

the right side being independent of and disconnected from that of the left. But in *Gonibregmatus* each mandible consists of an outer and of an inner branch, the former corresponding to the normal biting mandible of the rest of the class. The inner branch is united to its fellow of the opposite side, though the junctional suture persists, and the plate that results from the union constitutes physiologically a lower lip or labium designed presumably to prevent the escape of fluids issuing from wounds inflicted by the outer branches of the appendage. The mouth lies some distance behind the tip of this lower lip or labium and of the upper lip or labrum, and these two structures constitute the upper and lower walls of a channel which is closed at the sides by the outer branches of the mandible; the mandibles, labium and labrum thus form a kind of proboscis along which the fluid tissues of prey flow or are sucked backwards to the mouth.

CLASS. CHILOPODA (Centipedes).

ORDER. SCUTIGEROMORPHA.

FAMILY. SCUTIGERIDAE.

(1) *Scutigera maculata*, Newp.

Ann. Mag. Nat. Hist. XIII., p. 96, 1844; Tr. Linn. Soc. XIX., p. 359, 1845.

LOC. New Britain.

The specific identity of the two specimens obtained by Dr Willey in New Britain must be regarded as doubtful. Both are of small size and more or less damaged.

This species has been formerly recorded from Australia.

ORDER. SCOLOPENDROMORPHA.

FAMILY. SCOLOPENDRIDAE.

GENUS. *Scolopendra*, Linn.

(2) *Scolopendra metuenda*, Pocock.

Ann. Mag. Nat. Hist. (6), XVI., p. 423.

LOC. Narowol, (Eddystone) Solomon Islands.

The type and hitherto only known example of this species was obtained in New Georgia, in the Solomon Islands, by the officers of H.M.S. 'Penguin.'

GENUS. *Cormocephalus*, Newport.

(3) *Cormocephalus violaceus* (Gervais).

Cormocephalus violaceus, Newport. Tr. Linn. Soc. XIX., p. 424 (1845). (Not *violaceus*, Fabr.)

Scolopendra violaceus, Gervais. Ins. Apt. IV., p. 275 (1847).

Cormocephalus brevispinatus, L. Koch. Verh. zool. bot. Ges. Wien. 1867, p. 248 (*teste* Haase).

Cormocephalus purpureus, Pocock. Ann. Mag. Nat. Hist. (6), XI., p. 127 (1893).

The name *violaceus* applied by Newport to this species is inadmissible for it, having been previously given by Fabricius to a South African member of the same genus. Gervais's name *violacescens* can consequently stand. I proposed the name *purpureus* for the species upon discovering that *violaceus* had to be transferred, but forgetting that there were already a couple of other names in use.

Dr Willey obtained examples of this species in the Loyalty Islands (Lifu and Uvea). It was recorded from New Zealand by Newport, and from Gayndah and Rockhampton in Queensland by Haase.

GENUS. *Cupipes*, Kohlrausch.

(4) *Cupipes amphieurys*, Kohlr.

Cupipes amphieurys, Kohlrausch. Arch. Nat. 1882, p. 79.

Cupipes quadrisulcatus, Meinert. Amer. Phil. Soc. p. 187, 1885.

Loc. New Britain—a single specimen. Previously recorded from Ponape in the Caroline group.

GENUS. *Otostigmus*, Porat.

(5) *Otostigmus punctiventer* (Tömösv.).

Branchiostoma punctiventer, Tömösvary. Termes. fuzetek. IX., p. 66, pl. III., figs. 17, 18.

Otostigma punctiventre, Haase. Abh. Mus. Dresden, p. 72.

Colour olive green or nearly black, with metallic purple or bronze reflections; head, maxillipedes, first and last tergites tinted with chestnut red; legs a greenish or pale purple, paler at the base or indistinctly annulate; antennae greenish.

Head and maxillipedes punctured; coxal processes of maxillipedes with 3-3 or 4-4 teeth, the external on each side strong and separated, the internal fused.

Antennae 18-22 segments, whereof the basal two are naked.

Tergites from the 5th bisulcate, from the 9-11 marginate; from about the 5th or 6th covered with fine spinules, which increase in coarseness in the posterior half of the body; external portion of tergites distinctly though not very strongly wrinkled.

