On Gryllidae from the Malay Peninsula

By Dr. L. CHOPARD

(with 13 figures)

I am indebted to Mr. C. Boden Kloss for the opportunity of examining an extensive collection of *Gryllidae* from the Malay Peninsula and the islands of Singapore and Penang.

There is little to say about the Gryllid fauna of this area as it is purely a Malaysian one with an intrusion of Indian and Indo-Chinese elements; though we may also notice the presence of a few other Asiatic species, one or two Australian and a few of still wider distribution. It is hardly probable that the species described here are peculiar to the Malay Peninsula and they will very likely be found in the Malaysian Islands later on.

The distribution of the material dealt with is summarised in the table.

[Dr. Chopard has recently sent me reports on two collections of *Gryllidae* submitted to him for determination: the larger was almost entirely made by Mr. H. M. Pendlebury of the Selangor Museum, Federated Malay States; the smaller was brought together by Messrs. R. Hanitsch, J. C. Moulton, V. Knight and F. N. Chasen of the Raffles Museum, Straits Settlements. All this material is now in the former institution and I have thought it desirable to combine the two reports upon it. In the Raffles Museum series were two new and several other species not included in the larger collection.

Many of the species come from the mountains of the Malay Peninsula: the following localities are all between 3,000 and 4,800 feet:—

Peninsular Siam.

Khao Luang in Nakon Sri Tamarat.

Perak.

Maxwell's Hill. Gunong Kledang.

Pahang.

Fraser's Hill. Lubok Tamang. Cameron Highlands. Gunong Tahan. Selangor.

Bukit Kutu.

The remainder are from sub-montane or low level localities. C. Boden Kloss.]

Sub-fam. Gryllotalpinae

Gryllotalpa africana Beauv.

Kuala Lumpur, 4 &, 10 &; 3 & at light;—Kuala Tahan, 1 & at light;—Kampong Gajah, 1 &; Singapore, 1 &.

Gryllotalpa formosana Shiraki

Kuala Lumpur, 1 &, 1 2.

This species has been separated recently from africana by Shiraki (Insecta Matsumurana, IV, 1930, p. 182); it differs from it chiefly by the very small ocelli. This character is evidently quite conspicuous, but I find it is presented by examples of Gryllotalpa of the africana group from various sources. So, I am far from persuaded that it is a good specific character, and I am willing to believe that it only means individual variations, probably subject to local environment. A careful examination of numerous individuals, captured in well-defined localities will alone make it possible to fix on the real value of this form.

Gryllotalpa australis Erichs.

Perak: Maxwell's Hill 1 9; Selangor: Bukit Kutu 1 9; Pahang: Semangko Pass 2 9.

Much less widely spread than the African mole-cricket, this species was only known from Australia and the Malay Archipelago.

The species from Sarawak which I described under the name fusca (Sarawak Mus. Journ., IV, 1930, p. 4) is a synonym of australis as I have ascertained by comparison with specimens from Australia of the latter species kindly sent to me by Mr. N. Tindale.

Gryllotalpa hirsuta Burm.

Perak: Gunong Kledang I &; Selangor: Ginting Simpah I &; Pahang: Raub 2 larvae.

Gryllotalpa hirsuta longipennis Haan (macropterous form).

Selangor: Bukit Kutu 1 9; Singapore 2 9.

DISTRIBUTION.

	Ubiquists	India	Oriental Asia	Malay Archipelago	Australia and Oceania	Endemics
Tridactylus variegatus (Latr.)	+					
" opacus Walk		+				•••
,, savignyi Guér	. +					•••
" thoracicus Guér		+,		+		
Gryllotalpa africana Beauv	+					
" formosana Shiraki			+			
" australis Er				+	+	•••
,, hirsuta Burm				+		•••
Brachytrypes portentosus (Licht.)		+	+	+		
,, var. orientalis (Burm.)		+				•••
Gymnogryllus pulvillatus (Sauss.)				+		•••
,, elegans (Guér.)				+		•••
,, brachyxiphus sp. n			l			+
Macrogryllus ephippium (Sauss.)	·			+		•••
Liogryllus bimaculatus (De Geer)	+	•••				•••
Gryllus testaceus Walk		+	+	+		
,, mitratus Burm		+	+	+		
" oceanicus Le Guillou				+	+	•••
,, confirmatus Walk	+					
,, aspersus Walk		+	+	+		•••
,, blennus (Sauss.)		+		+		•••
Gryllodes sigillatus Walk	+	•••				
Loxoblemmus detectus (Serv.)		+				
" equestris Sauss		+		+		
" jacobsoni Chop		•••		+		•••
intermedius Chop			•••	+		•••
Scapsipedus mandibularis Sauss		+	+	+		
Duolandrevus coulonianus (Sauss.)				4.		•••
,, rufus sp. n	•••					+
Endolandrevus tomentosus sp. n Scottia rufovariegata sp. n				•••		+
Stottia rujovariegata sp. n			•••			+
Iteronemobius concolor (Walk.)		+		+		
,, vagus (Walk.)		+				
,, taprobanensis (Walk.)	•••	+	+	+		
rentacentrus emiteus estatus (Walk.)		+	+	+		
Pentacentrus unifenestratus Caud			•••	+		
brunneus Chop		•••		+		•••
" punctulatus Chop				+		

DISTRIBUTION—Continued

		Ubiquists	India	Oriental Asia	Malay Archipelago	Australia and Oceania	Endemics
			İ				
Lissotrachelus ater Br	••	••		•••	+	•••	•••
Acanthoplistus birmanus Sauss.	•••	•••	+	+	+	•••	
,, femoratus sp. n.	•••						+
Scleropterus coriaceus Haan				+	+		•••
Pteroplistus platyxiphus Haan		•••	•••		+		
Trigonidium cicindeloides Ramb.		+			•••		•••
,, humbertianum (Sau	ss.)		+	•••	+		
Metioche bicolor (Stal)				•••	+		
,, karnyi Chop		•••			+		
,, vittaticollis (Stal)				+	+		
Metiochodes flavescens Chop.			***	ļ <u></u>	+	i	
Cycloptiloides orientalis Chop.				+	•••		
Homoeoxipha lycoides (Walk.)			+		+	+	•••
Anaxipha venustula (Sauss.)		···			+		
,, longipennis (Serv.)	• • •		•••	•••	+		
,, rufonotata Chop.		•••	+		+		•••
v ,, pendleburyi sp. n.		•••	•••		•••		+
Itara microcephala Haan	• • • •	•••	•••	•••	+		
,, minor Chop	• • • •	•••	•••	+	т		
VGryllitara pendleburyi sp. n.	•••	•••	•••	+			+
Calyptotrypus helvolus (Serv.)	•••		•••	•••	•••		•
Agamichia con Chan	•••				+		•••
fumaitana Cham		•••		• • • •	+	•••	•••
Madasumma willemsei Chop.	• • • •	•••	• • • •	•••	+	•••	•••
h Ch	• • •	•••	•••	•••	+		•••
V himanalata an m	•••		•••		+		•••
viaritrons en n	•••	•••	•••		•••		+
,, parcevenosa sp. n.		•••	•••		•••	•••	+
Mnesibulus bicolor (Haan)		•••		+	+		
,, nigrolineatus sp. n.				•••			+
Podoscirtus angustifrons Chop.					+		•••
Aphonomorphus punctatus (Haan)					+		
Euscyrtus concinnus (Haan)			+	+	+		
,, hemelytrus (Haan)			+	+	+		
,, crassiceps Sauss.			•••		+		
Patiscus dorsalis (Stal)				+			

Sub-fam. Tridactylinae

Tridactylus variegatus (Latr.).

