida* BURMEISTER, Handb. Ent., vol. 2, 1838, p. 505.

Three females, Buitenzorg, April 10, 25, June; one female, Pelaboean Ratoe.

From published characters it seems hardly possible to separate this species from *albina* Saussure; whether they really are distinct or not may be questioned. The *E. trojana* of Rehn from Lower Siam appears to be very near *lurida*.

## PSEUDOPHORASPIS NEBULOSA Burmeister

*Epilampra neublosa* BURMEISTER, Handb. Ent., vol. 2, 1838, p. 505.

One male, four females, Buitenzorg, April and March; one female, Mount Salak, May 15; two males, Pelaboean Ratoe.

There is a decided color variation exhibited in this series, some specimens being almost unicolorously yellowish brown while others are more or less variegated with blackish markings, mostly of an indefinite rounded shape; one specimen from Buitenzorg has a very noticeable blackish spot about 2 mm. in diameter near the center at the apical fourth of the tegmina, while another specimen taken at the same place and time has no indication of such a spot.

The posterior metatarsus of this species is a little shorter than the rest of the segments combined. The tegmina of the female are apically roundly concave but those of the male are rounded.

## Subfamily PANCHLORINAE

## PYCNOSCELUS SURINAMENSIS Linnaeus

*Blatta surinamensis* LINNAEUS, Syst. Nat., 10 ed., vol. 1, 1758, p. 424.

One female, nine nymphs. Buitenzorg, the female in March, the nymphs in April and June; one nymph, Megamendg Mountains (4,200 feet altitude).

Recent breeding experiments have proved this cosmopolitan roach to be viviparous, rarely perhaps otherwise, and to breed parthenogenetically.

## Subfamily PANESTHINAE

## MIOPANESTHIA STENOTARSIS Saussure

*Miopanesthia stenotarsis* SAUSSURE, Rev. Suisse de Zool., vol. 2, 1895, p. 325, pl. 9, fig. 2.

Three nymphs, Tjibodas, Mount Gede, April 20.

## PANESTHIA ANGUSTIPENNIS Illiger

*Blatta angustipennis* ILLIGER, Magaz. Insekt., vol. 1, 1801, p. 185.

Two males, Mount Salak, March 7 (2,500 feet altitude).

## PANESTHIA JAVANICA Serville

*Panesthia javanica* SERVILLE, Ann. Sci. Nat., vol. 22, 1831, p. 38.

One male, four females, Mount Salak (3,000 feet altitude); one female, Megamendg Mountains; one female, Buitenzorg.

## SALGANEA AMBOINICA Brunner

*Salganea amboinica* BRUNNER, Ann. Mus. Genova, vol. 33, 1893, p. 47.

Four nymphs, Tjibodas, Mount Gede, April 20.

## SALGANEA MORIO Burmeister

*Panesthia morio* BURMEISTER, Handb. Ent., vol. 2, 1838, p. 513.

One male, two females, Tjibodas, Mount Gede, April 20. One female specimen with label indicating capture at an altitude of 4,000 feet.

## SALGANEA RUGULATA Saussure

*Salganea rugulata* SAUSSURE, Rev. Suisse de Zool., vol. 3, 1895, p. 304.

Four nymphs, Tjibodas, Mount Gede, April 20.

## Subfamily PERISPHAERINAE

## PERISPHERUR ARMADILLO Serville

*Perispherus armadillo* SERVILLE, Ann. Sci. Nat., vol. 22, 1831, p. 44.

One female, Buitenzorg, March.

## PSEUDOGLOMERIS FLAVICORNIS Burmeister

*Perisphaeria flavicornis* BURMEISTER, Handb. Ent., vol. 2, 1838, p. 488.

One female, Tjibodas, Mount Gede, April 20.

## Subfamily PSEUDOMOPINAE

## BLATTELLA BREVIALATA, new species

A single female specimen is the basis of the following description. This is in very poor condition, the antennae and the fore and middle legs being absent, and the tip of the abdomen is also partly broken away. However the wings and other portions still intact present characters apparently distinctive and it is deemed advisable to describe it as a new species under the above name.

*Description, female (male unknown).*—Head projecting rather decidedly beyond the pronotum and yellowish brown in color with darker fleckings and somewhat darker between the eyes; eyes noticeably lighter than the adjacent portions of the head; basal segment of antennae, the only portion present, concolorous with the head.

Pronotal disk broader than long, broadening posteriorly, the widest point near the posterior border, which is very broadly rounded with a very inconspicuous median prolongation; anterior margin almost subtruncate mesially; lateral margins rounded and very little deflexed;

the disk is broadly margined laterally with yellowish and narrowly so posteriorly, the disk with two broad longitudinal maculations converging at the ends, almost meeting anteriorly, the space between them slightly maculate. Abdomen infuscated above, with the posterior half of the lateral margins of most segments yellowish, beneath a little lighter; tip of abdomen mutilated; cerci long and broadly flattened, distinctly segmented, the segments nine in number, the terminal one twice as long as broad, the basal three transverse and the rest subquadrate.

Legs absent except the posterior femora and tibiae and the basal four segments of one tarsus; hind femora strongly armed beneath, the color light yellowish with numerous minute fuscous specks; tarsi black at insertions of the spines.

Tegmina exceeding the tip of the abdomen; discoidal sectors four or five in number and longitudinal; costal veins not clavate, about ten in number and very long. Wings very short, no more than one-half as long as the tegmina but with well developed venation; ulnar vein simple; costal veins five or six in number, mostly once forked and but slightly clavate.

*Measurements*.—Length, pronotum, 2.5 mm.; tegmina, 7 mm.; width, head, 2 mm.; pronotum, 3.5 mm.; tegmina, 2.75 mm.

*Holotype*.—Female, Buitenzorg, March. In National Museum.

*Type*.—Cat. No. 29136, U.S.N.M.

This species seems most nearly allied to the *Blatella alliena* of Brunner from Burma but appears to differ in various characters from that somewhat larger form.

#### BLATELLA PALMERI, new species

*Description, male (female unknown)*.—Conforming with the diagnostic features of the genus in which it is placed in having discoidal sectors of the tegmina longitudinal, the ulnar branch forked, with the posterior branch itself forked, and the anterior femora armed beneath with a complete row of spines, those toward the apex of the femora shorter. The wing, however, has a very conspicuous apical triangle, almost as broad basally as the anterior field of the wing but not attaining the apex of that field and with the outer margin sinuate, thus excluding this roach from the subfamily Ectobiinae where this triangle is apically rounded and either clearly as broad as the anterior field of the wing or attains the apex of that field, usually both.

The general color is dark reddish brown, the surface polished. Head uniformly dark brown, the eyes somewhat lighter; antennae fuscous, slightly lighter basally. Pronotal disk polished, without furrows or other inequalities, the sides of the disk light yellowish and the center very dark reddish brown without variegation; this dark central portion touches the posterior margin of the disk for its entire

width and the anterior margin but briefly; the pronotal disk is approximately as broad as long, the posterior margin very broadly obtuse-angulate, the anterior margin subtruncate; the whole disk is decidedly broader posteriorly and laterally distinctly deflexed.

Tegmina noticeably exceeding the tip of the abdomen and apically pointed; color of tegmina polished reddish brown, somewhat lighter than the pronotal disk, the humeral areas pale yellowish; there are over a dozen costal veins and about a dozen longitudinal discoidal sectors; the anal area is rather long, about three times as long as the greatest width. Wings in repose just reaching the tips of the tegmina, apically strongly sinuate; there are about a dozen slightly clavate costal veins and the ulnar vein is bifurcate as previously mentioned, both branches directed to the apex of the wing. Figure 1 shows the venation of the wing.

Abdomen blackish above, with lighter variations apically, the basal portion light, as is also the ventral surface and the legs. Supra-anal plate about as long as broad, apically rounded, a brief shoulder formed on either side near

the base by an abrupt but brief narrowing of the plate at that point; cerci long, exceeding the tip of the supra-anal plate by one-half their length and comprising eight distinct segments; subgenital plate strongly asymmetrical, the right half horizontal and slightly convex,

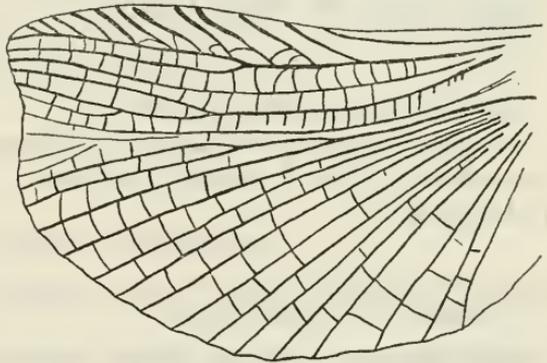


FIG. 1.—WING OF *BLATTELLA PALMERI*, NEW SPECIES.

the lateral margin curved downward, the left side longer and abruptly turned up at right angles to a vertical position; closely fitting into the angle thus formed is an outwardly rounded, somewhat flattened organ with the inner margin forming a large, flattened irregular-shaped flange bearing two bunches of several very long, sharp, stout, spinelike bristles, those of the basal bunch directed inwardly and those on the more apical bunch directed caudad; this organ is a part of the concealed genitalia, though at a casual glance it is easily mistaken for a part of the subgenital plate; the unique specimen has not been dissected for the examination of the concealed genital structures. Overlying the lateral margins of the third dorsal segment of the abdomen preceding the supra-anal plate, and lying in a lateral fold or depression in that segment, is an elongate, somewhat club-shaped organ which arises near the median line and is directed laterally and very slightly caudad, the tip rounded, very gently and

bluntly recurved and bearing many short, fine, backwardly directed hairs, the whole forming a very striking modification, which, together with the curiously modified subgenital plate with its peculiar termination, will serve to readily differentiate the male of this species from its described allies.

Legs strongly spined; anterior femora armed beneath on the anterior margin with a dozen stout spines occupying about the apical four-fifths of the entire length, the apical one long, the next one-half as long, the next three still a third shorter, and the rest successively longer and stouter till those at the base are fully as long as and slightly stouter than the apical one; the opposite margin bears four or five large spines; posterior legs absent; arolia present but rather small.

*Measurements*.—Length, pronotum, 3 mm.; tegmina, 10 mm.; width, head, 2.25 mm.; pronotum, 3.25 mm.; tegmina, 3 mm.

*Holotype*.—Male, Tjibodas, Mount Gede, Java, April 20. In National Museum.