Sternites bisulcate in their anterior half, with a stronger or weaker posterior median impression; punctured and beset with short scattered setae.

Anal tergite and sternite spicular like the rest; the former mesially impressed posteriorly, the latter emarginate: pleurae elongate, armed with 5, 6 or 7 spines, 2 apical, 2 or 3 external, and 2 or 1 dorsal: anal legs long and slender, femur armed with about 14 spines, 3 (one apical), 3, 3, 5 or 4; protarsus with a spur. Rest of the legs also with protarsal spur. Length 50 mm., of anal leg 14.5, of antennae 15.5.

Loc. New Britain. Several specimens.

Haase's description of *O. punctiventer* from Sarawak, Borneo, applies closely to these specimens, making slight allowances for differences in the state of preservation of the examples examined.

(6) *Otostigmus angusticeps*, sp. n.

Colour a uniform green, head slightly rufescent: anal legs banded with darker green.

Head oval, elongate, rather coarsely but sparsely punctured antennae with 19 segments, of which the basal two or three are naked.

Precoxal plates of maxillipedes armed with 3-3 teeth, the two inner fused, the outer isolated.

Tergites smooth, punctured, not spicular, and not noticeably wrinkled, from the 5th bisulcate, from the 9th marginate.

Sternites also smooth, strongly and completely bisulcate, with an anterior and posterior median impression.

Anal somite: tergite posteriorly impressed: sternite broad: pleurae elongate, with two apical spines and one external spine near the base of the process.

Legs moderately long, femur armed with 11 strong spines arranged in four rows 3, 3, 2, 3: tarsus unspined. Protarsal segment of the remaining legs spined.

Total length 41 mm.: of anal leg 11, of antennae 12.

Loc. New Britain.

Differs from the preceding species in the smoothness of the dorsal and ventral surface, the completeness of the sulci on the sterna, the fewer spines and absence of protarsal spur on the anal legs.

GENUS. *Ethmostigmus*, Poc.(7) *Ethmostigmus platycephalus* (Newport).

Heterostoma platycephalus, Newp. Trans. Linn. Soc. XIX., p. 415 (1845).

Loc. New Britain. Previously recorded from Halmahera, New Guinea, Tahiti, Duke of York Island, etc.

(8) *Ethmostigmus granulosus*, sp. n.

Colour a tolerably uniform olive brown, with metallic reflection; lower surface olive yellow, antennae olive green at the base, distally covered with fulvous pubescence; maxillipedes and anal pleurae castaneous; legs olive green with pale yellowish basal and tarsal segment.

Antennae with 20 segments, whereof the basal 3-4 are naked.

Head and tergal plates finely punctured; the middle and posterior tergal plates very finely but not very closely granular, the granulation thicker at the posterior end of the body than at the anterior end; tergal plates from the 5th bisulcate, from the 6th marginate: sternal plates very obsoletely bisulcate.

Anal pleurae long and slender, surpassing the middle of the femur and as long as the femur of the anal leg, armed with 1 lateral spine; 2 larger adjacent apical spines, above which there are usually 2, and below sometimes 1 smaller spine.

Anal sternite narrowed and emarginate posteriorly; its posterior width less than its length and only a little more than half its basal width.

Anal legs longish and slender, the femur nearly four times as long as broad, armed with only 8 spines, including the apical process, arranged from above downwards as follows: 3, 2, 1, 2; protarsus unspined. Protarsus of pre-anal leg and of all in front of it with a single spur.

Measurements in millimetres. Total length of body and head 78, of antennae 22, of anal leg 24, width of body 8, of head 6, of anal tergite 5.

Loc. New Britain. Two examples.

This species differs from previously described forms in the fine granulation of its tergal plates. Apart from this feature it may be recognised from the preceding species by having only 8 spines on the anal legs.

Dr Willey also obtained an example apparently referable to this species from Narowol, in the Solomon Islands, and the British Museum has others from the Duke of York Island, which Mr Butler confounded with specimens of *E. platycephalus*, describing the two as *Heterostoma brownii*. The type of *brownii*, however, seems to be conspecific with that of *H. platycephalus*.

ORDER. GEOPHILOMORPHA.

FAMILY. DICELLOPHILIDAE, Cook.

GENUS. *Mecistocephalus*, Newport¹.

