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REPORT ON THE ORTHOPTEROID INSECTS

Collected by the Fiji–New Zealand Expedition from the University of Iowa

by

A. N. CAUDELL

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IN NATURAL HISTORY

HENRY FREDERICK WICKHAM, Editor

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Bureau of Entomology, United States
Department of Agriculture

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REPORT ON THE ORTHOPTEROID INSECTS

Collected by the Fiji-New Zealand Expedition from the University of Iowa

The expedition sent out by the University of Iowa in 1922 spent less than three months in Fiji and New Zealand; four weeks, June 5 to July 3, in Fiji, and five weeks, July 7 to August 15, in New Zealand. Dr. Dayton Stoner has published an interesting account of the fauna of the regions visited, especially as relating to the birds and insects observed. [1]

The insects brought back were mostly taken by Dr. Stoner or his wife and the Orthopteroids form the subject of the present report. By mutual agreement the first set of specimens is deposited in the U. S. National Museum, and the duplicates are divided between the two institutions.

As so few species herein discussed occur both in Fiji and New Zealand, *Anisolabis annulipes* and *Ornebius novaræ* only being common to the two regions, it has been thought best to treat the two faunas separately.

FIJI

Order DERMAPTERA

Forficulidæ

The earwigs are tentatively divided by the present writer into five subfamilies, which may be distinguished with the aid of the following key:

1. Apical dorsal segment of the abdomen prominently produced between the forceps as a broad flat process, fused with the pygidium.....Apachyinæ
   Apical dorsal segment of the abdomen not as above.....2
2. Second tarsal segment laterally expanded, heart-shaped.....Forficulinæ
   Second tarsal segment not laterally expanded.....3
3. Second tarsal segment conspicuously prolonged beneath the third. ..... Chelisochinæ
   Second tarsal segment not or but slightly prolonged beneath the third.....4

[1] Univ. of Iowa Studies in Nat. Hist., vol. x, p. 121-141, 254-282, pl. xix-xxii, xliv-xlvii (1924).

4. Sixth segment of the antenna, at least when viewed from the narrowest side, two or more times as long as broad, usually very distinctly so. ..... Labiinæ
Sixth segment of the antenna less than twice as long as broad. ..... Labidurinæ

The last two groups are often less easily distinguished than the others, but even here little difficulty should be experienced. The characters used above are those of adults but as a rule they will also apply to immature specimens.

Chelisochinæ

Chelisoches morio Fabricius

Forficula morio Fabricius, Syst. Ent., p. 270 (1775).

Twelve males, ten females and four nymphs as follows: Namuamua, June 20, six males, three females; Walu Bay, June 13, one female; Tamavua, June 29, three males; Suva, June, two males, four females and one nymph; Namosi, June 21, one male, two females and two nymphs; Viria, June 15, one nymph.

One of the males from Tamavua is noticeably smaller than the others.

Labidurinæ

Anisolabis annulipes Lucas

Forficula annulipes Lucas, Bull. Soc. Ent. France, (2), vol. v, p. lxxxiv (1874).

A single specimen, a female from Nukulau Island, June 20.

Anisolabis tegminata new species

A small black earwig very like *A. annulipes* except for the attingent quadrate tegmina, which will readily separate it from its Old World relatives.

Description. Male and female. Head with the postocular space longer than an eye; antenna hairy, broken, but with at least eighteen segments; the basal segment is longer and much thicker apically than the succeeding ones and, together with the small second segment, yellowish brown, generally somewhat lighter in color than the succeeding ones, which are brown or blackish, with two or three in the apical portion of the antennæ, numbers 12 to 15, yellowish; the third segment is about three-fourths as long as the basal one, the fourth and fifth are about as long, apically thick, the sixth a little more elongate and the rest still more so, all slightly conical. Pronotal disk quadrate, or slightly longer than broad, with a very narrow mesial longitudinal sulcus; the color is glistening black and the surface bears a few scattered hairs; the disk is anteriorly truncate and posteriorly broadly rounded, the lateral margins straight and very slightly recurved. Mesonotum almost covered by the tegmina, a triangular scutellum or a narrow central

strip only exposed. Metanotum with the extreme base only covered by the tegmina, the posterior margin strongly concave. The tegmina are about as long as the pronotum basally, usually somewhat concealed beneath the pronotal disk; normally the apex is truncate and the inner margin almost straight and nearly or quite touching that of the opposite tegmen, but in one specimen, a female, the tegmina are separated by a distance about one-fourth as great as the width of the pronotal disk; the lateral field is vertical and joins the dorsal field with a decided angle. Legs short, of the usual structure in the Labidurinæ; color yellowish with the femora broadly banded with blackish. Abdomen broadest mesially, gently tapering as usual in the genus; pygidium and forceps as in *annulipes*.

Measurements. Length, total from front of head to tip of forceps, male, 10 mm., female, 13 mm.; forceps, male, 2 mm., female, 2.5 mm.