*Type*.—Cat. No. 29137, U.S.N.M.

#### BLATELLA, species

One male, Buitenzorg, March.

This is apparently not any one of the species of the genus recorded from Java. Like *B. hewitti* Shelford, it resembles superficially an *Ischnoptera*.

#### MARGATTEA ANCEPS Krauss

*Blatta* (*Phyllodiomia*) *anceps* KRAUSS, Semon's Zool. Forsch. Austral. & Malay Archipel., vol. 5, 1903, p. 749.

Two females, Tjibodas, Mount Gede (7,000 feet altitude); one female, Mount Salak, April 5.

This species was described in the genus *Blatta*, subgenus *Phyllodromia*, later referred to *Allacta* by Kirby, and still later listed in *Phyllodromia* by Shelford. Its real position, as shown by the present specimen, is in the genus *Margattea* of Shelford.

#### MARGATTEA BUITENZORGENSIS, new species

*Description, male (female unknown)*.—General color uniformly pale yellowish. Head narrow, projecting considerably from beneath the pronotal disk; eyes somewhat darker than the general color and rather widely separated, connected on the vertex by a broad reddish-brown band; antennae yellowish, the basal segment with a fuscous spot beneath; palpi same color, the terminal segment flattened and infuscated beneath.

Pronotal disk slightly transverse, narrower anteriorly, the lateral margins translucent and rounded, the anterior and posterior margins

very broadly rounded, the mesial portion of the disk marked with some irregular dark lines and spots, though not very conspicuously so. Organs of flight considerably surpassing the tip of the abdomen; tegmina with the discoidal sectors longitudinal, few in number; costal veins about a dozen in number, those at the middle of the tegmina being half as long as the width of the tegmina; wings about twice as long as broad, wholly membranous and transparent with brown venation; costal veins about nine in number, the apical two or three forked, the basal seven strongly clavate apically, as is also the subcostal vein, which thus resembles one of the clavate costal veins, as shown in Figure 2; ulnar vein four forked, all branches terminating in the apical margin of the wing; a small apical triangle present.

Legs yellowish, with the insertions of the rather slender concolorous spines black; anterior femora with the anterior ventral margin armed distally with two long spines, preceded by a row of exceedingly fine and short spinules of equal length, and basad of these there are four very long stout spines.

Abdomen above with the segments mesially fuscous, the margins only yellowish, and beneath the color is yellowish with some rather small and obscure blackish spots along the sides; supra-anal plate about twice as broad as long, apically rounded, entire, the dorsal surface with a slight longitudinal median carina; subgenital plate transverse, apically rounded and entire; the lateral margins of this plate in the single specimen studied are slightly rolled downward and inward, making it probable that in life there are notches at the intersections of the styles; styles yellow, very slender and terminating in a hair; cerci long, distinctly segmented, somewhat flattened and beneath slightly infuscated toward the apex; dorsally the abdomen has the second segment preceding the supra-anal plate apically and mesially formed into a very small slightly raised recurved flap terminated by a bunch of short yellow bristles; this modification is so small as to be very easily overlooked.

*Measurements.*—Length, pronotum, 2 mm.; tegmina, 9 mm.; width, head, 1.5 mm.; pronotum, 2.6 mm.; tegmina, 2.5 mm.

*Holotype.*—Male, Buitenzorg, March. In National Museum.

*Type.*—Cat. No. 29138, U.S.N.M.

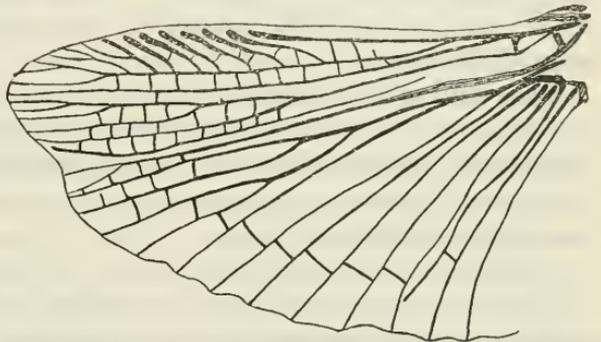


FIG. 2.—WING OF MARGATTEA BUITENZORGENSIS, NEW SPECIES

This species seems to be somewhat allied to the *Blattella nebulosa* of Shelford from Borneo but lacks the nebulous markings of the tegmina; it also seems close to the Bornean *Blattella nimbata* Shelford, but the supra-anal plate is not at all notched apically. *Blattella vilis* Brunner and *B. contigua* Walker are two other roaches which the present one apparently resembles in some particular or another, but there are some characters present in the one here described which seem to preclude its being referred to either of them.

#### SORINEUCHORA, new genus

*Description*.—Head with the eyes very widely separated. Organs of flight fully developed, exceeding the tip of the abdomen, smooth and with distinct venation; radial and ulnar veins separate and parallel except basally where they almost or quite merge; anterior field broad, at the middle of the tegmen broader than the post-radial area; discoidal sectors diagonal. Wings with a very small triangular apical area; ulnar vein branched, the branches all directed to the apex of the wing.

Legs with all the femora unarmed beneath; arolia present.

Abdomen without noticeable dorsal modification; supra-anal and subgenital plates transverse; styles present in male; cerci long and flattened, distinctly segmented and projecting most their length beyond the supra-anal plate.

*Genotype*.—*Sorineuchora javanica*, new species.

This genus would fall into the subfamily Oxyhaloinae in the keys of Brunner and Shelford, but the absence of a conspicuous apical triangular area in the wings makes it appear advisable to refer it to the Pseudomopinae, in a section of that group in which the femora are unarmed beneath. This genus is structurally allied to the Australian genera *Choristima* Tepper and *Aphlebidea* Brancsik, which have been hitherto referred to the subfamily Ectobiinae, but which are here referred to the Pseudomopinae in the same section as the new genus here described.

#### SORINEUCHORA JAVANICA, new species

*Description, male and female*.—Entire insect of a pellucid and very light yellowish color with a tinge of greenish. Head with the eyes darker, set far apart and with two small piceous spots between them; antennae unicolorous, sometimes slightly darker than the general coloration of the body but generally concolorous. Pronotal disk much broader than long, posteriorly broadly truncate, anteriorly broadly rounded, the lateral margins broadly expanded, not or but little deflexed, and transparent. Tegmina with the radial and ulnar veins parallel and rather widely separated to near the base, the former sending a dozen or more nonclavate costals to the front margin and the

ular, with about half as many diagonally directed branches with distinct cross veins between them, in most lights giving a general network appearance; anterior field broader at the middle of the tegmen than the postular region. Wings in repose surpassing very slightly the tips of the tegmina; ulnar vein with two branches, both directed to the apex of the wing; costal veins nine or ten in number and scarcely clavate.

Abdomen scarcely longer than broad; supra-anal plate transverse in both sexes, in the male apically very obscurely and briefly notched, in the female with a very small triangular notch; subgenital plate of male transversely triangular and asymmetrical, a groove running diagonally across the plate with a ridge at the right terminating in a small apical tubercle; on each side on an apical notch formed by this groove and ridge is a small, stout, unsegmented articulated style; these styles are set very close together, and are scarcely twice as long as broad, apically rounded and there furnished with some short stout setae; in the female the subgenital plate is transverse, apically very broadly rounded and mesially with a very small apical notch; cerci

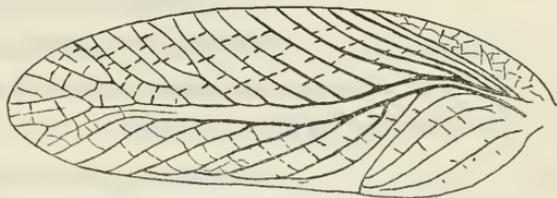


FIG. 3.—TEGMEN OF *SORINEUCHORA JAVANICA*, NEW SPECIES.

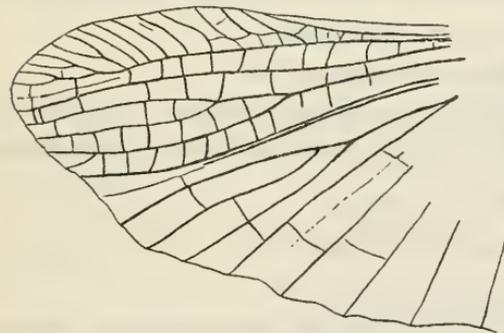


FIG. 4.—WING OF *SORINEUCHORA JAVANICA*, NEW SPECIES.

long, flattened and distinctly segmented, apically pointed, those of the male noticeably the longer.

*Measurements.*—Male and female, length, pronotum, 2.25 mm.; tegmina, 8.5 to 9 mm.; width, head, 1.5 mm.; pronotum, 3.75 mm.; tegmina, 3 mm.

*Holotype.*—Male, Buitenzorg, Java, April; allotype, female, Pelaboean Ratoe, Java; paratypes A, B, and C, males, same data as allotype, and D, male, Depok, Java, July 20.

Holotype, allotype, and paratypes A and B in National Museum; paratypes C and D returned to Bryant.

*Type.*—Cat. No. 29139, U.S.N.M.

The paratypes show no tangible variation from the holotype.

*Chorisoneura lativitrea* Walker may belong to this genus, but types must be seen to determine this definitely. But that species is very surely not the one here described.

Family MANTIDAE<sup>5</sup>

## Subfamily AMELINAE

## DIMANTIS HAANI Giglio-Tos

*Dimantis hanni* GIGLIO-TOS, Bull. Soc. Ent. Ital., vol. 46, 1915, p. 160.

One male, Pelaboean Ratoe; one male, Depok, August 1.

In the specimen from Pelaboean Ratoe the tegmina and pronotum are more flecked with blackish than is noticeable in the Depok specimen.

## Subfamily CALIRIDINAE

## LEPTOMANTIS ALBELLA Burmeister

*Mantis albella* BURMEISTER, Handb. Ent., vol. 2, 1838, p. 533.

One female, Pelaboean Ratoe.

## Subfamily DEROPLATINAE

## DEROPLATYS DESICCATA Westwood

*Deroplatys desiccata* WESTWOOD, Mod. Class. Ins., vol. 1, 1839, p. 430.

One female, Depok, July.

## Subfamily HYMENOPODINAE

## CREOBROTER DISCIFERA Serville

*Mantis discifera* SERVILLE, Ins. Orth., 1839, p. 161.

One female, Buitenzorg, March; one female, Soekaboemi, March 25.