Kuala Lumpur: Setapak Pond and ditches near hot water springs; numerous examples of both sexes.

Tridactylus opacus Walk.

Kuala Lumpur: Setapak Pond, 1 3.

Whereas the preceding species is very common in South Europe, North Africa and a part of South Asia, this one is only known from South India and Ceylon.

Tridactylus thoracicus Guér.

Kuala Lumpur, numerous examples of both sexes; Peninsulat Siam: Patalung, I &.

Tridactylus savignyi Guér.

Kuala Lumpur, 1 9; Pahang: Kuala Tembeling, 19.

Brachytrypes portentosus (Licht.).

Perak: Taiping I &, Gunong Kledang I &, I Q. Selangor, Kuala Lumpur 2 & at light, I Q, Ulu Gombak 2 Q, one taken a light. Pahang: Kuala Tahan I &, Raub I Q. Johore: Mt. Ophic I &, Tanjong I &, Singapore I Q at light. Penang I Q. Peninsular Siam: Khao Ram I Q. Sumatra: Medan I &.

var. orientalis (Burm.)

Kuala Lumpur 1 &. This variety only differs from the type by its very small size.

Gymnogryllus pulvillatus Sauss.

Selangor: Ulu Gombak 3 & . Johore: Gunong Pulai 1 & . Sarawak: Baram River 1 \, 2 .

Gymnogryllus elegans Guér.

Perak: Gunong Kledang I &, I Q; Maxwell's Hill I &. Selangor: Bukit Kutu 4 &, 9 Q; Semangko Pass 2 &, 3 ?. Pahang: Fraser's Hill I & larva; Lubok Tamang I & at light, 2 Q.

These two species are typical representatives of the Malaysian fauna.

Gymnogryllus brachyxiphus, sp. n.

Types: 1 & , 1 \ \varphi\. Selangor: Ulu Gombak, 4th Nov., 1910.

Same locality, 2 \(\varphi\);—Kuala Lumpur, 1 \(\delta\);—Negri Sembilan:
Bukit Tangga, 1 \(\varphi\).

Size and general appearance of *G. pulvillatus* Sauss.; colour testaceous rufous, very feebly pubescent. Head big, rounded; skull rufous, presenting a minute sparse puncturation; face yellow; ocelli large, yellow, nearly in a straight line. Pronotum transverse, very faintly widening in front, with anterior margin concave, posterior one a little sinuated; disk rufous, lateral lobes yellowish. Legs testaceous, pubescent. Anterior tibiae presenting a rather large oval tympanum at their external face; the internal one shows a much smaller tympanum followed by a smooth furrow, crossing the tibia obliquely to the apex; apical spurs very strong. Posterior femora thick, pubescent; tibiae armed with five spines on each margin; supero-internal spur much longer than the median one.

- ¿ . Elytra rufous, shining; anal field thickened with faintly visible veins; speculum small, wide, divided into three parts by a furcate vein; diagonal vein short undulated; chords also short, the second one much curved; three oblique veins of which two are rather long, diverging and emerging nearly from the same point; the third one short, in the angle of the anal vein; apical field very large, presenting ten veins and a very close and regular reticulation; lateral field with light free veins close together, and three branches of the mediastinal vein, the first from the base, long, parallel to the last free vein, the other three shorter and wide apart. Wings caudate.
- Q. Elytra feebly thickened at base; dorsal field presenting three free veins, the first of which is furcate, five branches of the first discoidal and three from the secoidal vein; all those veins are regular, rather oblique, the reticulation between them rather close, regular and formed by veinlets which are a little curved instead of being straight as usual. Ovipositor short, but more slender than that of a *Brachytrypes*; its apical valves are small, lanceolate, rather acute. Length of body § 28 mm., Q 26 mm.; post fem. § 19 mm., Q 18 mm.; elytra § 22 mm., Q 20 mm.; ovipositor 4 mm.

This species is very close to *pulvillatus* Sauss., and *angustus* Sauss.; the elytron presents in the male a relatively very large apical field with a tiny reticulation; in the female, the ovipositor is scarcely half as long as in the said species and the veinlets of the elytron are somewhat curved.

Macrogryllus ephippium (Sauss.).

Mus. 6, 1931

Perak: Batang Padang, Jor camp, 1 &. Penang 1 9.

I suppose that this is the species described under this name by Saussure, from Java, but I have not been able to get material for comparison as the species seems very scarce in collections and only known from Java until now.

Liogryllus bimaculatus (De Geer).

Kuala Lumpur 2 & , 2 Q . Kelantan: Tebing Tinggi I & , I Q! Singapore 2 Q .

It seems that this widely spread species is much less common in the Malay region than in Africa and in Western Asia or even in India.

Gryllus testaceus Walk.

Perak: Jor Camp 2 0; Taiping I 0. Pahang: Kuala Tahan I 8, Lubok Tamang I 0. Kuala Lumpur 28, 3 0; Carey Id. I 0. Negri Sembilan: Seremban I 0. Johore: Kota Tinggi I 3, 3 0. Singapore 38, I 0. Peninsular Siam: Trang 28.

Gryllus mitratus Burm.

Perak: Batang Padang 3 o at light. Pahang: Lubok Tamang 1 o. Selangor: Carey Id. 1 o; Kuala Lumpur 1 o, 2 o at light! Johore: Gunong Pulai 1 o. Singapore 2 o.

Gryllus oceanicus Le Guillou.

Perak: Sungai Tengah, 2 9. Selangor: Carey Id., 19.

This species is very common in all the Oceanian Islands but becomes very scarce in the Malaysian Islands and Peninsula.

Gryllus aspersus Walk. (= $Gryllodes\ berthellus\ Sauss.$).