Described from one male, the type, and three females, allotype and paratypes A and B, all labeled Tamavua, five miles from Suva, Viti Levu, Fiji, June 29, 1922; D. Stoner, collector.

Type, allotype and paratype A in the National Museum; paratype B returned to the University of Iowa.

Catalogue No. 40356 U. S. N. M.

This may be the insect mentioned by Dr. Burr[2] as a winged form of *Anisolabis annulipes*. The darker basal segments of the antennæ and the broader bands of the femora seem distinctive, though the basal segment of the antennæ of *annulipes* recorded from New Zealand on a later page of the present paper is fully as dark as in the present form. It may eventually result that *annulipes* and perhaps other species as well, occur both as apterous and brachypterous forms, in which case the species here described will probably be relegated to the synonymy or reduced to varietal rank.

Labiinæ

Labia sp.

One female, Tamavua, June 24; one nymph, Nukulau Island, June 20.

This is a larger form than *L. minor*, the adult measuring a little more than 5 mm. in length, exclusive of the forceps, which are missing.

Chætospania stoneri new species

A small, noticeably depressed, inconspicuously pilose, blackish species with light yellowish legs and with the abdomen dorsally reddish brown.

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[2] Journ. Royal Micro. Soc., p. 544 (1915).

Description. Male. Head black with the clypeus and labrum lighter, the entire ventral surface brown. Head with the postocular space much longer than the eye, which is small, about as long as the basal segment of the antenna; antennæ unicolorously brown with at least a dozen segments, the basal one of which is enlarged in the apical three-fourths of its length to a thickness distinctly greater than that of the succeeding segments and in length equalling that of the small second segment plus that of the elongate third segment; fourth segment thickened in the apical half, as long as the third segment and a little shorter than the fifth; sixth and seventh segments clavate and twice as long as broad, the rest similar, but those towards the apex of the antenna almost spindle shaped. Pronotum with the disk slightly longer than broad, anteriorly narrowed to a brief neck; posteriorly the disk is very broadly rounded and the lateral margins are straight; the surface of the disk is dark in color and smooth with a few scattered hairs, especially marginal; there is a very faint indication of an extremely narrow median longitudinal sulcus; meso- and metanotum entirely covered by the tegmina, which are blackish and well developed, each being subequal in width to the pronotal disk and about three times as long as broad, meeting above in the basal portion and with the caudal margins diagonally concave; wings fully developed, the projecting portion of the same texture as the tegmina and about three-fourths as long. Legs short, unicolorously light yellowish brown, the femora smooth and swollen; tibiæ thickened mesially, subequal in length to the femora; tarsi with the basal segment as long as the third and furnished laterally with conspicuous bristles; second segment minute. Abdomen long, parallel sided, noticeably depressed, reddish brown in color with the sides darker; caudal dorsal and ventral segments large, a little broader than long, posteriorly subtruncate; pygidium declivate, the depressed apical portion horizontal and broadened, terminating in two acute points each with a lateral shoulder, and a minute dorsal tubercle, this last so small as to be scarcely noticeable under low magnification; forceps almost one half as long as abdomen, far separated basally, apically moderately incurved and each armed with a single large caudally inclined tooth situated a little basad of the middle.

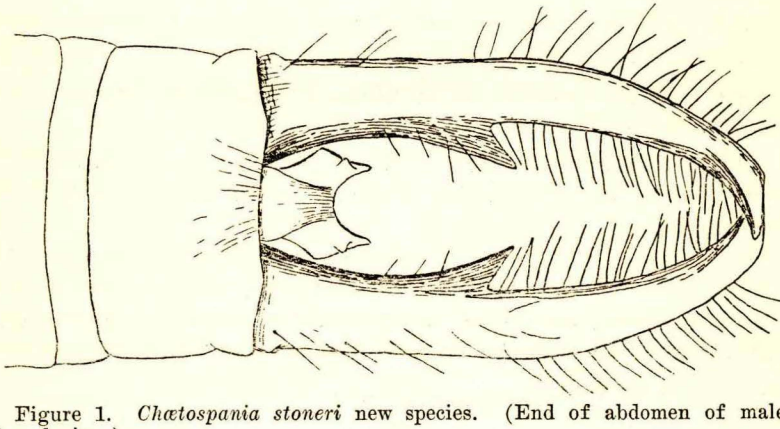

Figure 1. *Chætospania stoneri* new species. (End of abdomen of male, dorsal view.)

Female. About as the male except as follows: caudal dorsal segment of the abdomen quadrate and with a median tubercle on the hind margin, and the caudal ventral segment is slightly elongate and posteriorly broadly rounded; pygidium thick and declivate, subquadrate, apically truncate with acute but brief diagonally directed lateral angles; forceps ventrally flattened, slightly broadened mesially and armed in the basal half with three or four stout irregular teeth on the upper carina of the flat inner face, and on the lower carina with a single subapical triangular tooth. The paratypic female has no trace of a mesial sulcus on the pronotal disk.