## HYMENOPUS CORONATUS Olivier

*Mantis coronatus* OLIVIER, Enc. Méth., vol. 7, 1792, p. 638.

One female, Buitenzorg, April 25; one female, Depok, August 10, five nymphs of various sizes, Buitenzorg, April and June, and Pelaboean Ratoe.

## Subfamily MANTINAE

## HIERODULA VENOSA Olivier

*Mantis venosa* OLIVIER, Enc. Méth., vol. 7, 1792, p. 639.

One female, Depok; four males, four females, four nymphs, Buitenzorg, March and April; also a dozen egg-masses, one with many first-stage nymphs, from Buitenzorg, which very surely belong here.

## HIERODULA, species

One male, Tjidobas, Mount Gede, September (4,000 feet altitude); one female, Soekaboemi, March 22; two nymphs, Tjidobas, Mount Gede, April 20; one nymph, Buitenzorg, March.

This undetermined species is near the one above determined as *venosa*, but the pronotum is a little more expanded apically and the anterior coxae are more bluntly armed.

<sup>5</sup>The Mantids are herein listed under subfamilies as used by Giglio-Tos.

**RHOMBODERA JAVANA** Giglio-Tos

*Rhombodera javana* GIGLIO-TOS, Bull. Soc. Ent. Ital., vol. 43, 1912, p. 103.

One female, Buitenzorg, March; one female, Depok, July.

These specimens are a little larger than the measurements given by Giglio-Tos and the pronotum is slightly narrower in proportion; otherwise they show no variation from the original description of this species.

**RHOMBODERA VALIDA** Burmeister

*Mantis valida* BURMEISTER, Handb. Ent., vol. 2, 1838, p. 536.

One male, four females, one female nymph, Buitenzorg, March.

**STATILIA MACULATA** Thunberg

*Mantis maculata* THUNBERG, Nov. Spec. Ins., vol. 3, 1784, p. 61.

One male, Pelaboean Ratoe; one female, Buitenzorg, March; one female, Tjibodas, Mount Gede, September (4,000 feet altitude).

**TENODERA ARIDIFOLIA** Stoll

*Mantis aridifolia* STOLL, Spectres, Mantes, 1813, p. 65, pl. 22, fig. 82.

One female, one egg-mass, Tjibodas, Mount Gede, September (4,000 feet altitude); one female, Depok, August.

**TENODERA FASCIATA** Olivier

*Mantis fasciata* OLIVIER, Enc. Méth., vol. 7, 1792, p. 640.

One male, Buitenzorg, June.

Subfamily **TOXODERINAE****PARATOXODERA CORNICOLLIS** Wood-Mason

*Paratoxodera cornicollis* WOOD-MASON, Journ. Asiat. Soc. Bengal, vol. 58, 1889, p. 325.

One female nymph apparently in the last stage, Buitenzorg, April 15.

Family **PHASMIDAE**Subfamily **ASCEPHASMINAE****ABROSOMA APTERUM** Redtenbacher

*Abrosoma apterum* REDTENBACHER, Ins. Fam. der Phasm., 1906, p. 85, pl. 4, figs. 7, 8.

One male, Buitenzorg, March.

Subfamily **NECROSCINAE****ASCELES ADSPIRANS** Redtenbacher

*Asceles adspirans* REDTENBACHER, Ins. Fam. der Phasm., 1908, p. 499.

Two males, Tjibodas, Mount Gede, September (4,000 feet altitude).

## LOPAPHUS TRANSIENS Redtenbacher

*Candayles transiens* REDTENBACHER, Ins. Fam. der Phasm., 1908, p. 539, pl. 26, fig. 7.

Two females, Tjibodas, Mount Gede, September (4,000 feet altitude); two females, one female nymph, same locality, April 20, altitude not stated; one female nymph, Buitenzorg, March.

The tegmina and wings of three of these four adult females are partly torn away in some unknown manner.

## ORXINES MACKLOTTII DeHaan

*Phasma macklottii* DEHAAN, Temminck, Verhandel., Orth., 1842, p. 126, pl. 11, figs. 1, 2.

Fourteen males, three females, Tjibodas, Mount Gede, April 20 (4,000 feet altitude).

## SIPYLOIDEA DOLOROSA Redtenbacher

*Sipyloida dolorosa* REDTENBACHER, Ins. Fem. der Phasm., 1908, p. 547.

One male, Pelaboean Ratoe.

The mesonotum of this specimen is barely granulate, thus deviating somewhat from the description.

## Subfamily PACHYMORPHINAE

## BACULUM ABLUTUS Brunner

*Clitumnus ablutus* BRUNNER, Ins. Fam. der Phasm., 1907, p. 190.

Two males, Tjibodas, Mount Gede, September.

This species is referred to the genus *Baculum* on the authority of Karny.<sup>6</sup>

The two specimens here recorded agree very well with published descriptions except that the color is apparently more uniformly brownish.

The left antenna of one of these specimens has been regenerated; it is short and heavy, about one and one-half times as long as the head and comprises but seven segments; the other antenna of this specimen is broken off rather short, and from the second specimen the antennae are both broken off. The prevalence of regenerated antennae in these long-horned insects, which are less than the natural length of these organs, together with the very general imperfect condition of the antennae, make the differentiation of the subfamily Pachymorphinae (= Clitumninae of Brunner and Redtenbacher) very difficult indeed.

## CUNICULINA NEMATODES DeHaan

*Phasma (Bacteria) nematodes* DEHAAN, Temminck, Verhandel., Orth., 1842, p. 132, pl. 11, fig. 6.

One male, Pelaboean Ratoe.

<sup>6</sup> Treubia, vol. 3, 1923, p. 235.

## EUCARCHARUS INVERSUS Brunner

*Eucarcharus inversus* BRUNNER, Ins. Fam. der Phasm., 1907, p. 186, pl. 8, fig. 1.

One female, Tjibodas, Mount. Gede, September.

This specimen agrees very well with the original description and figure except that the expansion of the sixth segment of the abdomen appears to be less noticeable.

## Subfamily PHASMINAE

## PHARNACIA NIGRICORNIS Redtenbacher

*Pharnacia nigricornis* REDTENBACHER, Ins. Fam. der Phasm., 1908, p. 452.

One male, Buitenzorg, April.

This specimen, which runs out to the above species by Redtenbacher's key, agrees very well with the description except that the antennae are not darker than the rest of the coloration.

## Subfamily PHYLLINAE

## PHYLLIUM GERYON Gray

*Phyllium geryon* GRAY, Zoologist, vol. 1, 1843, pp. 118, 121, fig. a.

One male, Tjibodas, Mount Gede, September; one female, Buitenzorg, March.

## PULCHRIPHYLLIUM PULCHRIFOLIUM Serville

*Phyllium pulchrifolium* SERVILLE, Ins. Orth., 1839, p. 292.

Six females and three female nymphs, Buitenzorg, March and April.

There are also three eggs in the collection marked as belonging to this species; they are round, the cap forming a protruding ball; the surface is smooth, not beautifully carved as in some of the Phasmidae.

One of the adult females above recorded has the expansion of the anterior femur with the edges entire, or almost so, a variation towards *gelonus* Gray; otherwise it seems typical of *pulchrifolium*.

## Subfamily PRISOMERINAE

## DIXIPPUS APPETENS Brunner

*Dixippus appetens* BRUNNER, Ins. Fam. der Phasm., 1907, p. 281.

One male, Soekaboemi, March; one male, Pelaboean Ratoe.

## LONCHODES BRYANTI, new species

*Description male*.—Appears most nearly allied to *S. praon* Westwood. Head with a pair of sharp thorns on the vertex between the eyes connected by a slightly elevated ridge; on the posterior extreme of the dorsal surface of the head is a transverse row of four tubercles, the middle two the larger, and scattered over the sides of the head are a few very minute granules. Antennae extending backward to about the extremity of the second segment of the abdomen and con-

sisting of about thirty distinct segments, most of which are elongate. Eyes subglobular and very prominent. Pronotum above moderately furnished with rather large but low tubercles; meso- and metanotum almost smooth, the former with a few low scattered tubercles; intermediate segment poorly defined, about one-third as long as the metanotum.

Legs rather short, especially the basally curved anterior femora which are no longer than the mesothorax; the legs are unarmed except that the femora have a couple of sharp triangular teeth near the apex on the posterior margin beneath; tibiae about equal in length to their respective femora except the anterior ones which are a little longer; the anterior femora are very slightly undulate dorsally.

Abdomen moderately slender, the basal four segments subequal in length, each about three times as long as broad; fifth segment a little shorter than the previous and the eighth one somewhat shorter than the fifth; seventh and eighth segments decidedly broadened and subequal to each other in length, each being about as long as broad, the seventh broadest posteriorly; ninth segment considerably longer than the preceding one and much narrower, strongly compressed and with the tip fissate; supra-anal plate not evident; operculum triangular, about as long as the segment from which it arises, apically angulate, ventrally carinate and basally noticeably swollen. Cerci ventral, very short, not nearly reaching tip of last abdominal segment.

*Female*.—Very like the male but less slender and differing in the following particulars: The tubercles of the head and thorax are decidedly larger and more numerous and the abdomen also bears some very low tubercular roughnesses. Anterior femora much more broadened beyond the subbasal situation than those of the male. Second segment of the abdomen about one and one-half times as long as broad; ninth segment broadly and briefly notched apically, the lateral angles triangular and projecting backward; supra-anal plate distinct, triangular, the tip pointed and the dorsal surface mesially elevated into a rather high longitudinal carina; operculum a little more elongate than that of the male, more regularly scoop-shaped and carinate ventrally; superior valves of the ovipositor simple and slender, the inferior pair basally expanded and with a fingerlike branch on the outer side; cerci more flattened than those of the male. Color as in the male.

*Measurements*.—Length, entire insect from front of head to tip of abdomen, male 55, female 58 mm.; antenna, male about 35 mm., broken in female, the longest remaining portion being 24 mm.; mesonotum, male 12, female 13 mm.; metanotum and intermediate segment together, male 8, female 9 mm.; anterior femora, male 12, female 10.5 mm.; intermediate femora, male 9, female 9 mm.; pos-

terior femora, male 12, female 10 mm.; cercus, both sexes about 1 mm.; width by calliper, head across eyes, male 3, female 3.5 mm.; mesonotum mesially, male 1.5, female 2.5 mm.