Pahang: Kuala Tahan, I Q . Selangor: Ampang, IQ.

Gryllus confirmatus Walk. (= Gryllus consobrinus Sauss.).

Kuala Lumpur, 1 9 at light. Pahang: Kuala Tahan, 1 9 Singapore 1 9.

The specimen from Kuala Tahan shows the colour pattern of minusculus Walk. which I consider as a variety of confirmatus Walk.

Gryllus blennus (Sauss.).

Kuala Lumpur, 2 &, 2 & at light;—Carey Id., 1 %.

Gryllodes sigillatus Walk.

Kuala Lumpur, 1 &, 3 9.

Scapsipedus mandibularis Sauss.

Pahang: Kuala Tahan, 13;—Gunong Tahan, 19. Selangor: Kuala Lumpur, 23, 29;—Carey Id., 13, 49. Singapore 13

Loxoblemmus detectus (Serv.).

Kuala Lumpur, 3 &, 2 Q at light; Pahang: Kuala Tahan I Q. Johore: Kota Tinggi I Q. Peninsular Siam: Nakon Sri Tamarat I Q.

Loxoblemmus equestris Sauss.

Selangor: Bukit Cherakah, I &; Carey Id. 5 &, 6 Q. Peninsular Siam: Trang, I Q. Perak: Jor camp, 2 &, 5 Q at light. Batang Padang 3 Q. Pahang: Kuala Tahan 3 Q, Lubok Tamang I Q. Pahang, 3,500 ft. 3 Q.

Loxoblemmus jacobsoni Chop.

Selangor, Kuala Lumpur, I & ;—Bukit Kutu, I micropterous & ;—The Gap, I &, I micropterous & ;—Carey Island, 3 &. Lower Perak: Sungai Pengah, 2 &, I &.

Loxoblemmus intermedius Chop.

Kuala Lumpur, 2 & ; Gombak Valley 1 & ;—Pahang: Sungai Tahan, 1 & .

Duolandrevus coulonianus (Sauss.).

Pahang: Lubok Tamang 3,500 feet 1 & ;—Cameron's Highlands 4,800 feet 1 & .

Duolandrevus rufus sp. n. (figs. 1, 2).

Type: I &, Perak: Batang Padang, Jor camp, 1,800 feet (H. M. Pendlebury, 30th May, 1923);—Allotype: I &. Peninsular Siam: Nakon Sri Tamarat, Khao Luang 2,000 feet (H. M. Pendlebury, 18th March, 1922).

Same locality as the female allotype, 2 $\,$ Q . Pahang, Lubok Tamang, 3,500 ft., 1 $\,$ $\,$ d.

& (fig. 1). Size and general habitus of E. coulonianus Sauss.; rufous brown, shining, feebly pubescent. Head with frontal rostrum as wide as first antennal joint, parallel-margined: ocelli yellow, the anterior one small; face brown, shining, with no widening part beneath the eyes. Maxillary palpi with fourth joint a little shorter than the third, fifth long, slightly enlarged and obliquely truncated at apex.

Pronotum transverse with anterior margin feebly concave; disk rather convex, covered with a silky whitish pubescence; lateral lobes ascending backwards. Abdomen dark brown, feebly pubescent on the sides; sub-genital plate navicular, subacute at apex.

Legs rather short, rufous; anterior tibiae perforated on either side. Posterior tibiae bearing 4-5 denticulations and four spines on each margin; supero-internal spur equalling the median one. Posterior metatarsi with three internal, four external denticles.

Elytra extending to the seventh abdominal tergite, rounded at apex; speculum large with internal margin rounded, internal angle acute, presenting a few reticulations only along the posterior margin; apical area very short, presenting two veins; diagonal vein straight, chords regularly curved; five oblique veins united at their base on a fold beneath the anal vein, and three small ones emerging from the angle of the anal vein; lateral field presenting five plain, parallel, regular veins.

op (fig. 2). Similar to the male; denticulations of the posterior tibiae a little weaker. Elytra scarcely exceeding the metanotum at their external margin; their internal margin is very oblique, straight, coming in contact with the other elytron on the median line; veins of the dorsal field four in number, feebly indicated and even disappearing at base of the elytron which is opaque and somewhat thickened; lateral field high, with five parallel veins. Ovipositor a little shorter than the cerci, rather slender, with apical valves small, acute.

Length of body & 20 mm., Q 19 mm.; pronot. & 3, 5 mm., Q 3, 3 mm.; elytra & 10, 5 mm., Q 3 mm.; post. fem. & 14 mm., Q 12, 5 mm.; ovipositor 11, 5 mm.

By the length of its elytra and the well developed mirror, the male of this species is rather close to brachypterus Haan, which is smaller, with the sub-genital plate somewhat truncated at apex and mirror with posterior margin more precise. The female is also close to the same species but the posterior margin of the elytra is straight or even slightly concave whereas it is feebly convex in brachypterus; the veins are also much more visible than in that species.

Endolandrevus tomentosus sp. n. (fig. 3).

Type: 1 &; Selangor: Kuala Lumpur, 25th June, 1921, H. M. Pendlebury.

Medium size, rufous brown; head, body and elytra covered with a fine pubescence. Head a little wider than the pronotum rounded; frontal rostrum a little wider than the first joint of antennae, with parallel margins; face brownish, shining; base of the mandibles a little shagreened beneath the eyes. Antennae and palpi testaceous. Eyes rounded, feebly projecting; ocelli small, the anterior one in the middle of the rostrum.

Pronotum equally wide in front and backwards, nearly cylindrical; anterior margin feebly concave, posterior one straight; disk rounded, strongly pubescent; lateral lobes high, with inferior margin slightly ascending backwards. Abdomen brown, pubescent; sub-genital plate narrow, slightly notched at apex.

Legs rather short, very pubescent. Anterior tibiae perforated at their internal face only with a very small round drum. Posterior femora striated at their external face, darkened at apex with a yellowish ring before the darkened part. Posterior tibiae short, thick, blackish, armed with four spines on each margin and presenting at base four or five denticles; external spurs very short, the

median one the longer; infero-internal spur very short, the two other ones relatively short, sub-equal in length; metatarsi rather long, armed with two apical spurs and 4 - 5 rather strong denticles on each margin; third joint long.

Elytra (fig. 3) short, very pubescent, with apical margin rounded; neuration rather confused, composed of three nearly straight chords, a diagonal vein which is furcate but no true mirror; anal field very short, three oblique veins and three other veins emerging from the diagonal and parallel to the oblique ones; lateral field high with five plain, parallel veins.

Length of body 13 mm.; pronot. 3, 2 mm.; post.; fem. 10, 5 mm.; post. tib. 6, 5 mm.; elytra 5 mm.