Measurements. Length, total from front of head to tip of forceps, male and female, 6.5 mm.; forceps, male and female, 1.5 mm.

Described from two males, one adult and one immature, type and paratype B, and three females, two adult and one immature, allotype and paratypes A and C; all taken by Dayton Stoner at Suva, Fiji Islands, June 15, 1922, except paratype A from Colii Suva, June 30.

Type material in the U. S. National Museum except paratypes A and C which are returned to the University of Iowa.

Catalogue No. 40357 U. S. N. M.

Order ORTHOPTERA

Blattidæ

Panchlorinæ

Pycnoscelus surinamensis Linnæus

Blatta surinamensis Linnæus, Syst. Nat., (Edit. x), vol. 1, p. 424 (1758).

Nine adult females and twelve nymphs from Makuluva on June 4 and 17 and two nymphs from Tamavua on June 29.

Some time ago an adult male of this common cosmopolitan roach, the first of this sex seen by the writer and hitherto unrepresented in the collection of the National Museum, was received for determination through the Federal Horticultural Board. It is from Buitenzorg, Java.

There is noticeable variation in the length and coloration of the tegmina of this species; they are usually light brown to brown and fall somewhat short of the tip of the abdomen, but the color may vary to dark brown or quite black and occasionally specimens are noted in which the tegmina extend decidedly beyond the apex of the abdomen. One of the specimens above recorded from Fiji is abnormal in having the terminal ventral segment of the abdomen distinctly notched.

Blattinæ

Periplaneta americana Linnæus

Blatta americana Linnæus, Syst. Nat., (Edit. x), vol. 1, p. 424 (1758).

Three adult males and three nymphs from Makuluva and one adult female and one nymph from Viria, all taken in June.

Periplaneta australasiæ Fabricius

Blatta australasiæ Fabricius, Syst. Ent., p. 271 (1775).

Seven specimens from Makuluva and one from Suva, all adults.

Cutilia nitida Brunner

Platyzosteria nitida Brunner, Nouv. Syst. Blatt., p. 214 (1865).

Seven male and ten female adults and five nymphs, Makuluva, June; one male, Suva, June 30; one male, Viria, June 15; one male, Tamavua, June 29.

These specimens are relatively slightly broader than others from Northern Queensland and may possibly represent the *C. feejeeana* of Bruner, though the shining piceous color indicates otherwise.

Cutilia soror Brunner

Polyzosteria soror Brunner, Nouv. Syst. Blatt., p. 219 (1865).

One nymph 15 mm. in length from Makuluva in June is referred here, though this species has never before been recorded from Fiji.

Pseudomopinæ

Temnopteryx sakalava Saussure

Temnopteryx sakalava Saussure, Soc. Ent., vol. vi, p. 25 (1891).

One male, Viria, June 15; one male without date or definite locality, but probably from Viria; one female, Namosi, June 21; two nymphs, Suva, June 16 and June without more definite date; two nymphs, Makuluva, June.

These specimens agree with Tahitian and Hawaiian material determined as this species by Mr. Hebard. From Madagascar to Tahiti and Hawaii is an unexpectedly wide distribution for this small brachypterous roach; it seems rather probable that comparative studies of the concealed genital structures of the males might reveal specific differences in specimens from some of these localities.

The generic name *Temnopteryx* is here used for roaches in

which the abbreviated tegmina are not lateral but meet dorsally; in the allied genus *Loboptera* the tegmina are scale-like and lateral, characters which taken alone are of no generic importance whatever.

Supella supellectilium Serville

Blatta supellectilium Serville, Hist. Nat. Ins., Orth., p. 114 (1839).

One male, Suva in June.

Genus? Species?

One male, Suva, June 16.

This specimen is not in sufficiently good condition to warrant description. It seems allied to the species of the genus *Christoblatta* in having the wings with a very large triangular apical area, in this respect merging into the Ectobiinæ; the ulnar vein of the wing sends two branches to the apical margin and several short apically directed branches towards, and almost to, the dividing vein. Ulnar sectors of tegmina longitudinal. Femora strongly armed beneath, the anterior ones with three spines on the basal half, suddenly succeeded by many very fine short hair-like spinelets. The entire length is 14 mm., and the tegmina, which extend beyond the tip of the abdomen, measure 11 mm. in length.

The collection also contains one small undeterminable nymph belonging to the Pseudomopinæ. It is from Suva, June 24.

Phasmidæ

Phyllinæ

Chitoniscus feedjeanus Westwood

Phyllium feedjeanus Westwood, Trans. Ent. Soc. Lond., (3rd ser.), Proc., p. 17 (1864).

One female without local label, June.