*Holotype*.—Male, Tjibodas, Mount Gede, Java, August 26 (7,800 feet altitude); allotype, female, same data as the holotype.

Holotype and allotype in National Museum.

*Type*.—Cat. No. 29140, U.S.N.M.

#### LONCHODES OBSTRACTUS Brunner

*Lonchodes obstrictus* BRUNNER, Ins. Fam. der Phasm., 1907, p. 260.

One female, Buitenzorg, March 18.

This female is placed here provisionally, the species being based on the male sex only.

#### LONCHODES, species

One male, Tjibodas, Mount Gede, April 20.

This is allied to *abbreviatus* but has the apical segment of the abdomen cleft to the base.

#### Subfamily THERAMENINAE

#### DATAMES OILEUS Westwood

*Acanthoderus oileus* Westwood, Cat. Phasm., 1859, p. 53, pl. 26, fig. 4.

One male, Tjibodas, Mount Gede (4,200 feet altitude).

This specimen agrees almost perfectly with the description and figure in Brunner and Redtenbacher.<sup>7</sup>

### Family ARCIDIDAE

#### Subfamily TETRIGINAE

#### SCELIMENA PRODUCTA Serville

*Tetrix producta* SERVILLE, Ins. Orth., 1839, p. 762.

Fourteen males and ten females from Buitenzorg in March, April, and June and one female from Mount Salak at an altitude of 3,000 feet. This fine series shows a range of total length of pronotum from 20 to 22 mm. in the male and 26 to 28.5 mm. in the female. A female from Java in the collection of the U. S. National Museum, presumably determined by Saussure, has a pronotal length of 31 mm.

#### BOLOTETTIX OCULATUS Bolivar

*Crioteitix oculatus* BOLIVAR, Ann. Mus. Genova, vol. 39, 1898, p. 71.

Two males from Buitenzorg, one in March and one on April 18, and two females from Mount Salak on May 15.

#### ACANTHALOBUS INORNATUS Walker

*Tetrix inornatus* WALKER, Cat. Derm. Salt. Brit. Mus., vol. 5, 1871, p. 834.

Two females, Buitenzorg in March.

<sup>7</sup> Ins. Fam. der. Phasm., 1906, p. 52, pl. 1, fig. 15.

Walker described this as with three lateral spines, but Kirby, who had the type before him for examination, says that this was an optical illusion. Kirby placed the *saginitus* of Bolivar as a synonym of this species, in which he was apparently justified, the only tangible difference noticeable between these Javan specimens and ones determined by Hebard from India being size, those from Java having a pronotal length in the female of 16 mm. while in the Indian specimens this is 17 mm. in the male and 20 to 21 mm. in the females. Bolivar gives 18 mm. as the pronotal length of the female of *saginitus*, being intermediate between the specimens noted above.

ACANTHALOBUS, species

One male from Buitenzorg in March. A very heavy form apparently allied to *robustus* Hancock but having the posterior metatarsus decidedly longer than the apical segment of the tarsus, in which respect it agrees with the macropterous *miliarius* of Bolivar. It is perhaps undescribed, but it is deemed unwise to erect new species in this difficult group from unique specimens.

ACANTHALOBUS, species

Two males of a smaller species than the above are in the collection from Pelaboean Ratoe without date.

SYSTOLODERUS PARVUS? Hancock

*Systoloderus parvus?* HANCOCK, Trans. Ent. Soc. Lond., 1907, p. 227.

Three females of what is probably this species are in the collection, two from Mount Salak on May 25, and one from Pelaboean Ratoe without date. The isolated description of this species, which makes no mention of certain important characters, makes certain determination impossible. The present specimens have the posterior ocelli located at a point barely if at all below the middle of the eyes, not on a plane with the antero-ventral border of the eyes as stated in the description of *parvus*, thus indicating specific distinctness.

MAZARREDIA CELEBICA Bolivar

*Mazarredia celebica* BOLIVAR, Ann. Soc. Ent. Belg., vol. 31, 1887, pp. 186, 238, 241.

One male from Buitenzorg in March and a female from Pelaboean Ratoe without date.

EUPARATETIX PERSONATUS Bolivar

*Paratettix personatus* BOLIVAR, Ann. Soc. Ent. Belg., vol. 31, 1887, pp. 188, 278.

Six males and five females as follows: Buitenzorg, three females; Mount Salak, six males and one female; Bantar Gebang, one male; Depok, one female.

This is a smaller species than *E. variabilis* as represented by Javan specimens determined by Hebard in the National Museum. The

posterior tibiae of the series of the *personatus* here recorded vary in color from black with a whitish band to unicolorously brown and the pronotal length measures from 8 to 8.5 mm. in the male and 8.5 to 9.5 mm. in the female. The wings noticeably exceed the pronotum in all these specimens.

EUPARATETTIX, species

Two females, Megamendg Mountains.

These are very like *E. personatus* as above determined except the face is more swollen below the antennae from a lateral view and the wings do not exceed the pronotum, which measures 10 mm. in length. The posterior tibiae are black with the bases lighter. On the dorsum above the shoulders there is a pair of longitudinal carinae, one on each side approximately midway between the median and lateral carinae.

EUPARATETTIX, species

A single male specimen of still another species of *Euparatettix* was in the collection, from Pelaboean Ratoe. This specimen is imperfect, having the posterior process of the pronotum broken off. It is more slender than *personatus* and has smoother and more slender posterior femora.

SPADOTETTIX ?, species

A single specimen without antennae and with the greater part of the body eaten away, is in the collection from Buitenzorg, taken in March.

HEDOTETTIX GRACILIS DeHaan

*Tettix gracilis* DEHAAN, Temminck, Verhandel., Orth., 1842, pp. 167, 169.

A female from Bantar Gebang without date; also a male from Buitenzorg in March which has the pronotal extension apparently somewhat abnormal, causing it to extend but little beyond the tip of the abdomen.

XISTRA ? species

Three females, two from Buitenzorg in March and one from Mount Salak in May.

HYBOELLA INFLATUS Krauss

*Coptotettix inflatus* KRAUSS, Denschr. Med. Nat. Ges. Jena, vol. 8, 1903, p. 758, pl. 57, fig. 10.

One adult pair and a second female from Tjibodas on April 20, one female from Mount Salak on May 15, and one female from Buitenzorg in March. The frontal costa in these specimens is ventrally expanded to a distance greater than the width of the basal segment of the antenna. These specimens agree very well with the description of *inflatus*, but there is little resemblance between them and the slender forms of the genus and it is doubtful if this species really belongs to *Coptotettix*.

## Subfamily EUMASTACINAE

## ERUCIUS JAVANUS Burr

*Erucius javanus* BURR, An. Soc. Espan., vol. 28, 1899, pp. 89, 109, 110.

One mated pair, Tjibodas, Mount Gede, April 20, a female nymph from same locality and an adult male from Buitenzorg in March.

## Subfamily ACRIDINAE.

## ACRIDA TURRITA Linnaeus

*Gryllus (Acrida) turrita* LINNAEUS, Syst. Nat., 10 ed., 1758, p. 427.

One adult male, Mount, Salak, May 15; one large female nymph from Buitenzorg in March and fourteen adult females from Mount Salak, Depok, and Buitenzorg on various dates. The male and five of the females are brown, the others green. The lanceolate supranal plate of the immature forms of this species is indeed a remarkable development.

## PHLAEOBA FUMOSA Serville

*Opsomala fumosa* SERVILLE, Ins. Orth., 1839, p. 593.

Five males, 20 females and one female nymph from Buitenzorg, Mount Salak, and Pelaboean Ratoe on various dates from March to June. This series showed very little variation in size or color.

## AIOLOPUS, species

An adult male from Buitenzorg in March is referred to the genus *Aiolopus*. It does not appear to be the *A. tamulus* of Fabricius and may perhaps represent an undescribed form.

## Subfamily OEDIPODINAE

## HETEROPTERNIS OBSCURELLA Blanchard

*Oedipoda obscurella* BLANCHARD Voy. Pole Sud., Zool., vol. 4, 1853, p. 375.

One male and sixteen females, the male from Buitenzorg and all the females from Mount Salak. The wings of these specimens are more or less yellowish basally, though this is very surely a variable character as some of apparently the same species from the Philippines have the wings basally roseate instead of yellowish. The lateral lobes of the pronotum vary a little in the posterior margin, which ranges from almost straight to noticeably concave; the posterior-inferior angle is rounded, in no way subproduced and acute as described in the works of Saussure for the allied *splendens* of Walker (= *pyrrhoscelis* Stal).

## GASTRIMARGUS TRANSVERSUS Thunberg

*Gryllus transversus* THUNBERG, Mem. Acad. Petersb., vol. 5, 1815, p. 233.

Five males, three females, and three female nymphs from Mount Salak, two females from Depok and one female from Buitenzorg. These specimens are essentially like ones of *G. marmoratus* Thunberg in the National Museum collection apparently determined by Saus-

sure; the scutellum of the vertex in all the Javan specimens are, however, less concave and with a very distinct raised longitudinal carina extending its entire length, while in the two specimens of *marmoratus* examined this scutellum is more concave and has a very slight median carina, and that not continuous. These characters, while constant in the Javan series here recorded, are evidently subject to more or less variation, as two males and a female of *G. africanus* Saussure, as determined by Uvarov and now before me, show decided variation in this respect.

**TRILOPHIDIA CRISTELLA** Stal

*Oedipoda cristella* STAL, Eug. Resa, Orth., 1860, p. 344.

One male and four females, Buitenzorg; one female, Batavia; one female, Pelaboean Ratoe.

**TRILOPHIDIA ANNULATA** Thunberg

*Gryllus annulate* THUNBERG, Mem. Acad. Petersb., vol. 5, 1815, p. 234.

One male, three females, Buitenzorg; one female, Mount Salak; one male, Megamendg Mountains, (4,800 feet altitude); one male, Pelaboean Ratoe.

Superficially this species appears rather similar to *cristella* but is somewhat larger. *Annulata* also has the median carina of the pronotum more profoundly bisected than in *cristella*, though it is rather deeply cleft in both species. The most salient morphological character separating these two species is found on the prozona, where in *annulata* is seen on each side of the disk near the anterior margin a well elevated tubercle while in *cristella* there is but a slight diagonal carina at this point.

Subfamily PYRGOMORPHINAE

**AULARCHES PUNCTATUS** Drury

*Gryllus (Locysta) punctatus* DRURY, Ill. Exot. Ent., vol. 2, 1773, pl. 41, fig. 4.