This species is very remarkable by abundant pubescence as well as by the peculiar elytral venation; it is rather close to *E. pubescens* Chop., from Sarawak, but is smaller with different disposition of the veins of the elytra.

Sub-fam. Nemobiinae

Scottia rufovariegata sp. n. (fig. 4).

Type: 1 &, Pahang: Cameron Highlands (4,800 ft.) at light; H. M. Pendlebury, 13th October, 1923.

Small; brown varied with rufous spots. Head a little wider than the pronotum, rufous brown with a somewhat lighter median line; forehead sloping, bearing about fifteen long bristles, and forming at apex a short, rounded rostrum, as wide as the first antennal joint; face short, rufous. Palpi brown, fourth joint of the maxillary palpi much shorter than the third, fifth a little depressed, moderately enlarged at apex. Antennae brown, lighter at base. Eyes big, rounded, laterally projecting; ocelli very small, the anterior one scarcely visible.

Pronotum a little wider than long, rather strongly narrowing backwards; anterior and, posterior margins straight, both lined and provided with long bristles; disk convex, rather light rufous, with a much furrowed median line; lateral lobes low, dark brown, with inferior margin nearly straight, anterior angle right, posterior one rounded. Metanotum brown, strangled between the pronotum and the abdomen which is rather strongly widened with convex sides. Abdominal tergites brown, mottled with light rufous; tenth tergite short, truncated. Inferior part of the abdomen dark brown; subgenital plate navicular, sub-acute at apex.

Legs a little lighter than the body. Anterior and medium femora feebly darkened towards the apex; anterior tibiae non-perforated; tarsi nearly as long as the tibiae. Posterior temora thick, presenting a feebly visible brown band at their external face; tibiae rather strong, armed with three spines on each margin, the external ones slender, the internal ones somewhat thickened, chiefly

the two inferior ones which are neatly swollen (fig. 4); six apical spurs, of which the inferior ones very small, chiefly the internal, the two large, internal ones rather long, the superior exceeding feebly the median and scarcely equalling the middle of the metatarsus; medio-external spur rather long, superior one similar to the spines. Metatarsi long, compressed with short apical spurs, superior margins presenting a few small denticles lost in the abundant pubescence.

Allotype 9 : Pahang : Sungai Tembeling, on mudbank; H. M. Pendlebury, 19th November, 1921.

A little larger than the male, similar to it; abdomen a little more uniform in colour, tibial spines not swollen. Ovipositor short, straight, with apical valves very large, occupying half the total length, their margins smooth.

Length of body δ 5 mm., \circ 6 mm.; post. fem. δ 4, 2 mm., \circ 4, 5 mm.; ovipositor 3 mm.

This small species is remarkable by the tibial spines which are rather strongly swollen in the male sex.

Pteronemobius concolor (Walk.).

Kuala Lumpur, at light, 3 &, 3 Q; Perak: Batang Padang, Jor Camp, 1 &, 1 Q;--Peninsular Siam: Trang, at light, 1 Q.

Pteronemobius vagus (Walk.).

Kuala Lumpur, 4 &, 4 &; Pahang: Kuala Tahan, 1 &.

Pteronemobius taprobanensis (Walk.).

Kuala Lumpur, 2 micropterous &; Gombak Valley, I &. Negri Sembilan, Kuala Pilah, at light, I &. Perak: Taiping, at light, I &. Peninsular Siam: Patalung, at light, I &.

Pteronemobius fascipes (Walk.).

Peninsular Siam: Patalung, at light, 1 9.

Sub-fam. Pentacentrinae

Pentacentrus unifenestratus Caud.

Selangor: Bukit Kutu, 3,500 ft., at light, 3 &, I &;—Gombak Valley, I &. Pahang: Lubok Tamang, 3,500 ft., at light 3 &.

Pentacentrus punctulatus Chop.

Pahang: Lubok Tamang, 3,500 ft., 3 &, 3 & at light.

Pentacentrus brunneus Chop.

Rim, Malacca, 1 2.

Pentacentrus annulicornis Chop.

Perak: Jor, Batang Padang, 1 9.

This species was known only from the Mentawi Islands, West Sumatra (cf. Bull. Raffles Mus., II, 1929, p. 104).

Lissotrachelus ater Br.

Peninsular Siam: Nakon Sri Tamarat, 1 9 larva, at light. Perak: Jor camp, 1 macropterous 9.

Sub fam. Sceleropterinae

Acanthoplistus femoratus sp. n. (Fig. 4A).

Type: 1 9, The Gap, Selangor—Pahang Boundary (2,500 ft.) 24th August 1907.

Size rather large for the genus; blackish with a large yellow spot on the posterior femora; nearly glabrous. Head black, as wide as pronotum; occiput very slightly convex, forehead almost flat, forming a rather long rostrum, with slightly converging sides, truncated at apex which is about the same width as the first antennal joint. Face very short, rufous. Maxillary palpi brownish, with large, dilated, subsecuriform 5th joint. Antennae rather thick, brown with lighter first joint. Eyes rounded, very little projecting; lateral ocelli big, yellow, anterior one small, in the middle of the rostrum.

Pronotum nearly square, with anterior margin concave, posterior one faintly convex, both of them lined; sides feebly sinuated, almost parallel; disk black, flat, slightly embossed and very finely shagreened; lateral lobes black, their insertion being subangular in its posterior part only, inferior margin rather strongly ascending backwards. Abdomen rufous brown; 9th tergite presenting a weak median tubercle; 10th tergite very short and wide truncated at apex; anal valve wide, rounded. Ovipositor rather short, a little curved upwards, its apical valves lanceolate, the superior ones narrow, the inferior ones very faintly crenulated beneath.

Anterior and medium legs rather long and stout, blackish-brown with a light rufous pubescence; anterior tibiae perforated with a rather large external oval tympanum; metatarsi thick and shorter than the third joint of the tarsi. Posterior femora very thick, short, blackish-brown with a large yellow spot situated little after the middle and occupying the superior part without extending down either to the internal or to the external inferior margins; knees brownish; tibiae rather short, blackish-brown, armed with three small rufous spines on each margin; apical spurs rufous, the external ones very short, the median being however a little longer than the other two; infero-internal spur very short, medium and

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superior ones not very long but very thick, sub-equal in length. Posterior metatarsi compressed, furrowed above, armed with two apical spurs and three denticles on each margin.

Elytra brownish, a little thickened, covering two-thirds only of the abdomen, with rounded extremity; dorsal field occupied by three veins and the discoidal one which is a little projecting, trifurcated; transverse veinlets irregular and few in number; lateral field presenting 6 plain, parallel, close veins. Wings shorter than the elytra.