Proc. Zool. Soc. 1842, p. 178.

(9) *Mecistocephalus punctifrons* (Newport),

loc. cit.

Loc. New Britain.

(10) *Mecistocephalus lifuensis*, sp. n.

Colour yellow, head and maxillipedes castaneous.

Head-plate sparsely punctured, a few larger punctures amongst the smaller; two posterior grooves prominent; basal plate, maxillipedes and 1st tergite also sparsely punctured. Each *maxillipede* armed internally with 5 tubercular teeth.

Sterna, except the posterior, marked with median groove, which at the anterior end of the body is Y-shaped. Sternite of anal segment broad at the base, triangularly pointed posteriorly.

Pleurae moderately inflated, furnished with only about 20 large scattered pores.

51 pairs of legs. Length 34 mm.

Loc. Lifu (Loyalty Islands).

¹ This genus of Newport's was primarily based upon the following species: *ferrugineus*, *maxillaris*, *punctifrons* and *guildingii*. The first of these, *ferrugineus*, was subsequently, that is to say, in 1847, taken out as the type of *Pachymerium*, and carries with it the second species, *maxillaris*. This left the two following species *punctifrons* and *guildingii* to represent *Mecistocephalus*, and the former was practically selected as the type by Wood (1869), and Meinert (1870). Thus by the process of elimination *punctifrons* will stand as the type of *Mecistocephalus*, of which *Lamnonyx* of Cook will be by this method a synonym.

In possessing 51 pairs of legs this species resembles *L. gigas* of Haase (Abh. Mus. Dresden, No. 5, p. 105, Pl. vi. fig. 111) recorded from New Guinea, but apart from its much smaller size, *gigas* attaining a length of 105 mm., *L. lifuensis* certainly differs in having the anal pleurae but little inflated and the pores large, few in number and not close-set. Haase describes these organs in *gigas* as follows:—"pleurae posticae valde efflatae, rotundatae, poris perminutis plurimis perforatae." Mr Cook, it may be added, has recently established the genus *Megethmus* for *M. microporus* of Haase (Proc. U. S. Nat. Mus. XVIII., p. 74, 1896).

FAMILY. GONIBREGMATIDAE, Cook.

Proc. U. S. Nat. Mus. XVIII., p. 16, 1895.

GENUS. *Gonibregmatus*, Newport.

Newport, Proc. Zool. Soc., 1842, p. 181; Linn. Trans. XIX., p. 434, 1845.

Pocock, Max Weber's Zool. Ergebnisse, etc., Vol. III. pt. 2, pp. 317-319, 1894.

Sub-frontal plate of head hairy; produced downwards into a triangularly pointed prominence which supports the labrum at its apex; labrum consisting of a small semicircular plate of which the whole of the free margin is pectinate; that is to say, armed with fine, close-set spinules. (Figs. 1 c—1 d.) Laminae fulciantes irregularly hammer-shaped, with a slender posterior process which nearly meets its fellow of the opposite side in the middle line. Closely pressed against the laminae fulciantes and lying in the hollow formed by the labral process in front lie the mandibles. Each of these is composed of two branches, an outer and an inner; the former are in front of the latter, broad at the base, pointed at the apex, with the outer margin bristly, the inner or biting margin pectinate; the inner and posterior branches of the mandibles meet in the middle line throughout their length, though apparently without actual fusion, forming together a broadly triangular plate, the distal portion of which is membranous. (Figs. 1 e—1 g.)

Maxillae forming a plate, the free part of which is composed of a pair of rounded unsegmented plate-like, hairy lobes. (Fig. 1 h.)

Maxillipedes of 1st pair robust, coxa produced posteriorly, the rest of the segments thickly hairy or bristly, the claw strong.

Maxillipedes of 2nd pair with coxal plate twice as wide as long, the rest of the appendage slightly overlapping the head at the sides, with long, powerful claws. (Fig. 1 c.)

Head-plate about as long as wide, with very distinct and large frontal plate.

Antennae broad at the base, distally parallel-sided, segments more or less moniliform. Prebasal plate small, transversely lanceolate; basal plate wider than head.

Tergal plates with a pair of impressions, one at each side, rugose mesially.

Sternal plates with the pores apparently arranged in irregular transverse areas.