One male, Buitenzorg in June, and one female, Mount Salak on May 4.

**TAGASTA MARGINELLA** Thunberg

*Tagasta marginella* THUNBERG, Mem. Acad. Petersb., vol. 5, 1815, p. 265.

One adult female, without locality label but with an altitude label reading 3,000 feet; also a female nymph from Bantar Gebang. Allowing for sexual differences this adult specimen agrees very well with the description of the male as given by Stal in 1873.<sup>8</sup>

**ATRACTOMORPHA PSITTACINA** DeHaan

*Acridium (Truxalis) psittacina* DEHAAN, Temminck, Verhandel., Orth., 1842, p. 146.

Three adult males and a female nymph from Pelaboean Ratoe and three males from Buitenzorg.

<sup>8</sup> Rec. Orth., pt. 1, p. 13.

## ATTRACTOMORPHA CRENULATA Fabricius

*Truxalis crenulata* FABRICIUS, Ent. Syst., vol. 2, 1793, p. 28.

Five males, eleven females, and three nymphs from Buitenzorg; three females from Pelaboean Ratoe; one male and a nymph from Megamendg Mountains; one female from Mount Salak; one female from Tjibodas, Mount Gede.

## Subfamily CYRTACANTHACRINAE

## OXYA VELOX Fabricius

*Gryllus velox* FABRICIUS, Mant. Ins., vol. 1, 1787, p. 239.

Nine males and twenty-three female adults and one male and four female nymphs, the nymphs and seven of the adults from Buitenzorg, all in March except two males in June, the rest from Mount Salak in May, some at or above 3,000 feet altitude.

Many of these specimens, especially those from Buitenzorg, are much discolored from immersion in spirits.

## OXYA RUFIPES? Brunner

*Oxya rufipes* BRUNNER, Ann. Mus. Genova, vol. 33, 1893, pp. 152, 153.

A single adult female from Buitenzorg in June is referred here. It was collected in spirits and the color is much faded. The last ventral segment of the abdomen of this specimen is without longitudinal carina but it is apically tridentate, a character at variance with the original description and one indicating that this may indeed be *rufipes*. It may perhaps be the little known *obtusa* of DeHaan. It certainly is not the species described by Carl as *O. minuta*.

## CARYANDA SPURIA Stal

*Acridium (Oxya) spuria* STAL, Eug. Resa, Orth., 1860, p. 336.

One male, Tjibodas, Mount Gede in April, and one male and three females from Buitenzorg in March. The males agree very well with the description of that sex as given by Stal. The antennae are no longer than the head and pronotum together and the basal two segments are yellow, followed apically by reddish fading into brownish; the tegmina are one-half as broad as long, the broadest point being noticeably distad of the middle; in the male specimen the anal area is tinged with greenish, evidently a matter of individual variation. The valves of the ovipositor are rather slender and the margins are furnished with a few dull serrations.

*Measurements*.—Length, pronotum, male 3.5, female 5 mm.; tegmina, male 3, female 4 mm.; posterior femora, male 9.5, female 14 mm.; width, tegmina at widest point, male 1.5, female 2 mm.

One male and two females of the above lot from Buitenzorg were collected in spirits and thus they are shrunken and have lost much of their natural color.

## TAUCHIRA ABBREVIATA Serville

*Acridium abbreviata* SERVILLE, Ins. Orth., 1839, p. 678.

One male and a female from Buitenzorg and four females from Tjibodas, Mount Gede.

The blue posterior tibiae of this species will serve to distinguish it from the closely allied *T. lucida* of Krauss, which was described from Samarang and Tjibodas but is not represented in the present collection.

## VALANGA NIGRICORNIS, var. MELANOCORNIS Serville

*Acridium melanocorne* SERVILLE, Ins. Orth., 1839, p. 659.—UVAROV, Ann. Mag. Nat. Hist., vol. 12, 1923, p. 352, figs.

Six males, thirteen females, and one male nymph from Buitenzorg.

This series, while rather uniform in size, varies greatly in color; one extreme is uniformly wood-brown and the other with a conspicuous yellowish or yellow-green stripe extending from the fastigium of the vertex along the whole length of the pronotal disk and along the anal area of the tegmina almost to the tip. Various intergrades between these extremes occurs, showing rather conclusively that but a single species is involved. The posterior tibiae vary from pale reddish to yellow.

A single specimen of typical *nigricornis* Burmeister is in the collection, a male taken at Singapore.

## CHONDRACRIS ROSEA, var. BRUNNERI Uvarov

*Chondracris rosea*, var. *brunneri* UVAROV, Ann. Mag. Nat. Hist., vol. 14, 1924, p. 108.

One male, six females, and a female nymph from Buitenzorg. These are a little larger than the types described by Uvarov.

## PATANGA SUCCINCTA Johansson

*Gryllus (Locusta) succincta* JOHANSSON, Amoen. Acad., vol. 6, 1763, p. 398.—UVAROV, Ann. Mag. Nat. Hist., vol. 9, 1923, p. 143.

One male and seven females, Depok; one male, Soekaboemi; one female, Buitenzorg.

All these specimens have red-tinted underwings except the male from Soekaboemi, which has them transparent to the base; this specimen is also much less variegated in color than the others, having the costal streak of the tegmina, the dorsal stripe of the head, pronotum, and anal area of tegmina and the markings on the lateral lobes of the pronotum very obscure; it resembles very much ones examined from Banks Island and localities near Bombay.

Aside from coloration there is decided structural variation evident in material referred to this species, as the shape of the prosternal spine, the cerci of the male, the supra-anal plate of the same sex, etc.

**BIBRACTE DEMINUTA** Brunner

*Bibracte deminuta* BRUNNER, Abhandl. Senckenb. Ges., vol. 24, 1898, pp. 241, 242, pl 18, fig. 38.

Five females and one female nymph from Tjibodas, Mount Gede, and one female from Buitenzorg in March.

**BIBRACTE HAGENBACHII** DeHaan

*Acridium hagenbachii* DEHAAN, Temminck, Verhandl., Orth., 1842, pp. 153, 154, pl. 21, fig. 2.

Two males, Depok and Pelaboean Ratoe.

**COPTACRA FOEDATA** Serville

*Acridium foedatum* SERVILLE, Ins. Orth., 1839, p. 662.

Five females, Buitenzorg; one female, Pelaboean Ratoe; one female and a male nymph, Mount Salak.

**TRAUZIA FLAVOANNULATA** Stal

*Acridium flavoannulata* STAL Eugen. Resa, Oth., 1860, p. 329.

A single male from Buitenzorg. The posterior legs of this specimen are missing, but there is scarcely a doubt of the correctness of the determination.

**CATANTOPS HUMILIS** Serville

*Acridium humilis* SERVILLE, Ins. Orth., 1839, p. 662.

A pair from Buitenzorg in March, collected in spirits and thus much discolored, is referred to this species.

Family **TETTIGONIDAE**Subfamily **RHAPHIDOPHORINAE****RHAPHIDOPHORA DEUSTA** Brunner

*Rhaphidophora deusta* BRUNNER, Verh. zool.-bot. Ges. Wien, vol. 38, 1888, p. 298.

Thirteen males, eight females, Buitenzorg in March; four males, four females, Mount Salak; one male, Pelaboean Ratoe.

This series ranges in size from large males with the posterior femora 30 mm. long to small ones clearly immature. Some specimens, however, that appear to be adult are decidedly smaller than the size usually given for this species. Except for the unserrated ovipositor, some of the specimens would be referable to *R. fulva* Brunner.

Subfamily **GRYLLACRINAE****GRYLLACRIS TIBIALIS** Serville

*Gryllacris tibialis* SERVILLE, Ins. Orth., 1839, p. 393.

One male and three females from Mount Salak, without date, and two females from Buitenzorg in March and April.

**GRYLLACRIS SIGNIFERA Stoll**

*Gryllus (Tettigonia) signifera* STOLL, Spectres, Saut., 1813, p. 26, pl. 12a, fig. 50.

Four males, two females and two female nymphs from Buitenzorg in March and April; one male from Pelaboean Ratoe; one female from Depok.

**GRYLLACRIS FALCATA Brunner**

*Gryllacris falcata* BRUNNER, Verh. zool.-bot. Ges. Wien, vol. 38, 1888, p. 341.

One female, Buitenzorg, March.

**GRYLLACRIS RUFICEPS Serville**

*Gryllacris ruficeps* SERVILLE, Ann. Sci. Nat., vol. 22, 1831, p. 139.

One male, Buitenzorg, March; one male, Mount Salak, without date.

**GRYLLACRIS PHRYGANOIDES DeHaan**

*Gryllacris phryganoides* DEHAAN, Temminck, Verhandl., Orth., 1842, p. 219.

One female, Buitenzorg, June.

There are also half a dozen undetermined specimens of the genus *Gryllacris* in the collection.

## Subfamily COPIPHORINAE

**PYRGOCRYPHA SUBULATA Thunberg**

*Pyrgocrypha sublata* THUNBERG, Mem. Acad. Petersb., vol. 5, 1815, p. 271.

One female, Buitenzorg in March.

**EUCONOCEPHALUS INDICUS Redtenbacher**

*Conocephalus indicus* REDTENBACHER, Verh. zool.-bot. Ges. Wien, vol. 41, 1891, pp. 382, 408.

One female from Buitenzorg in March and one female from Pelaboean Ratoe without date, both brown in color.

**EUCONOCEPHALUS EXTENSOR Walker**

*Conocephalus extensor* WALKER, Cat. Derm. Salt. Brit. Mus., vol. 2, 1869, p. 329.

One female, Pelaboean Ratoe, without date.

## Subfamily AGROECINAE

**OXYSTETHUS BREVIPENNIS Redtenbacher**

*Oxystethus brevipennis* REDTENBACHER, Verh. zool.-bot. Ges. Wien, vol. 41, 1891, pp. 441, 443.

One male, Mount Salak, May 15.

## Subfamily CONOCEPHALINAE

**CONOCEPHALUS MELAENUM DeHaan**

*Conocephalus melaenum* DEHAAN, Temminck, Verhandl., Orth., 1842, pp. 188, 189.

One male from Buitenzorg in March and a female from Bantar Gebang without date. In both of these specimens the posterior femora have but one ventral spine.