Length of body 14.5 mm.: pronot. 3.5 mm.: post. fem. 8.5 mm.: post tib. 6 mm.: elytra 6.5 mm.: ovipositor 6 mm.

This interesting species is quite characterized by its coloration; it differs from the other species of the genus Acanthoplistus by its larger size, by the ill-defined angulated insertion of lateral lobes of pronotum; but the general aspect, the shape of the head and the legs are quite those habitual in the genus. The anterior tibiae present one tympanum only but this is probably connected with the micropterous condition of the type as is usual in most of the Gryllidae.

Acanthoplistus birmanus Sauss.

Peninsular Siam: Trang, 1 macropterous 9, at light.

Scleropterus coriaceus Haan.

Kuala Lumpur, I &, I &;—Carey Id., I Q.

Sub-fam. Pteroplistinae

Pteroplistus platyxiphus Haan.

Pahang: Kuala Tahan, 2 9 ;—Cameron's Highlands, 4,800 ft., 1 9 ;—Sungai Tahan, 1 9.

Sub-fam. Trigonidiinae

Trigonidium cicindeloides Ramb.

Kuala Lumpur, 1 9.

Trigonidium humbertianum (Sauss.).

Kuala Lumpur, 1 9 at light.

Metioche bicolor (Stal.).

Kuala Lumpur, 1 & at light.

Metioche vittaticollis (Stal.).

Kuala Lumpur, 2 &, 3 Q at light.

Metioche karnyi Chop.

Kuala Lumpur, I &, I Q at light. Perak, I Q ;—Batang Padang, I &. Peninsular Siam: Nakon Sri Tamarat, I Q at light.

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Metiochodes flavescens Chop.

Kuala Lumpur, I_{1} \hat{g} , I_{2} at light. Peninsular Siam: Nakon Sri Tamarat, I_{2} .

Cycloptiloides orientalis Chop.

Selangor: Kuala Lumpur.

Homoeoxipha lycoides (Walk.).

Kuala Lumpur, 2 & , 3 \(\) at light. Pahang: Lubok Tamang, 2 \(\);—Sungai Tamang, 1 \(\). Perak: Taiping, 1 \(\). Peninsular Siam: Patalung, 2 \(\) ;—Nakon Sri Tamarat 2 \(\). Perak: Jor camp, 1 micropterous \(\).

Anaxipha venustula (Sauss.).

Kuala Lumpur, 1 & at light. Kelantan: Tebing Tinggi 1 &.

Anaxipha longipennis (Serv.).

Kuala Lumpur, numerous & and \(\varphi \) at light. Peninsular Siam: Patalung, 1 \(\delta \).

Anaxipha rufonotata Chop.

Kuala Lumpur, I δ , 3 \circ . Perak: Batang Padang, Jor camp 1,800 feet, I \circ .

Anaxipha pendleburyi sp. n.

Types: Kuala Lumpur, 7th mile Cheras Road; H. M. Pendlebury, 10th November, 1924, 1 &; 15th March, 1924, 1 Q.

Kuala Lumpur, 2 &, 6 Q. Perak: Batang Padang, Jor camp, 1,800 ft., 1 &, 1 Q. Pahang: Lubok Tamang, 3,500 ft., 2 Q at light.

Small, rather dark smoky testaceous. Head presenting four longitudinal brown bands. Palpi testaceous with fifth joint triangular; antennae brown. Eyes rounded, laterally projecting.

Pronotum transverse, slightly narrowing in front; disk convex, brownish with median line, two lateral bands and posterior margin lighter; lateral lobes light with inferior margin slightly notched, anterior angle rounded. Abdomen brown. Palpi of the same colour as the body, the posterior femora presenting two longitudinal brown bands at their external face.

- a. Elytra smoky; speculum very large occupying more than half the length of the elytron; diagonal vein short and strongly sinuated; lateral field with three nearly parallel veins. Wings very much caudate, brownish.
- . Elytra smoky; dorsal field with four veins parallel between which there are rather projecting false veins; transverse veinlets very scarce; lateral field as in male. Wings caudate. Ovipositor short, wide, with apical valves occupying nearly half the total length, their apical part minutely denticulated.

Length of body 5 mm.; length with wings 9 mm.

This small species is very close to A. vicina Chop., of which it has the general shape and the elytral venation; it is different by a darker coloration and the presence of two very conspicuous dark bands on the posterior femora.

Sub-fam. Phalangopsinae

Parendacustes sp.

Pahang: Kuala Teku, 1 9.

This female of *Parendacustes* is in bad state and difficult to identify specifically; it seems however very close to *P. javanus* Chop.

Sub-fam. Itarinae

Itara microcephala Haan.

Selangor: Bukit Kutu, I &; I &;—Gombak Valley, 4 Q. Pahang: Kuala Tahan, I &, 2 Q, Sungai Tahan I & at light; Cameron Highlands, 2 Q at light;—Kuala Teku, 2 &, 2 Q. Negri Sembilan: Kuala Pilah, I Q. Selangor: Kuala Lumpur, I &. Perak: Jor camp, I &, 2 Q; Batang Padang I &. Peninsular Siam: Nakon Sri Tamarat, 2,000 ft., 3 Q at light. Singapore I &. Penang 4 Q.

One male example, from Bukit Kutu, is very large, nearly as large as examples of *I. major* Chop., but it seems different from the latter by its less transverse speculum. Anyhow, the three species microcephala Haan, minor Chop. and major Chop. are very close. Having seen a good number of examples of Itara, I find that the differences I gave for the two last species are not so definite as I had believed. As well in the elytral venation as in the shape of the genitalia, there are individual variations which weaken greatly those differences. It would perhaps be better to consider the two forms I described as mere sub-species of microcephala.

Itara minor Chop

Perak: Batang Padang 3 & . Pahang: Lubok Tamang 1 & . Kuala Tahan, 2 & ;—The Gap, 1 & . Kuala Teku, 2 & . Selangor: Ginting Bidai, 2,000 ft., 2 & .

Gen. Gryllitara gen. nov.

This genus has the general appearance of a true Gryllinae, with a round, relatively big head, a pronotum not at all narrowing in front. On the contrary, the elytral venation is very similar to that of Itara, but with a very short apical field. Anterior tibiae perforated at their external face and presenting only a split at their internal one; posterior tibiae denticulated and armed with four spines on each side, their apical spurs relatively short.

Genotype: Gryllitara pendleburyi sp. n. (fig. 5).

Gryllitara pendleburyi sp. n. (Figs. 5, 6).

Type: 1 & , Pahang, Fraser's Hill, 3,500 ft., H. M. Pendlebury, 12th August, 1923.