Phasminæ

Hermarchus novæ-britanniæ Wood-Mason

Hermarchus novæ-britanniæ Wood-Mason, Ann. Nat. Hist., (4) vol. xx, p. 75 (1877).

One male, Suva in June, H. E. Ward, collector.

Austroclonistria? species

One male nymph from Walu Bay, June 6.

Acrididæ

Tetriginæ

Paratettix feejeanus Bruner

Paratettix pullus Bolivar, Ann. Soc. Ent. Belg., vol. xxxi, p. 272, 281 (1877).

Two females, one from Namuamua on June 20 and the other from Makuluva in June.

These are macropterous specimens with caudate pronotum, the wings extending about 2.5 mm. beyond the pronotum. The measurements are as follows: Length, pronotum, total from front of head to tip of wings, (broken in one specimen) 8 mm.; posterior femora, 5 to 5.5 mm.

Paratettix feejeanus Bruner

Paratettix feejeanus Bruner, Proc. Hawaii Ent. Soc., vol. iii, p. 157 (1916).

Twenty-nine adults and nine nymphs, mostly from Suva in June, but one adult each from Navua, Viria and Tamavua and a few from Walu Bay; all taken in June, from the 13th to the 29th.

Cyrtacanthacrinae

Austracris guttulosa var. *illepida* Walker

Cyrtacanthacris illepida Walker, Cat. Derm. Salt. Brit. Mus., vol. iv, p. 615 (1870).

Five males, three adults and two nymphs, and one adult female; one of the adult pairs from Ellington, June 29, one adult male and two nymphs from Suva, June, and one adult male from Walu Bay, June 13.

The *Cyrtacanthacris feejeeanus* of Bruner[3] is a synonym of *illepida*.

Oedipodinæ

Locusta migratoria var. *australis* Saussure

Pachytylus australis Saussure, Prodr. Oedipod., p. 120 (1884).

Ten adults and eight immature specimens from the following localities: Navua, two males, two females, two nymphs, June 26; Suva, one male, four nymphs, June 24; Tamavua, two males, June 29; Nausori, one nymph, June 14; Viria, two males and one nymph, June 15.

[3] Proc. Hawaii Ent. Soc., vol. iii, p. 158 (1916).

The name *australis* is retained as of subspecific value as this form is smaller than the Asiatic *danica* with which it has been synonymized. The above Fijian specimens have the vertex with a longitudinal carina, another character at variance with the characters of *danica* as given by Uvarov is his recent paper in Bull. Ent. Research, vol. xii, p. 13 (1921).

Acridinæ [4]

Aiolopus tamulus Fabricius

Gryllus tamulus Fabricius, Ent. Syst., Suppl., p. 195 (1798).

Three males, one female, June 17 and 20.

Tettigoniidæ

Gryllacrinæ

Gryllacris ferruginea Brunner

Gryllacris ferruginea Brunner, Verh. zool.-bot. Gesell. Wien, vol. xxxviii, p. 325, 361 (1888).

One male, Suva, June 25; on guava.

Gryllacris? species

One very small male nymph from Makuluva in June, too small and shriveled for more exact determination.

Copiphorinæ

Euconocephalus extensor Walker

Conocephalus extensor Walker, Catal. Derm. Salt. Brit. Mus., vol. ii, p. 329 (1869).

Conocephalus australis Bolivar, Viage Pacif. p. 90 (1884).

One green female, one green and one brown male adult from Makuluva Island; one green male from Walu Bay, all in June, and six male and eight female nymphs of various sizes from Suva, Walu Bay, Navua and Makuluva, most of them from Suva.

Conocephalinæ

Conocephalus affine Redtenbacher

Xiphidium affine Redtenbacher, Monogr. Conocephal., p. 183, 199 (1891).

Twenty-nine male and nineteen female adults and fifteen male

[4] The subfamily name Truxalinæ would be available for the cone-headed grasshoppers except for the fact that one of the subfamilies of a family must be based on the same genus as that upon which the family itself is based. Thus the above name must be used.

and six female nymphs from various localities, most from Suva but some from Penang, Navua, Makuluva, Nausori and Viria.

This is a very variable species as regards size, the series from Suva ranging from 12 to 23 mm. in tegminal length and from 10.5 to 16 mm. in length of posterior femora. The color also varies somewhat, due probably to change in drying.

Listroscelinæ

Phisis rapax Redtenbacher

Teuthras rapax Redtenbacher, Monogr. Conocephal., p. 541 (1891).

Two adult females and one small male nymph from Makuluva in June.

Previous recorders are followed in considering this Fijian species to be *rapax*. According to the keys of Redtenbacher these specimens run out to *pectinatus* Guerin but the longer ovipositor of that species precludes them from being considered as belonging to that form. The exact number of leg spines may perhaps vary somewhat.