As many as five pleural sclerites above the stigmatiferous sclerite; stigmata vertically linear.

Anal pleurae inflated, finely porous, encroaching upon the antepenultimate segment; anal tergite narrow, sternite wider than long; no anal pores. Anal appendages of male two segmented; legs of male not inflated. (Figs. 1*a*—1*b*.)

This interesting genus was previously only known from a couple of specimens, each the representative of a particular species. Consequently up to the present time no detailed information respecting the mouth-parts was forthcoming.

Dr Willey, however, was fortunate enough to obtain several specimens of a third species in New Britain. I have therefore taken the opportunity to make the necessary dissection of the jaws and to supplement the diagnosis of the genus and family by describing them.

When establishing the family, Mr Cook, judging from the other structural features of *Gonibregmatus*, ventured to prophesy that the mouth-parts of this genus would prove to be peculiar. Examination has amply justified the prediction; for in the formation of its mandibles, which seem to retain a primitive bi-ramous character, *Gonibregmatus* stands alone in the class Chilopoda.

(11) *Gonibregmatus anguinus*, sp. n.

Pl. VI, Fig. 1.

Colour a uniform yellowish brown, with a bright red transverse band on the head. Number of pairs of legs 129 ♀, 115 ♂.

Length of ♀ up to 130 mm., of ♂ from 70–115 mm.

Loc. New Britain.

It is needless to describe this species in greater detail, since it appears to differ from the two previously established species of the genus in the characters set forth in the subjoined table:—

- | | | |
|------|---|--|
| (a) | Prescutum of anal somite distinct, separated from the tergite behind it by a deep transverse groove; 161 pairs of legs in ♀..... | <i>cumingii</i> , Newport, Philippine Islands. |
| (b) | Prescutum of anal somite either completely fused with the tergite or separated from it by a shallow suture; 129–131 pairs of legs in ♀. | |
| (a') | Suture between prescutum and tergite persists as a shallow curved groove | <i>anguinus</i> , sp. n. New Britain. |
| (b') | Suture between prescutum and tergite practically obliterated..... | <i>insularis</i> , Poc. Island of Saleyer. |

When comparing *G. cumingii* and *G. insularis* on a previous occasion, I pointed out what at the time appeared to be two differential characters for *cumingii*, namely, the overlapping of the head-plate in front by the maxillipedes and the forward extension of the anal pleurae nearly to the posterior extremity of the fourth somite from the end. Both of these characters I now believe to be due to shrinking of the sclerites owing to drying.

FAMILY. EUCRATONYCHIDAE, nov.

Eucratonyx, gen. nov.

Pl. VI, Figs. 2—2 c.

Antennae broad at the base, attenuated apically.*Head* covering maxillipedes, frontal plate distinct, suture weak; basal segment almost as wide as the head, but not covering the pleurae of the maxillipedes; pre-basal plate either concealed by the head or appearing as a transversely linear sclerite.*Labrum* not coalesced, undivided, appearing as a broad transverse plate the edge of which is sinuous, slightly convex at the sides, broadly and shallowly emarginate in the middle; armed with about thirty spinules, horny and close-set in the middle, transparent and directed inwards at the sides. (Fig. 2.)*Mandibles* with the cutting edge toothed anteriorly (internally), pectinate posteriorly (externally) [apparently with only one pectinate and one dentate lamella]. (Fig. 2 a.)*Maxillae* with external branch two-jointed; internal branch large and lobate. (Fig. 2 b.)*Maxillipedes* of 1st pair with their coxae united by a narrow bridge; claw strong and pectinate. Coxal plate of second maxillipedes about twice as wide as long; chitinous lines distinct.*Tergites* strongly bisulcate. *Sternites* with pores arranged in an irregular posterior transverse series, a few scattered pores in the middle and fore part of the plates. Stigma-bearing sclerite in contact with tergite.*Anal pleurae* moderately inflated, covered but not closely with fairly large pores; anal legs long, moderately thick, clawless.Type, *Eucratonyx meinerti* (Poc.).