Medium size, coloration testaceous brown. Head rather big. round, with frontal rostrum short, much wider than the first antennal joint; face rufous, shining. Palpi rather long, rufous; fourth joint of the maxillary palpi a little shorter than the third, fifth long, very feebly dilated at apex. Antennae slender, rufous. Eyes rounded, feebly projecting; ocelli very small, nearly on a straight line.

Pronotum transverse with anterior margin a little concave, posterior margin convex, almost parallel sides, disk feebly convex, rufous; lateral lobes a little darker with rounded anterior angle. Abdomen rufous; genitalia (fig. 6) quite similar to those of an *Itara*, with a somewhat denticulated superior piece and rather short inferior pieces.

Legs rather long and slender. Anterior tibiae presenting at their external face a rather large, oval tympanum and only a long, narrow split at their internal face; second joint of the tarsi depressed; anterior and medium metatarsi a little longer than the third joint. Posterior femora darkened at apex with a yellowish ring before the darkened part; tibiae rather short, denticulate at base and armed with four spines on each margin; no denticles between the spines; external spurs short, the median a little longer than the other two; infero-internal spur very short, the other two rather long, the median a little longer than the superior one; metatarsi long, denticulated on both superior margins.

Elytra extending to the apex of abdomen, testaceous brown, a little pubescent; anal vein bent at a right angle; speculum large, a little wider than high, divided in the middle by an undulated vein; chords long, feebly curved, the first sending a veinlet to the mirror; five oblique veins emerging from a false vein parallel to the anal vein, two of them long and three short, the first undulated; apical field very short, finely reticulated; lateral field high, presenting three free veins, the first of which is furcate, and four branches of the mediastinal vein of which the first is also furcate. Wings concealed under the elytra.

Length of body 17 mm.; pronot. 3 mm.; post. fem. 12 mm.; post. tib. 8, 5 mm.; elytra 12 mm.

This interesting species somewhat recalls the *Gryllinae* by its general appearance but it is a true *Itarinae* by its characters. I take pleasure in dedicating it to Mr. H. M. Pendlebury who has discovered it.

Heterotrypus buqueti Serv.

Perak: Jor, Batang Padang, 1 9. Johore: Kota Tinggi, 1 3.

BULL. RAFFLES

Sub-fam. Encopterinae

Cardiodactylus novae-guineae Haan.

Pahang: Kuala Tahan, 19.

This species is a Papuan form which extends throughout the whole Malaysian sub-region.

Nisitra vittata Haan.

Sarawak, 19.

Sub-fam. Podoscirtinae

Calyptotrypus helvolus Serv.

Singapore 2 & . Pulau Ubin, Johore Straits 1 & . Pulau Jarak, Malacca Straits 4 & . Selangor: Kuala Lumpur 2 & at light, Bukit Kutu 1 & . Pahang: Sungai Tahan 1 & at light, Lubok Tamang 1 & .

This last example is darker than usual, its general coloration being testaceous and not green, but its other features agree completely with *C. helvolus* of which it must be considered as a mere colour variety.

Calyptotrypus parvispinosus Chop.

Perak: Batang Padang, Jor camp, 1,800 ft., 2 9 at light. Selangor: Bukit Kutu, 3,500 ft., 1 & , 1 9 at light.

Calyptotrypus furcifera Chop.

Selangor: Bukit Kutu, 3,500 ft., 3 &, 1 9 at light.

Madasumma willemsei Chop.

Pahang: Kuala Tahan, 13. Selangor: Bukit Kutu, 13 at light. Peninsular Siam: Nakon Sri Tamarat, Khao Ram, 19. Sarawak: Lio Matu, Baram River, 13.

This big species has been described from Sumatra but it is found all over the Malaysian sub-region.

Madasumma karnyi Chop.

Peninsular Siam: Nakon Sri Tamarat, 1 9.

Described from the Mentawi Islands, West Sumatra, (Bull. Raffles Mus., II, 1929, pp. 115, figs. 16, 20, 21) and presenting the same geographical distribution as the preceding one.

Madasumma nigrifrons sp. n. (Figs. 6A, 6B).

Type: 1 & , Kedah Peak, December 1915.

Medium size, shape rather long and narrow, coloration varied with brownish testaceous and blackish. Head as wide as pronotum in front; occiput and forehead spotted with small blackish, more or less confluent, maculae; a larger, blackish spot is situated behind each eye, extending on the eye itself and on the cheeks, forehead depressed, nearly concave, frontal rostrum hollowed in the shape of a gutter, with somewhat projecting, slightly converging forwards margins, the apex of the rostrum much narrower than the first antennal joint. Face wholly black, shining. Palpi dark brown, short, the 4th joint of the maxillary palpi shorter than the 3rd, the 5th securiform. Antennae brown with small yellowish rings, the 1st joint large, yellowish. Eyes feebly projecting, rounded; ocelli small, the anterior one in the middle of the rostrum, the lateral ones forming two small rounded elevations at base of it.

Pronotum transverse, a little narrowing in front, with anterior margin straight, posterior one slightly angular in the middle; disk nearly flat with anterior part a little elevated, brownish testaceous with blackish spots chiefly numerous on the sides and along the anterior margin; lateral lobes blackish with inferior margin slightly ascending backwards, their insertion rounded. Abdomen brownish; sub-genital plate narrowing after the middle and furrowed in its apical part; genitalia forming a large plain tectiform piece, with apex acutely erected and small hook-like inferior parts.

Legs rather short, mottled with blackish. Anterior tibiae rather strong, subquadrangular, rather strongly swollen at base; they present at their external face a nearly square tympanum; at their internal face, a narrow, rectangular opening which leads into a hollow in the bottom of which the tympanum lies. Anterior and median metatarsi much shorter than the third joint of the tarsi. Posterior femora short and rather narrow, presenting a large, blackish spot about the middle and the apex of the same colour; tibiae with three wide blackish bands, their margins being faintly denticulated and armed with four external, five internal short yellowish spines, the last external one being inserted close to the superior spur; external apical spurs very short; medium and superior internal ones rather long, yellowish. Metatarsi brownish, strongly pubescent, armed with two apical spines and one in the middle of the external margin, besides the apical spurs.

Elytra long and narrow, brownish, nearly transparent, with the humeral edge blackish, a little pubescent; the larger part of the anal field is also blackish as well as a spot between the chords and another one in the apical field; mirror longer than wide, narrowing backwards; chords feebly arcuated; diagonal vein straight; a supplementary vein is situated between the chords and the mirror, this vein being parallel to the antero-internal margin of the mirror; six oblique veins of which two long ones, slightly diverging backwards and a group of four short ones, curved and inserted in the angle of the axillary vein; apical field presenting six longitudinal

sectors, and reticulated in large, somewhat irregular areolae; lateral field blackish-brown with six free veins and ten branches of the mediational vein, these being a little sinuated, parallel. Wings distinctly longer than the elytra.