**CONOCEPHALUS LONGICORNIS** Redtenbacher

*Conocephalus longicornis* REDTENBACHER, Verh. zool.-bot. Ges. Wien, vol. 41, 1891, pp. 496, 513.

One female from Pelaboean Ratoe without date.

**CONOCEPHALUS**, species

One female nymph from Buitenzorg in March apparently belongs to neither of the above species.

Subfamily LISTROSCELINAE

**XIPHIDIOPSIS FALLAX** Redtenbacher

*Xiphidiopsis fallax* REDTENBACHER, Verh. zool.-bot. Ges. Wien, vol. 41, 1891, pp. 531, 532.

One male, Mount Salak, May 15. The pronotal disk of this specimen has a mesial longitudinal yellowish stripe.

**HEXACENTRUS MUNDA**, var. **SIMILIS**, new variety

This differs principally from typical *munda* from the Moluccas in having the antennae with the widely separated black bands present only in the apical half of their length instead of their entire length, and by having the posterior margin of the pronotal disk distinctly emarginate, a condition scarcely indicated in the typical form. The glassy oval of the auditory organ of the tegmina is also slightly less elongate in the Javan form. Size as in *munda*. Described from one male from Buitenzorg, Java, in March.

Type in National Museum.

*Type*.—Cat. No. 27906, U.S.N.M.

**HEXACENTRUS UNICOLOR** Serville

*Hexacentrus unicolor* SERVILLE, Ann. Sci. Nat., vol. 22, 1831, p. 146.

One male and one female, Mount Salak, without date; one male, Buitenzorg in March; one female, Depok, August 1. Also two female nymphs probably belonging here, a medium sized one from Pelaboean Ratoe without date and a smaller one from Buitenzorg in March.

Subfamily EUMEGALODONTINAE

**ELLATODON**, new genus

The use of the genus *Eumegalodon* Brongniart for the species *blanchardi* by Kirby<sup>9</sup> is unwarranted. *Emegalodon* was proposed to replace the preoccupied genus *Megalodon* of Brullé, and thus its type is *ensifer*, the same as that of the replaced genus. Being later than Walker's genus *Lesina* the genus *Eumegalodon* falls into synonymy under that genus.

The type of *Lesina* Walker is the species *lutescens* of that author; the type of this species was casually examined some years ago in

<sup>9</sup>Syn. Cat. Orth., vol. 2, 1906, p. 289.

London and was found to be a half-grown nymph with the wings not yet developed, a condition so obvious as to very surely have been recognized by Walker. However, no indication of such immaturity is to be found in his description, and this is not a unique case of this sort of misleading element in the works of that most careless of writers. Whether *lutescens* is a distinct species or a synonym of *ensifer* is a matter of some doubt, but probably the latter.

The fact that *Lesina ensifer* and *lutescens* have the anterior and intermediate femora spined both above and below while the species described by Brongniart as *blanchardi* have them armed only below indicates that Kirby was correct in according the last generic distinctness in his catalogue.<sup>10</sup> But, as shown above, his use of *Eumegalodon* in this connection was wrong, and thus a new generic name is needed for the reception of *Megalodon blanchardi* Brongniart. For this purpose the new generic name *Ellatodon* is here proposed. The relationship of the genera and species above noted is as follows:

*Lesina* Walker. (Type, *Lesina lutescens* Walker.)

*Megalodon* Brullé (not Sowerby). (Type, *Megalodon ensifer* Brullé.)

*Eumegalodon* Brongniart. (Type, *Megalodon ensifer* Brullé.)

1. *Lesina ensifer* Brullé.

2. *Lesina lutescens* Walker.

*Ellatodon* Caudell. (Type, *Megalodon blanchardi* Brongniart.)

*Eumegalodon* Kirby (not Brongniart).

1. *Ellatodon blanchardi* Brongniart.

#### LESINA ENSIFER Brullé

*Megalodon ensifer* BRULLÉ, Hist. Nat. Ins., vol. 9, 1835, p. 157, pl. 15, fig. 4.

One male, Bantar Gebang, without date.

#### Subfamily PSEUDOPHYLLINAE

#### Genus CHLORACRIS Pictet and Saussure

The genus *Pseudophyllus* was established by Serville<sup>11</sup> with a single included species, the *Gryllus Tettigonia neriifolius* of Stoll. According to present rules of nomenclature, specifically covered by paragraph 96 of the Entomological Code and opinion 65 of the International Commission of Nomenclature, this species must be retained as the genotype regardless of misdetermination. The disregard of this principle has given rise to much confusion in this genus. The genus *Cleandrus* of Stal<sup>12</sup> was based on the single species *Pseudophyllus graniger* Serville, a species now generally conceded to be a synonym of *neriifolius* Stoll. Thus *Cleandrus* Stal is a synonym of *Pseudophyllus* Serville, both genera having the same species as type.

<sup>10</sup> Syn. Cat. Orth., vol. 2, 1906, p. 289.

<sup>12</sup> Rec. Orth., vol. 2, 1874, pp. 50, 67.

<sup>11</sup> Ann. Sci. Nat., vol. 22, 1831, p. 143.

Thus the species listed by Kirby<sup>13</sup> in the genus *Cleandrus* are to be transferred to *Pseudophyllus*, and for the species listed by him<sup>14</sup> under *Pseudophyllus* the genus *Chloracris* of Pictet and Saussure is resurrected. The *Pseudophyllus fortis* of Walker (= *obesus* Stal) is referable to *Chloracris* as the pronotal disk is posteriorly rounded. The new alignment as above discussed is as follows:

- Pseudophyllus* Serville. (Type, *Gryllus* (*Tettigonia*) *neriifolius* Stoll.)  
*Cleandrus* Stal. (Type, *Pseudophyllus graniger* Serville (= *neriifolius* Stoll.)  
 Species as listed under *Cleandrus* by Kirby<sup>15</sup> except *fortis* Walker (= *obesus* Stal).  
*Chloracris* Pictet and Saussure. (Type *Chloracris brullei* Pictet and Saussure.)  
*Pseudophyllus* Kirby (not Serville). (Type, *Chloracris prasina* Pictet and Saussure.)  
 1. *Chloracris prasinus* Pictet and Saussure.  
 2. *Chloracris brullei* Pictet and Saussure..  
 3. *Chloracris harrisoni* Rehn.  
 4. *Chloracris fortis* Walker (= *obesus* Stal).

#### CHLORACRIS PRASINUS Pictet and Saussure

*Chloracris prasinus* PICTET and SAUSSURE, Icon. Saut. Vertes., 1892, p. 22, pl. 3 figs. 14, 14b.

One male and one female from Buitenzorg in March and one female from Mount Salak on May 15 at an altitude of 3,000 feet.

#### PSEUDOPHYLLUS NERIIFOLIUS Stoll

*Gryllus* (*Tettigonia*) *neriifolius* STOLL, Spectres, Saut., 1813, p. 11, pl. 4a, fig. 11.

One female, Buitenzorg in March.

#### PSEUDOPHYLLUS TITAN White

*Pseudophyllus titan* WHITE, Ann. Nat. Hist., vol. 18, 1846, p. 24.

A male and a female, both nymphs, are referred to this species. They are from Buitenzorg, taken in March.

#### ONOMARCHUS LEUCONOTUS Serville

*Pseudophyllus leuconotus* SERVILLE, Ins. Orth., 1839, p. 469.

One male and four females, Depok, August 1; Mount Salak, no date (3,000 feet altitude); and Buitenzorg in March.

Two of these females are what may be considered the typical form, having the tegmina but 25 mm. wide at the middle, the others having the tegmina decidedly broader, 30 in the male and 35 in the female. So different in appearance are the broader winged forms that it seems well to recognize them as a variety, for which the name *latipennis* Pictet and Saussure is available.

<sup>13</sup> Syn. Cat. Orth., vol. 2, 1906, pp. 294, 295.

<sup>14</sup> Idem, p. 294.

<sup>15</sup> Idem, p. 295.

**MIOACRIS BREVIFOLIA** DeHaan

*Locusta* (*Aprion*) *brevifolia* DEHAAN, Temminck, Verhandel., Orth., 1842, p. 207, pl. 19, fig. 3.

Two females and three nymphs from Tjibodas, Mount Gede, April 20, and Buitenzorg.

**GONYATOPUS PILOSUS?** Brunner

*Gonyatopus pilosus* BRUNNER, Monogr. Pseudoph., 1895, pp. 63, 64, pl. 3, fig. 23.

One female, Depok, August 1. Specimen too poor for unquestioned determination.

**SATHROPHYLLIA FEMORATA** Fabricius

*Locusta femorata* FABRICIUS, Mant. Ins., vol. 1, 1787, p. 233.

Four females and two female nymphs from Buitenzorg in March and one female from Mount Salak, May 15.

Two of these adult specimens are much lighter in color than the others.

## Subfamily MECOPODINAE

**MECOPODA ELONGATA** Linnaeus.

*Gryllus* (*Tettisonia*) *elongata* LINNAEUS, Syst. Nat., 10 ed., vol. 1, 1758, p. 429.

Eight males, seven females, five male nymphs, and one female nymph from Mount Salak, Depok, Pelaboean Ratoe, and Buitenzorg.

Four color forms are represented by this series, uniformly brown, brown marked with shining black spots, uniformly green, and green with some black spots.

## Subfamily PHANEROPTERINAE

**ELIMAEA CURVICERCATA** Brunner

*Elimaea curvicercata* BRUNNER, Verh. zool.-bot. Ges. Wien, vol. 41, 1891, p. 47, 50.

Two males from Mount Salak, one on May 15 and one without date.

**ELIMAEA, species**

One female from Pelaboean Ratoe without date. This specimen, which is somewhat discolored, is apparently allied to the *E. rosea* of Brunner but differs in several details from the description of that species.

**DUCETIA JAPONICA** Thunberg

*Ducetia japonica* THUNBERG, Mem. Acad. Petersb., vol. 5, 1815, p. 282.

Four males, Tjibodas, Mount Gede, September; Mount Salak, no date; Depok, July, and Buitenzorg, June.

**SYMMACHIS SUBROSEATA** Walker?

*Phaneroptera subroseata* WALKER, Cat. Derm. Salt. Brit. Mus., vol. 2, 1869, p. 351.

One female, Buitenzorg in March. This specimen fits the description of *subroseata* only fairly well and is thus referred here with some doubt.

## ANCHLECHA FENESTRA Fabricius

*Locusta fenestrata* FABRICIUS, Ent. Syst., vol. 2, 1793, p. 34.