Phaneropterinæ

Furnia incerta Brunner

Anaulacomera incerta Brunner, Monogr. Phaneropt., p. 296, pl. vi, fig. 85d-e (1878).

One male and one female from Walu Bay on June 13.

Furnia insularis Stal

Anaulacomera insularia Stal, Bihang Svenska Akad., vol. iv (v), p. 57 (1876).

One male and two females from Suva in June.

There is no essential difference in the size of the two species above determined, the female of *incerta* being but slightly smaller than that of *insularis*, the length of pronotum and ovipositor of the former being 4.25 and 6 mm. while in the latter these measurements are 4.75 and 7 mm.; thus the size and the relative length of the ovipositor are not adequate differentiating characters for these species; the cercus of the male, however, will at once distinguish them, that of *incerta* being apically acuminate while in *insularis* it is apically flattened, not at all pointed, the tip folded over and inward to a position at right angles to the main stem, the broad apical margin with a very small tooth, as shown in the accompany-

ing figure. This is the first male of *insularis* ever reported, so far as known to the writer.

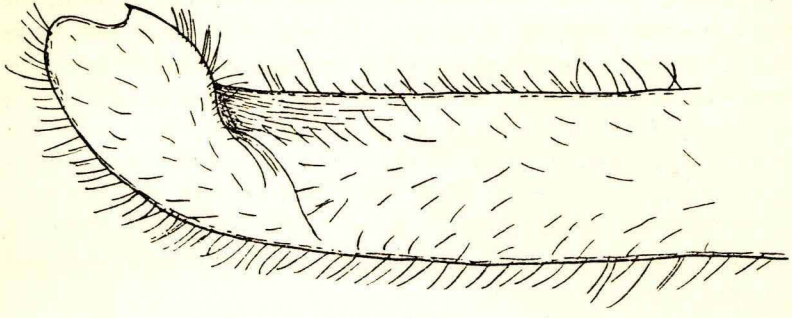

Figure 2. Furnia insularis Stal. (Right cercus of male, dorsal view)

Gryllidæ

Gryllinæ

Gryllus oceanicus Le Guillon

Gryllus oceanicus Le Guillon, Rev. zool., p. 293 (1841).

Six male and seven female adults and sixteen male and two female nymphs, all from Makuluva in June except the following: two adult males from Viria, June 15; two male nymphs from Walu Bay, June 13; one male nymph from Nausori, June 14; two male nymphs from Namuamua, June 17 and 20, and one very small male from Suva without date.

Former recorders of Fijian Gryllidæ are followed in the above determination. It is the opinion of the present writer that there are far too many species of *Gryllus* now recognized.

Prof. Stoner [5] records having captured a small hermit crab in the act of devouring one of these crickets.

There is also in the collection a minute male nymph from Colii Suva, June 30, which probably belongs to the subfamily Gryllinæ, though it is too shrunken for determination.

Nemobius luzonicus Bolivar

Nemobius luzonicus Bolivar, Ann. Soc. Ent. Espan., vol. xviii, p. 418 (1889).

Two adult females and one female nymph, the adult from Suva, June and June 29, and the nymph from Viria, June 15.

These specimens fit the description of this species fairly well

[5] Univ. Iowa Studies in Nat. Hist., vol. x, p. 136 (1924).

except that both the adults are brachypterous; they exhibit decided variation in the length of the tegmina, which in one of them measure but 2.5 mm., or twice that of the pronotum, while in the other one they measure 3.25 mm.; both of them have the wings entirely absent. The specimen with the longer tegmina has these organs apically rounded and covering most of the abdomen, giving the insect the appearance of a macropterous specimen with the under wings removed, while the other one has the tegmina apically truncate and covering but little more than one-half the abdomen, as typical of brachypterous forms; but otherwise, both in structure and color, these specimens appear entirely similar and are very surely conspecific.

Eneopterinæ

Aphonomorphus vitiensis Saussure

Aphonus vitiensis Saussure, Melang. Orth., Fasc. vi, p. 801, pl. 19 (lxxi), fig. 2 (1878).

Two adult males, Nausori, June 14 and Makuluva in June, and a very small nymph from Navua on June 26 which probably belongs here.

These crickets are apparently extensively parasitized by a black bodied Chalcid fly as both these adult specimens have what appears to be the abdomen of such a parasite protruding from the tip of its abdomen, the remainder of the parasite being absent.

There are also present in the collection a couple of small male nymphs in poor condition from Nukulau Island, taken on June 20, which probably belong to the subfamily Eneopterinæ.

Mogisoplistinæ

Ornebius novaræ Saussure

Liphoplus novaræ Saussure, Melang. Orth., Fasc. v, p. 483 (1877).

One adult male and a female nymph, both badly broken, from Makuluva in June. The anterior tibiæ of the immature specimen do not show any foramen on either face and the male lacks all legs except the posterior ones. The body is not at all pubescent, such covering being rubbed off. The terminal ventral segment of the abdomen of the adult is black, in decided contrast to the general coloration.