Length of body 17 mm.; length with wings 27 mm.; pronot. 3 mm.; post. fem. 9 mm.; elytra 19 mm.

This species presents a lengthened shape but less so than M. quadrata; it is also more depressed. It is quite remarkable by its coloration which is much varied with blackish and, above all by the supplementary vein shown by the elytral tympanum.

Madasumma bimaculata sp. n. (Figs. 7, 8).

Type: 1 & , Kuala Lumpur, at light, H. M. Pendlebury, 9th

A species of the marginipennis group; size rather small, coloration rufous with two conspicuous whitish spots on the elytra. Head flat, very pubescent; frontal rostrum as wide as the first antennal joint, with parallel margins; face rufous. Maxillary palpi with fourth joint shorter than third, fifth triangular. Antennae rufous. Eyes slightly projecting forwards; ocelli big, the anterior one in the middle of the rostrum.

Pronotum feebly widening in front; anterior margin straight, posterior one sinuated; disk feebly convex, rufous, very pubescent; lateral lobes concolorous, with inferior margin slightly ascending backwards. Abdomen rufous; sub-genital plate narrowing backwards with posterior margin a little truncated; genitalia formed of a large piece with four long erect teeth and finishing laterally by an horizontal tigella.

Legs rather short, rufous, very pubescent. Anterior tibiae rather strongly swollen at base, presenting a large, oval external tympanum, the internal one being partly covered by its anterior margin; anterior and medium metatarsi shorter than the third joint. Posterior femora rather strongly dilated; tibiae pubescent armed with five spines on each margin; metatarsi short and thick armed with three external, one internal denticles.

Elytra rufous brown, finely pubescent, presenting two large whitish spots, one near the anal knot, the other at the apex of the mirror; there is a smaller spot of the same colour at the external angle of the mirror; this one is rather large, longer than wide, divided above the middle by a straight vein; chords short, bowed, sending two branches to the mirror; five oblique veins of which two long ones emerging from the same point, three short ones of which two are strongly bowed and diverging, and a very small one in the angle of the anal vein; apical field presenting four longitudinal veins and a wide reticulation; lateral field showing in its upper part small, thickened, yellow veins, the mediastinal vein bearing five branches. Wings caudate.

This species is distinguishable from the others of the group by its small size, the disposition of the elytral veins and the genitalia; it is particularly close to a new species from Tonkin.

Madasumma parcevenosa sp. n.

Type: 1 9, Selangor: Bukit Kutu, 3,500 ft., at light; H. M. Pendlebury, 19th April, 1926.

General shape rather wide and short, coloration dark brown, above, rufous on the sides very pubescent. Head with a brown band on the skull extending to the apex of the rostrum; which is a little narrower than the first antennal joint, rounded at apex, very pubescent; face rufous. Palpi brown; fourth joint of the maxillary palpi shorter than the third, fifth rather large, subsecuriform. Antennae ringed with brown and yellowish. Eyes rounded; ocelli small, the anterior one in the middle of the rostrum.

Pronotum transverse with anterior margin straight, posterior one subangulate; disk convex, brown, the sides of the brown part somewhat converging in front; lateral lobes high, rufous with inferior margin slightly rounded. Abdomen brown; ovipositor relatively short and thick, with apical valves long, denticulated beneath, apex rounded.

Legs rather short, brown, very pubescent. Anterior tibiae a little swollen at base, perforated at their external face with a rather large, oval tympanum, the internal one being partly covered; tarsi short, chiefly the metatarsus. Posterior femora rather strongly dilated; tibiae armed with four external, five internal yellow spines, and denticulate between the spines; external spurs very short, supero-internal one extending to the apex of the metatarsus; this one is very short, wide, armed with two long apical spurs and one internal, two external denticles, third joint slender, equalling the metatarsus.

Elytra dark brown with humeral edge a little lighter; dorsal field presenting two free veins and seven branches on the discoidal; all of them are very oblique, weak and somewhat irregular; transverse veinlets few in number, forming very large, irregular areolae;

[.] Madasumma geniculata, sp. n. (Fig. 9).

Type: 1 & Laos: Viang-Van, Vitalis de Salvaza, VI—1908; coll. Chopard.—A little larger than M. bimaculata; elytral venation nearly exactly similar; head black; pronotum black above with lateral lobes and two pyriform spots yellow; elytra with humeral edge yellow, a spot in the anal field, another one at apex of the mirror of the same colour; external margin of the mirror spotted with blackish; legs rufous with the apex of the femora and the tibiae blackish. Genitalia much more intricate than in the aforesaid species (see figs. 8 and 9)—Length of body 18 mm.; length with wings 24 mm.; post. fem. 12, 5 mm.; elytra 15, 5 mm.

lateral field presenting a few dark spots along the mediastinal vein; this vein bears eight oblique, parallel branches. Wings extending a little beyond the elytra.

Length of body 17 mm.; length with wings 25 mm.; post. fem. 11 mm.; elytra 17, 5 mm.; ovipositor 10 mm.

This species, which is rather short and wide somewhat reminds me of *M. ventralis* Walk.; it is remarkable by the brown part on the pronotum, the ringed antennae, the elytra with veins weak and wide apart and very large areolae.

Mnesibulus bicolor (Haan).

Rim, Malacca, 1 9 ;—Kuala Pilah, 1 8.

Mnesibulus nigrolineatus sp. n. (Fig. 10).

Type: 1 & , Selangor: Gombak Valley, H. M. Pendlebury, 12th October, 1921.

Medium size; coloration yellowish testaceous (greenish in life?) with a few black lines and drawings on the head, the legs and base of the elytra; thinly pubescent. Head rather big, wider than the pronotum in front; forehead flat, even somewhat concave, presenting a blackish band between the eyes; frontal rostrum a little narrower than the first antennal joint, long with parallel margins; face short, yellow. Palpi short, yellowish; fourth joint of the maxillary palpi shorter than the third, rather strongly dilated, fifth scarcely securiform, a little darkened at apex. Antennae yellow with first joint a little spotted with brown at the internal margin. Eyes big rounded, projecting; ocelli very close to one another, the lateral ones big, oval, the anterior one smaller, at base of the rostrum, in the bottom of a wide depression.

Pronotum transverse, with anterior margin straight, posterior one sinuate; disk flat, a little embossed with two blackish spots on the pyriform impressions; lateral lobes concolorous with inferior margin rounded, their insertion subangular. Abdomen yellowish brown; sixth tergite presenting an angular process directed forwards and lying on a glandular depression of the fifth tergite; tenth tergite transverse with posterior margin slightly notched; subgenital plate rather long, feebly narrowing at apex, longitudinally canaliculated in the middle. Genitalia (fig. 10) presenting a large superior tectiform piece ending in two small erected points; inferior part forming a complex of a small median piece and a rather long forceps bearing a long tooth at base of each branch.