One female, Buitenzorg, April 25.

## PSYRA BORNEENSIS Brunner

*Psyra borneensis* BRUNNER, Monogr. Phaneropt., 1878, pp. 170, 171.

One male in poor condition from Buitenzorg in March.

This specimen, which runs out to this species by Brunner's keys, has the posterior legs missing and is imperfect in various other ways. The tegima are marked rather inconspicuously by two longitudinal rows of small brown spots, and the well-developed tympani are blackish; the cerci are similar to those of *melanonota* except the subapical inner tooth is smaller than in a male of that species determined by Hebard from the Moluccas. The antennae are concolorous with the body in the basal half, beyond becoming blackish with narrow light annulations. From *tigrina* Brunner, the only species described as with maculate tegmina, this specimen differs in various ways and is also decidedly larger, the measurements being as follows: Length, pronotum, 6 mm.; anterior femora, 8 mm.; posterior femora missing; tegima, 46 mm.; width, tegima at middle, 9.5 mm.

## PSYRA UNICOLOR Brunner

*Psyra unicolor* BRUNNER, Monogr. Phaneropt., 1878, pp. 170, 172.

One male, Mount Salak, no date.

This specimen is in rather poor condition, having been badly damaged by museum pests, but all the essential parts are present and agree almost perfectly with the original description.

## HOLOCHLORA INDICA Kirby

*Holochlora indica* KIRBY, Syn. Cat. Orth., vol. 2, 1906, p. 430.

Three males, one female, and a small male nymph from Buitenzorg, March, April, and June.

## HOLOCHLORA JAVANICA Brunner

*Holochlora javanica* BRUNNER, Verh. zool.-bot. Ges. Wien, vol. 42, 1891, pp. 90, 91.

One female, Buitenzorg in March.

## HOLOCHLORA VENOSA? Stal

*Holochlora venosa* STAL, Oefv. Vet.-Akad. Förh., ser. 4, vol. 30, 1873, p. 43.

One female from Buitenzorg in March, evidently collected in spirits.

The basal folds of the ovipositor are black on their dorsal fourth, the only character at variance with Brunner's description of *venosa*, in this particular tending toward *emarginata* and *signata*, with the descriptions of which it agrees no better, however, than with those of *venosa*. The subgenital plate is slightly emarginate apically.

Genera *SYMPAESTRIA* Brunner and *STIBAROPTERA* Brunner

There appears to be considerable confusion as to the characters and status of the species of *Sympaestria*. Brunner entered this genus in his keys under the category of forms in which the anterior coxae are spined, while as a matter of fact the coxae are unarmed. Also Brunner described a species from the East Indies as *Stibara cornea* and gave the habitat as Brazil, and one year later<sup>16</sup> he admitted the synonymy of this species with the *Sympaestria nitidifolia* of De Haan from the East Indies, which infers the admission of error in the habitat of *cornea*. Dohrn, in view of the above facts, relegates the genus *Stibara* of Brunner to the synonymy under *Sympaestria*, and describes one new species, *longipes* from Java. It results, however, that, of the four species thus classed in *Sympaestria*, two, *acutiloba* Brunner, the type of the genus, and *truncatilobata* Brunner, have the foramina of the anterior tibiae open on the outer side only, that on the inner side being partly closed, classed as conchate, while in *nitidicola* De Haan (= *cornea* Brunner) and *longipes* Dohrn the foramina are open on both faces of the tibiae. As this foraminal character is of generic importance the forms with the foramina open on both sides should be removed from the genus in which they are conchate on the inner side. For these species the generic name *Stibaroptera* of Bolivar, a name made to replace the preoccupied *Stibara* of Brunner, is available. The two genera will thus stand as follows:

I. *Sympaestria* Brunner. (Type, *acuteloba* Brunner.)

(Anterior coxae unarmed; anterior tibiae with foramina open on the outer side only.)

1. *S. acutelobata* Brunner.

2. *S. truncatilobata* Brunner.

II. *Stibaroptera* Bolivar (= *Stibara* Brunner). (Type, *cornea* Brunner.)

(Anterior coxae unarmed; anterior tibiae with foramina open on both sides.)

1. *S. nitidifolia* DeHaan (= *cornea* Brunner).

2. *S. longipes* Dohrn.

*SYMPAESTRIA ACUTELOBATA* Brunner

*Sympaestria acutelobata* BRUNNER, Monogr. Phaneropt., 1878, p. 185, pl. 3, figs 52a, b.

*ANEROTA GRACILIS* Burmeister

*Phaneroptera gracilis* BURMEISTER, Handb. Ent., vol. 2, 1838, p. 690.

Seven males and one female, Buitenzorg, March and June; Tjibodas, Mount Gede, April 20, and Pelaboean Ratoe, without date.

*XANTIA BORNEENSIS* Brunner

*Xantis borneensis* BRUNNER, Monogr. Phaneropt., 1878, p. 371, pl. 7, fig. 112.

One female, Tjibodas, Mount Gede, April 20.

<sup>16</sup> See Dohrn, Stett. Ent. Zeit., vol. 8, 1892, p. 72.

There is little doubt of this specimen belonging to this rare and structurally interesting species, the male only of which was known to the describer. The present female seems to agree in every particular with the original description and figure of the male except for size and sexual characters. The ovipositor is curved strongly upward and the dorsal margin is finely serrate in the apical half, or slightly more, and for a much less distance on the lower margin; the serrated portions of the margins are darker than the rest of the surface.

The measurements of this female are as follows: Length, pronotum, 15 mm.; tegmen, 74 mm.; posterior femora, 35 mm.; ovipositor, 13 mm.; width, pronotum posteriorly, 10 mm.; tegmen at middle, 26 mm.; posterior tibia ventrally at middle of expansion, 6 mm.; ovipositor at widest point, 5 mm.

There is clearly an error in Brunner's original measurements of the male, as he gives the pronotal length as but 9 mm. when it must be at least 14 mm.

### Family GRYLLILAE

#### Subfamily GRYLLOTAPINAE

#### GRYLLOTALPA AFRICANA Beauvois

*Gryllotalpa africana* BEAUVOIS, Ins. Afr. Amer., 1805, p. 229, pl. 2c, fig. 6.

Two males, seven females, and four nymphs, all from Buitenzorg in March and April, except one nymph from Tjibodas, Mount Gede, at an altitude of 4,500 feet.

This series shows no differences from specimens from Africa. The smallest of the nymphs is apparently in the first stage; it has the anterior tibiae with but three fingers and the posterior tibiae have a preapical pale band.

#### GRYLLOTALPA HIRSUTA Burmeister

*Gryllotalpa hirsuta* BURMEISTER, Handb. Ent., vol. 2, 1838, p. 739.

Four males, three females, and two nymphs from Buitenzorg in March and April.

All the males are brachypterous while all the females have the wings caudate. The males agree with the description of *hirsuta* and the females with that of *longipennis* DeHaan, now a recognized synonym of *hirsuta*.

#### TRIDACTYLUS PULEX Saussure

*Tridactylus pulex* SAUSSURE, Rev. Suisse Zool., vol. 4, 1896, p. 419.

One female, Batavia, April 1.

This is decidedly larger than the male, measuring fully 5 mm. in length.

## Subfamily MOGISOPLISTINAE

## ORNEBIUS, species

One male from Buitenzorg in March, a specimen without legs and apparently immature. It is barely 5 mm. in length.

## Subfamily GRYLLINAE

## NEMOBIUS LUZONICUS Bolivar

*Nemobius luzonicus* BOLIVAR, An. Soc. Espan., vol. 18, 1889, p. 418.

A single male from Tjibodas, Mount Gede, April 20, is referred to this species. It agrees with specimens from the Philippines.

## NEMOBIUS NOVARAE Saussure

*Nemobius novarae* SAUSSURE, Mem. Soc. Geneve, vol. 25, 1877, p. 83, pl. 11, fig. VII-10.

One male and one female from Pelaboean Ratoe without date, and one female from Mount Salak, May 15, at an altitude of 3,000 feet.

## NEMOBIUS HISTRIO Saussure

*Nemobius histrio* SAUSSURE, Mem. Soc. Geneve, vol. 25, 1877, p. 95.

One male, Buitenzorg, March 7. This specimen is brachypterous and the characters agree with those of *histrio* with the exception that the vertex is mottled instead of longitudinally striped.

## BRACHYTRUPES PORTENTOSUS Lichtenstein

*Acheta portentosus* LICHTENSTEIN, Cat. Mus. Zool. Hamburg, vol. 3, 1796, p. 85.

Nine males, eighteen females, and five nymphs, all from Buitenzorg in March, except one male, three females, and one male nymph from Mount Salak, the females on May 15.

This fine series of specimens shows some variation in size, color, and wing length.

## GYMNOGRYLLUS ELEGANS Guerin

*Gymnogrillus elegans* GUERIN, Belanger, Voy. Ind. Orient., Zool., 1834, p. 495, pl. 9, fig. 1.

Twenty-two specimens of this beautiful cricket were in the collection, representing both sexes and various stages of nymphs. Most of the material was taken at Mount Salak but some at Tjibodas, Mount Gede,

This series is remarkably uniform in size and structure and the only variation in color noticeable is that the pronotal disk is marked with reddish yellow along the posterior margin in a few specimens; this is the case in all the nymphs, indicating it is a nymphal character which sometimes persists in the adult.

## GYMNOGRYLLUS PULVILLATUS Saussure

*Brachytrypus pulvillatus* SAUSSURE, Mem. Soc. Geneve, vol. 25, 1877, p. 124.

Three males, two females, and one female nymph from Buitenzorg in March.

The more robust form, the more pubescent body and femora and the greater number of spines on the posterior tibiae lead to the determination of these specimens to *pulvillatus* rather than *angustus*. *Pulvillatus* was described from Java, though Kirby<sup>17</sup> gives its habitat as Madras.

**GRYLLUS MITRARUS** Burmeister

*Gryllus mitrarus* BURMEISTER, Handb. Ent., vol. 2, 1838, p. 734.

One female and two nymphs from Depok in June; one female from Pelaboean Ratoe without date; one nymph from Megamendg Mountains (altitude 4,800 feet).

These specimens are somewhat darker than typical but evidently represent one of the several color phases in which this variable species is known to occur. They agree with no other species of *Gryllus* known to occur in Java.