This is one of the few species common to Fiji and New Zealand,

as represented by material forming the subject of the present report.

Trigonidiinæ

Hydropedeticus vitiensis Miall and Gilson

Hydropedeticus vitiensis Miall and Gilson, Trans. Ent. Soc. Lond., p. 281-285, pl. vii-viii (1902).

One male, Nausori, June 14; one female and one male nymph, Namosi, June 21.

All these specimens are in very poor condition, the female lacking the head and pronotum as well as all the legs except left posterior femur and part of the corresponding tibia, the male with only the anterior legs and the right intermediate one present, and the nymph is covered with mold and has all the legs on the left side missing. But there can be scarcely any doubt of the determination. There must be very decided variation in the partial transparency of the tegmina, however, as in the present case that character is present in the female instead of the male, which is just the opposite of the original description; otherwise the characters of these specimens, so far as they are present and in passable condition, agree very well with those described and figured by the authors of the species.

Metioche insularis Saussure

Homeoxiphus insularis Saussure, Melang. Orth., Fasc. vi, p. 610 (1878).

Two macropterous males, Suva in June, and four brachypterous males, three from Suva in June and one from Navua on June 26. Several nymphs, five males and five females from Suva, Colii Suva, Navua, Nausori, Namosi and Makuluva probably also belong here.

There is some variation of coloration in this series; thus the abdomen varies from piceous above to reddish brown. The lateral field of the tegmen is transparent and the statement in the original description to the effect that this area is black may be due to showing through of the black abdomen beneath, or in some specimens it may indeed be black.

The brachypterous specimens referred to above are just like *Trigonidium flavipes* except for the generic character of having the anterior tibiæ with a foramen on each face; this is apparently a very unstable character and it is to be anticipated that it will eventually prove to be of no value, not even specific; thus it is

doubtful if *Metioche* is different from *Trigonidium,* and *Metioche insularis* will very likely be found to be synonymous with *Trigonidium flavipes.*[6]

Trigonidium flavipes Saussure

Trigonidium flavipes Saussure, Melang. Orth., Fasc. vi, p. 605, pl. 16 (xlvii).

Eighteen males and twenty-eight females, all in June and most of them from Suva, but a few from Walu Bay, Navua, Nukulau Island, Nausori, Makuluva and Viria.

The above series varies much in color of head and pronotum, one extreme being with those portions wholly piceous and the other with the corresponding surfaces light colored.

For notes on probable synonymy in this genus and *Metioche* see above under *Metioche insularis.*

Cyrtoxipha maritima Saussure

Cyrtoxiphus maritimus Saussure, Melang. Orth., Fasc. vi, p. 618, pl. 17 (xlix), fig. 3 and pl. 19 (lxxix), fig. 3 (1878).

One male, Nukulau, June 20, and one female, Walu Bay, June 13.

Cyrtoxipha fulva Saussure

Cyrtoxiphus fulvus Saussure, Melang. Orth., Fasc. vi, p. 621, pl. 17 (xlix), fig. 5 (1878).

One pair from Walu Bay, June 13.

NEW ZEALAND

Order DERMAPTERA

Forficulidæ

Labidurinæ

Anisolabis annulipes Lucas

Forficula annulipes Lucas, Bull. Soc. Ent. France, (2), vol. v, p. lxxiv (1874).

Two males and one female; one male from Mt. Eden, Auckland, July 12, and the others from Ohinemura Village at Rotorua in the vicinity of Hot Springs, on July 31.

[6] Since the above notes were written it has come to the writer's notice that synonymy has been published and the species referred as type to the genus *Litogryllus* of Hebard (Bishop Mus. Bull. No. 31, p. 86, 87, 1926.)

Anisolabis littorea White

Forficula littorea White, Zool. "Erebus and Terror," Ins., p. 24, pl. vi, fig. 4, 5 (1846).

Seventeen male and eleven female adults and twelve male and two female nymphs, mostly from Auckland, July 23, on Gannet Island in Cowes Bay. Other localities and dates represented are Rotorua, July 27; Pokino Island, Auckland, July 19 and 27; Mt. Eden, Auckland, July 12; Helensville, July.

Prof. Stoner states[7] that this large earwig was common in all stages on Gannet Island in debris under the nests of *Sula serrator*, the New Zealand gannet, where they perform a valuable service in the removal of waste and decaying material. At Helensville, adults and immature specimens were taken from decayed logs.

This species is very near *maritima*, in fact probably no more than a variety of that cosmopolitan insect. I have specimens from New Zealand determined as *maritima* by Burr and by Rehn.

Order ORTHOPTERA

Blattidæ

Pseudomopinæ

Allacta latipennis Brunner

Phyllodromia latipennis Brunner, Nouv. Syst. Blatt., p. 109 (1865).