Anterior and medium legs rather short, yellowish, the tibiae presenting a black line above; anterior femora with two longitudinal blackish lines at internal face; anterior tibiae very strongly swollen, the external tympanum nearly square, the internal one oval with overhanging margin; tarsi very short, chiefly the metatarsus.

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Posterior femora rather long, feebly dilated, uniformly yellowish; tibiae a little darkened above, with denticulated margins and armed with five short spines in the apical part of each margin; metatarsi short with long spurs and bearing one apical internal spine and three on the external margin.

Elytra yellowish, nearly transparent with a small brown band at base, covered with a fine pubescence; speculum rather large, longer than wide, divided in the middle; diagonal vein long and straight; chords feebly bowed; anal field large, the anal vein broken at right angle; seven oblique veins, of which two are long, parallel, a little sinuated, and five short, also parallel ones, curved towards the angle of the anal vein; apical field rather short, presenting four sectors only and a very loose reticulation; apex of the elytra much rounded; lateral field yellowish, translucent with thick, yellow veins; mediastinal vein straight, coupled to the humeral vein, bearing ten somewhat oblique, parallel branches; between these branches, there are at base a few transverse, thick veinlets. Wings longer than the elytra.

Length of body 14 mm.; length with wings 20 mm.; post fem. 8, 5 mm.; elytra 13 mm.

This species shows the general shape of certain Calyptotrypus, particularly of furcifera, but the presence of a glandular depression on the abdomen brings it nearer to the Mnesibulus; this depression exists in bicolor at least and it is perhaps a distinctive character of the genus. The genitalia of the present species are very similar to those of M. nigrifrons but the forceps is shorter.

Podoscirtus angustifrons Chop.

Kuala Lumpur, 1 &.

Aphonomorphus gracilis Chop.

Pahang: Lubok Tamang 1 8.

Aphonomorphus punctatus (Haan).

Kuala Lumpur, 2 9 at light;—Perak: Batang Padang I 3.

Euscyrtus concinnus (Haan).

Kuala Lumpur, 2 & , 2 & ; 7th mile Cheras Road I & . Perak; Taiping, I & ;——Parit Buntar, I & . Peninsular Siam: Nakon Sri Tamarat, I & , 2 & ;—Patalung I micropterous & .

The micropterous condition seems rather scarce in this species.

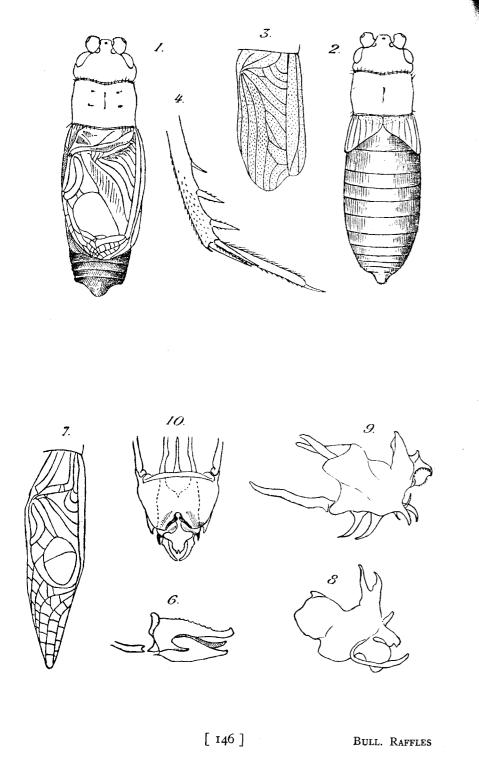
Euscyrtus hemelytrus (Haan).

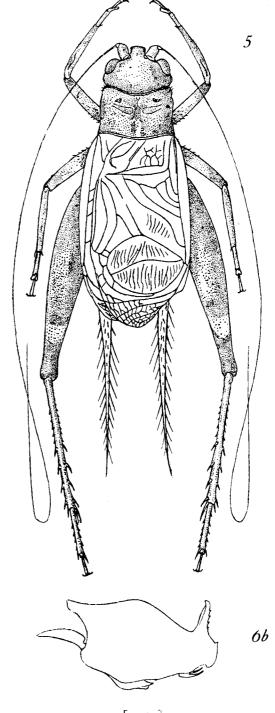
Kuala Lumpur, 1 9.

Euscyrtus crassiceps Sauss.

Perak: Batang Padang, Jor camp, 1 3.

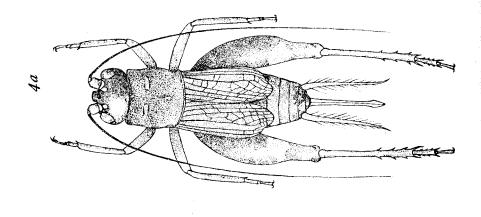
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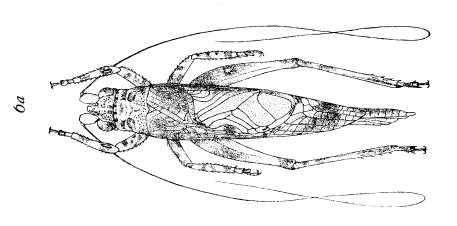




Mus. 6, 1931

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NEUE UND INTERESSANTE MANTIDEN

Patiscus dorsalis (Stal).

Kuala Lumpur, I .

EXPLANATION OF FIGURES

- 1. Duolandrevus rufus, sp. n., Male. Fig.
 - 2. Duolandrevus rufus, sp. n., Female. ,,
 - 3. Endolandrevus tomentosus, sp. n., Right elytron.
 - 4. Scottia rufovariegata, sp. n., Apex of posterior tibia ., (internal face).
 - 4A. Acanthoplistus femoratus, sp. n., Female. ,,
 - 5. Gryllitara pendleburyi, sp. n.
 - ,, 6. Gryllitara pendleburyi, sp. n., Genitalia (lateral view). ,,
 - 6A. Madasumma nigrifrons, sp. n., Male.
 - ,, 6в. Madasumma nigrifrons, sp. п., Genitalia (lateral view) ,,
 - 7. Madasumma bimaculata, sp. n., Right elytron.
 - ,,
 - 8. Madasumma bimaculata, sp. n., Genitalia (lateral ,, view).
 - Madasumma geniculata, sp. n.. Genitalia (lateral ,, view).
 - 10. Mnesibulus nigrolineatus. sp. n., Genitalia (dorsal ,, view).