**GRYLLUS CONSOBRINUS** Saussure

*Gryllus consobrinus* SAUSSURE, Mem. Soc. Geneve, vol. 25, 1877, p. 188, pl. 12, fig. xi-4.

One adult pair from Buitenzorg without date.

**GRYLLUS BURDIGALENSIS**, var. **CERISYI** Serville

*Gryllus cerisyi* SERVILLE, Ins. Orth., 1839, p. 342.

*Gryllus burdigalensis*, var. *cerisyi* SAUSSURE, Mem. Soc. Geneve, vol. 25, 1877, p. 185, pl. 12, fig. xi-3.

One female from Pelaboean Ratoe without date.

**GRYLLODES BLENNUS** Saussure

*Grylloides blennus* SAUSSURE, Mem. Soc. Geneve, vol. 25, 1877, p. 215.

One macropterous female from Pelaboean Ratoe without date.

This long-winged specimen has the tegmina decidedly longer than macropterous specimens as described by Bolivar, being 6 mm. in length; otherwise it agrees very well with Bolivar's description, though in general a little smaller.

**GRYLLODES HEMELYTRUS** Saussure

*Grylloides hemelytrus* SAUSSURE, Mem. Soc. Geneve, vol. 25, 1877, p. 208.

One female, Mount Salak, April 4 (2,200 feet altitude); one female, Buitenzorg, without date. The second specimen is moldy and has ovipositor broken off; it is referred here with some doubt. It is somewhat larger than the one from Mount Salak and is macropterous, the tegmina covering fully three-fourths of the abdomen. The one from Mount Salak is brachypterous with tegmina 6 mm. in length, somewhat longer than those of the type.

<sup>17</sup> Syn. Cat. Orth., vol. 2, 1906, p. 23.

## PARALANDREVUS COULONIANUS Saussure

*Landrevus coulonianus* SAUSSURE, Mem. Soc. Geneve, vol. 25, 1877, p. 273, pl. 14 fig. xxv-1.

One male, Mount Salak, April 4, at an altitude of 2,200 feet; one female, Tjibodas, Mount Gede, April 20.

The tegmina of the female are barely if any over 2 mm. in length and noticeably broader than long; the posterior femora measure 12 mm. in each sex, and the ovipositor is curved upward and is about as long as the posterior femora, or a little longer. The vertex of the head in the male (head of the female missing) is not marked by four lines as noted in the original description.

## Subfamily OECANTHINAE

## PENTACENTRUS UNIFENESTRATUS, new species

This species is distinguishable from the other members of the genus by having the anterior tibiae with a tympanum on the inner side only.

*Description, male (female unknown).*—Head yellowish brown with the vertex marked by four longitudinal blackish stripes and the eyes with the lower half darker; maxillary palpi brown, the apical segment distally much expanded, the whole segment about twice as long as the apical width; antennae missing except the basal portion, the longer one about half as long as the body, pale and with some black bands beyond the base. Pronotum moderately transverse, the anterior margin truncate, the posterior margin obtusely angulate, the disk with two longitudinal blackish stripes; lateral lobes about as high as broad, the lower margins rather narrowly rounded and the lateral margins subequally ascending. Abdomen elongate; subgenital plate broad as long, forming a large apically broadly rounded scoop; supra-anal plate much narrower and shorter than the subgenital plate, about as long as broad and apically truncate for about half its width; cerci long and slender, swollen at the base and beyond tapering very gradually to a point.

Legs rather stout, brownish in color with darker maculation, the blackish markings tending to form obscure broad bands; anterior and intermediate metatarsi longer than the other two tarsal segments together, the posterior ones three or more times as long; anterior tibiae noticeably expanded in the basal half and with a very large open foramen on the inner surface, occupying the greater part of the width and one-half the length of the tibia, the outer surface somewhat swollen but without a trace of any tympanum; posterior tibiae bear three spines on each dorsal margin in addition to four or five very small serrations and two long apical calcaria on the inner side, the upper one slightly the shorter, and three shorter ones on the outer side, the middle one about twice as long as the others, which are subequal with each other in length; posterior femora swollen for most their length, tapering to their tips, and unarmed.

Organs of flight fully developed; tegmina surpassing the abdomen but falling somewhat short of the tip of the posterior femora, yellowish brown in general color, dorsally marked by a couple of triangular blackish spots and some short transverse bars of the same color and with the costal area suffused with fuscous; wings caudate, colored about as the tegmina, the folded prolongations showing dark spots, the costal area dark.

*Measurements*.—Length, body to end of tegmina, 9 mm.; pronotum, 1 mm.; tegmen, 7 mm.; wings, beyond the tegmina, 4 mm.; anterior femora, 1.75 mm.; posterior femora, 5 mm.; cercus, 3.75 mm.; width, pronotum, 1.75 mm.; posterior femora at widest point, 1.5 mm.

Type, female, Mount Salak, Java, May 15 (3,000 feet altitude); paratype same locality and date but without altitude label.

Type in National Museum; paratype returned to Doctor Bryant.

*Type*.—Cat. No. 29141, U.S.N.M.

#### XABEA DECORA Walker

*Xabea decora* WALKER, Cat. Derm. Salt. Brit. Mus., vol. 1, 1869, p. 109.

One very small nymph from Mount Salak.

The unarmed posterior tibiae and the shape of the pronotum of this remarkable cricket are seemingly as apparent in the nymph as in the adult. The extremely long and slender posterior metatarsus, being about three times as long as the combined length of the other two tarsal segments, is a noticeable feature of this small nymph.

#### Subfamily TRIGONIDIINAE

##### PARATRIGONIDIUM JAVANICUS, new species

*Description, female (male unknown)*.—Antennae yellowish, basally darker, the second segment black; front of head fuscous, the eyes lighter and the occiput and rest of the head yellow. Pronotum yellow with the anterior margin narrowly bordered with black. Tegmina unicolorously black. Legs uniformly yellow. Abdomen black except the cerci, the subgenital plate and part of the preceding ventral segment, which are yellow; ovipositor rather slender, curved strongly upward and yellowish basally, somewhat darker apically.

*Measurements*.—Length, body exclusive of ovipositor, 5 mm.; pronotum, 9 mm.; tegmina, 3 mm.; posterior femora, 5 mm.; ovipositor, 2 mm.

Type, female, Pelaboean Ratoe, Java, without date.

Type in National Museum.

*Type*.—Cat. No. 27331, U.S.N.M.

##### PARATRIGONIDIUM COLORATUM, new species

*Description, female (male unknown)*.—Antennae blackish with the first two segments yellowish, the apical portion broken off. Head, legs and abdomen colored as described under the above species; the

pronotum uniformly black both on the disk and lateral lobes; tegmina black with the anal margins rather broadly margined with yellow.

*Measurements*.—Length, exclusive of ovipositor, 5.5 mm.; pronotum, 1 mm.; tegmina, 3.5 mm.; posterior femora, 5 mm.; ovipositor, 2 mm.

Type, female, Pelaboean Ratoe, Java, without date.

Type in National Museum.

*Type*.—Cat. No. 27332, U.S.N.M.

It is probable that one or both of the above described forms are but color phases of other species.

#### CYRTOXIPHA LATERALIS Walker

*Eneoptera lateralis* WALKER, Cat. Derm. Salt. Brit. Mus., vol. 5 suppl., 1871, p. 11

One male, Pelaboean Ratoe.

This specimen agrees very well with Walker's description. The infuscation of the pronotal disk is gathered rather roughly into an apical, an intermediate and a posterior transverse band. Walker describes this species from Bombay, but in Kirby's catalogue the locality is listed as Ceylon.

#### CYRTOXIPHA RITSEMAE Saussure

*Cyrtoxiphus ritsemae* SAUSSURE, Mem. Soc. Geneve, vol. 25, 1878, p. 478, pl. 17, fig. xlix-3; pl. 19, fig. lxxix-3.

One male, Pelaboean Ratoe.

This individual agrees almost perfectly with the description of *ritsemae*.

#### CYRTOXIPHA RITSEMAE, var. OBLITERATA, new variety

The brachypterous insect recorded and figured by Brunner from Burma<sup>18</sup> as questionably belonging to *ritsemae* really represents a distinct variety. Specimens of this form are in the National Museum from Japan, and it is one of the forms treated as *ritsemae* by Shiraki in his Monograph Gryllidae of Formosa in 1911. The most evident difference between this variety and typical *ritsemae* is the somewhat broader form and the very obscure maculation of the tegmina of the male in the Asiatic insect. Deeming this form worthy of a varietal name it is here christened as *Cyrtoxipha ritsemae*, var. *obliterata*, new variety. This name is based on two males and three females from Japan.

Type, male; allotype, female; and paratypes *a*, *b*, and *c*.

Type material in National Museum.

*Type*.—Cat. No. 29142, U.S.N.M.

<sup>18</sup> Ann. Mus. Genova, vol. 33, 1893, p. 211, pl. 6, fig. 77.

## Subfamily ENEOPTERINAE

## ITARA MICROCEPHALUS DeHaan

*Gryllus (Phalangopsis) microcephalus* DEHAAN, Temminck, Verhandel. Orth., 1842, p. 236.

One male, Mount Salak; one female, Pelaboean Ratoe; one female, Buitenzorg in June.

These specimens are a little smaller than the measurements given in the original description of the species but they otherwise agree with the description and figures of Saussure.

## MADASUMMA HOFMANNI Saussure

*Calypotrypus hofmanni* SAUSSURE, Mem. Soc. Geneve, vol. 25, 1878, p. 569, pl. 18, fig. lxii-2; 2a.

One male, Mount Salak (3,000 feet altitude).

Kirby<sup>19</sup> gives the habitat of this cricket as Borneo but the original description gives it as from Java.

## EUSCYRTUS HEMELYTRUS DeHaan

*Gryllus (Eneoptera) hemelytrus* DEHAAN, Temminck, Verhandel., Orth., 1842, p. 231, pl. 20, fig. 2.

One female; one female nymph from Buitenzorg in March.

These are decidedly smaller than specimens in the National Museum from Japan, but they are clearly much shrunken, evidently from having been originally preserved in spirits. The appendages are mostly broken off these two specimens.

## APHONOMORPHUS CINEREUS DeHaan

*Gryllus (Eneoptera) cinereus* DEHAAN, Temminck, Verhandel., Orth., 1842, p. 232, pl. 20, fig. 5.

One male nymph from Mount Salak on May 5.

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<sup>19</sup> Syn. Cat. Orth., vol. 2, 1906, p. 95.