Two adult females, one from Wellington on August 4 and one from Rotorua in July, and one nymph from Wellington on August 3.

Allacta maori Rehn (new combination)

Ectobius maori Rehn, Proc. U. S. Nat. Mus., vol. xxvii, p. 541 (1904).

One female, Kauri Gully, Auckland, July 15.

This species was established on the male sex only as belonging to the genus *Ectobius*. It is here referred to the genus *Allacta*. This female agrees very well with the description of the male except for sexual differences. The supra-anal plate is triangular with the median line longitudinally keeled to the briefly notched apex. Tegmina slightly exceeding the tip of the abdomen, the wings somewhat shorter. Measurements as follows: Length, body from front of head to tip of abdomen, 8 mm.; pronotum, 2.5 mm.;

[7] Univ. Iowa Studies in Nat. Hist., vol. x, p. 279 (1924).

tegmina, 6 mm.; width, pronotum, posteriorly, 3.5 mm.; tegmina at middle, 2.5 mm.

Blattinæ

Platyzosteria novæ-seelandiæ Brunner

Polyzosteria novae-seelandiæ Brunner, Nouv. Syst. Blatt., p. 218 (1865).

Six male and one female adults and eight nymphs, the female, two adult males and five nymphs from decayed logs at Helensville on July 17, three adult males and three nymphs from Rotorua on July 27, and one adult male at Mt. Rangitoto, Auckland, on July 13.

There is some variation in both size and coloration noticeable in this series; some of the adult males from Rotorua have an obscure tinge of reddish on the thorax, or tegmina, especially noticeable on the tegmina of one small specimen.

Under the name *Blatta forticeps,* probably in error for *fortipes,* which is a synonym of *novæ-seelandiæ,* Prof. Stoner refers to this as a large black brachypterous cockroach with an offensive odor, and says it is locally known as the "Maori bug," and is common in wooded regions under the bark of dead and decaying trees.

Temnelytra undulivitta Walker

Periplaneta undulivitta Walker, Catal. Blatt. Brit. Mus., p. 144 (1868).

Five adults, two males and three females, and one nymph from the Domain, Auckland, on July 14 and 15.

There is scarcely a doubt of the accuracy of the above determination, but these specimens show the description of Shelford[8] to be inaccurate in some details. Thus there are distinct under wings present in both sexes, rather obscured by being concolorous with the underlying portions of the thorax and connate with it along the inner margins, but distinct nevertheless. These under wings are rather slender in shape, equalling the metanotum in length, about four times as long as broad and without distinct venation.

The presence of vestigial wings in *Temnelytra* makes this genus very close to the genus *Scabina* of Tepper. In *Temnelytra,* however, the posterior metatarsus is spinose beneath, while in *Scabina* it is unarmed, a character sufficient, perhaps, to distinguish these two genera.

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[8] Trans. Ent. Soc. Lond., p. 304, pl. ix, fig. 36 (1909).

In color and structure the present species is almost exactly like *Cutilia sedilloti* Bolivar, the tegmina being lateral and the under wings entirely absent being the only characters separating the two forms.

Cutilia sedilloti Bolivar

Polyzosteria sedilloti Bolivar, Ann. Soc. Ent. Fr., (6), vol. ii, p. 459 (1883).

Two males and six nymphs; one male and four nymphs from Wellington, August 3 and 4; one male from Kauri Gully, Auckland, on July 18; and one nymph each from Mt. Rangitoto, Auckland, July 13, and Rotorua, July 27. The nymphs are associated with the adults by localities only as they are inseparable from those of *Temnelytra undulivitta*. Most of these immature specimens are striped as in the adult, but three of them lack the thoracic stripes. In one of the adults the black pronotal stripe continues distinct and uninterrupted for the entire length of the tegmina along the inner margin, but in the other specimen this line is barely indicated.

In his article on this expedition, as noted at the beginning of the present report, Prof. Stoner mentions a long-winged roach under the name of *Blatta conjuncta* as occurring in beech forests in Gollins Valley and elsewhere. No specimens of this species, now referred to the genus *Allacta*, were found in the material submitted for determination, nor any other specimens bearing such locality label.

Mantidæ

Eremiaphilinæ

Orthodera novæ-seelandiæ Colenso

Mantis novae-seelandiæ Colenso, Trans. N. Z. Inst., vol. xiv, p. 277 (1882).

One ootheca from Kauri Gully, Auckland, on July 18, is evidently of this species.

Phasmidæ

Pachymorphinæ

Argosarchus spiniger White

Acanthoderus spiniger White, Zool. Voy. "Erebus and Terror," Ins., p. 24 (1846).

One specimen of this spiny walking stick was in the collection, an adult male taken at Memahu on July 29.

Argosarchus minimus Colenso

Bacillus minimus Colenso, Trans. N. Z. Inst., vol. xvii, p. 153 (1885).

One small nymph from Kauri Gully, Auckland, July 15, is referred here, as the short antennæ with their nine segments each seem to refer it to this species; but it is certainly not congeneric with *spiniger* White.

Acrididæ

Cyrtacanthacrinæ

Phaulacridium marginale Walker

Caloptenus marginalis Walker, Cat. Derm. Salt. Brit. Mus., vol. iv, p. 710 (1870).

Two males and four females, all brachypterous adults, from Rotorua, in July. The color of these specimens differs in almost every individual, ranging from almost unicolorously brownish yellow to brown mottled with pinkish. The tegmina are very slightly longer than the pronotum and well separated basally but often so directed as to meet above distally.

Oedipodinæ

Locusta migratoria var. *danica* Linnæus

Gryllus Locusta danicus Linnæus, Syst. Nat., (edit. xii), vol. i, p. 702 (1767).

Two adult females from Rotorua in July.

Tettigoniidæ

Stenopelmatinæ

Hemideina thoracica White

Deinacrida thoracica White, Zool. Voy. "Erebus and Terror," Ins. p. 25, pl. 5, fig. 2 (1846).

Six males and three females, all at Wellington on August 3.

Under the synonymic name *megacephala*, Prof. Stoner gives measurements of a pair of this remarkable insect much larger than any in the above lot.

Hemideina attenuata Walker

Hemideina attenuata Walker, Cat. Derm. Salt. Brit. Mus., vol. i, p. 164 (1869).

One male and three females, the male and two of the females at Auckland in July and the other female at Rotorua, also in July.

Dr. Stoner mentions still another species of these large Stenopelmatinæ, *Deinacrida rugosa*, also a New Zealand form; he does not state that specimens were taken on this expedition, and none was found among the material sent for report.

Rhaphidophorinæ

Talitropsis sedilloti Bolivar

Talitropsis sedilloti Bolivar, Ann. Soc. Ent. Fr., (6), vol. ii, p. 462 (1883).

One adult female from Kauri Gully, Auckland, on July 18. The specific name of this insect is sometimes wrongly spelled "sedilotti."

Pachyrammq fascifer? Walker

Macropathus fascifer Walker, Cat. Derm. Salt. Brit. Mus., vol. i, p. 207 (1869).

In the collection were two immature specimens, one medium sized female and one very small male, which are doubtfully referred to the above species. They are from Lake Eho, Rotorua, July 28.

Conocephalinæ

Conocephalus bilineatum Erichson

Xiphidium bilineatum Erichson, Arch. f. Nat., vol. viii, p. 249 (1842).

A female nymph from Rotorua, July 20, is referred here. It has a *Mermis* protruding from the tip of the abdomen.

Phaneropterinæ

Cædicia simplex Walker

Phaneroptera simplex Walker, Cat. Derm. Salt. Brit. Mus., vol. ii, p. 352 (1869).

Six male and two female adults and eight nymphs of various sizes; the adult males, one adult female and four nymphs are from Rotorua, in July; one adult female from Wellington on August 3; two nymphs from Helensville, July 17; and two nymphs from the Domain, Auckland, July 14.

The adult female from Wellington is green, all the rest faded as if preserved in spirits.

Gryllidæ

Gryllinæ

Gryllus commodus Walker

Gryllus commodus Walker, Cat. Derm. Salt. Brit. Mus., vol. i, p. 45 (1869).

Four male and three female adults and three nymphs, all from Rotorua in July. These specimens are determined as the above named species only by locality and previously published records, as they seem to agree with material from various places passing under various names. This is not the place to establish new synonymy, though much of this very surely occurs in this genus. When the genus is revised it is more than probable that *commodus* and various other names will fall under *oceanicus*.

Nemobius species

One female from the Domain, Auckland, on July 14, does not agree with any described species from the Australian regions known to the writer. It seem nearer to *truncatus* and *femoratus* Saussure than to any other species. It may be a brachypterous form of some long-winged species, or it may represent an undescribed member of the genus.

Trigonidiinæ

Trigonidium maoricum Walker

Scleropterus maoricus Walker, Catal. Derm. Salt. Brit. Mus., vol. i, p. 74 (1869).

Two males, one from the Domain, Auckland, July 14, and one from Helensville on July 17. A small female nymph from Kauri Gully, Auckland, July 18, very likely belongs to this species.

The genus *Lissotrachelus* of Brunner, Rev. Syst. Orth., p. 204 (1893), belongs to the subfamily Trigonidiinæ and not to the Mogisoplistinæ. It is allied to the genus *Trigonidium*.

Mogisoplistinæ

Ornebius novaræ Saussure

Liphoplus novaræ Saussure, Melang. Orth., Fasc. v, p. 483 (1877).

One male, Rotorua, July 20, similar in every respect to the male recorded on a previous page of the present report from Fiji, except that all the pubesence is not rubbed off the body.

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