This species was described originally under the genus *Himantarium* (Journ. Linn. Soc. XXI., p. 289, pl. XXIV., fig. 1; also Ann. Mus. Genova, xxx., p. 42, 1891). It certainly, however, differs in many important characters from *H. gabrielis*, the type of the last-named genus. Nor am I able to bring it into line with any of the families of Geophilomorpha established by Mr Cook. I am consequently compelled to create a new family for its reception. Tested by Cook's analytical table of the families of this group the *Eucratonychidae* fall alongside the *Schendylidae* under section D, but the size of the head and basal plate as compared with the prehensors (2nd maxillipedes), the distribution of the sternal pores, etc., seem to prohibit such a reference.

(12) *Eucratonyx hamatus*, sp. n.

Pl. VI, Fig. 2 c.

This species and *E. meinerti* may be distinguished as follows:

- (a) Pleurae of the prehensorial maxillipedes showing very visibly at the sides of the basal plate; claws of legs in anterior half of the body weaker and but little curved. Number of legs from 103 (♂) up to 119 (♀); length of ♀ up to 112 mm. *meinerti*, Poc. Burmah, etc.

- (b) Pleurae of prehensorial feet almost entirely covered by the basal plate; claws of anterior legs very stout, the distal half bent at right angles to the basal half, sometimes with a process running out from the base to the apex; number of legs ♀ 123; length of ♀ 43 mm.....*hamatus*, sp. n. New Britain.

CLASS. DIPLOPODA (Millipedes).

ORDER. POLYDESMOIDEA.

FAMILY. PLATYRRHACHIDAE.

GENUS. *Acisternum*, Silvestri.

Ann. Mus. Genova, XXXVI., p. 191, 1896.

(13) *Acisternum flavisternus* (Poc.).

Max Weber's Zool. Ergebnisse, III., pt. 2, p. 346, pl. XIX., fig. 16.

Loc. Tjibodas in Java.

The type specimens of this species were also obtained at Tjibodas.

In the synoptical table of the species of *Platyrrhachidae* taken by Max Weber (*loc. cit.*, p. 344) it is stated with regard to this species, "Sternal areas unarmed." This is an error; for the sternal areas in the fore part of the body, that is from segments 3 to 10, are armed with tuberculiform spines. These are fairly strong on the 4th and 5th segments, but decrease in strength posteriorly and practically die out at the posterior end of the body. In *Acisternum monticola*, Poc., the type of the genus, the sternal spines persist to the posterior end of the body, though they become very small.

Parazodesmus, gen. nov.

Pl. VI, Figs. 3—3 b.

First tergite broadest across the middle, where it is furnished with a depressed rectangular keel.

Keel-bearing portion of the other segments covered, but not very closely, with rounded tuberculiform granules. Three rows of tubercles conspicuous, those of the anterior row as large as those of the posterior. Keels of medium size, depressed, anterior border basally shouldered and, like the posterior border, granular, lateral border tri- or quadritubercular, posterior angle produced but not spiniform.

Pore dorsal, behind the middle of the keel, and about equidistant from the lateral and posterior borders. Caudal process with margin convex and lightly notched. *Sternal plate* with two tubercles. *Sterna* granular, not spined. *Copulatory feet* with basal portion straight, apical portion strongly curved upwards towards the sternal process and giving off five slender processes, four long and one short.

This new genus is very nearly related in many of its features to *Zodesmus*, of which the only known species is *tuberosus*, Poc., from the Ki Islands (Ann. Mag. Nat. Hist. (6) XI., p. 131, pl. IX., figs. 3, 3b). The two may be distinguished as follows:—

- (a) Tubercles of anterior row smaller than those of the posterior; pores about one diameter from the lateral border and two from the posterior border of keels; caudal process more quadrate, with posterior border lightly convex; terminal portion of copulatory apparatus curved inwards, ending in three prongs. *Zodesmus*.
- (b) Tubercles of anterior row as large as of posterior row; pores in middle and at anterior end of body about two diameters from the lateral margin; caudal process longitudinally oval, terminal portion of copulatory organ bent upwards and backwards, ending in five prongs. *Parazodesmus*.

(14) *Parazodesmus verrucosus*, sp. n.

Colour black or deep chocolate brown, keels flavous, cylindrical part of the segments pale above with a median dark spot; caudal process entirely dark; legs dark with flavous coxa and trochanter; sternal area dark, ventral portion of cylindrical half pale, antennae dark brown.

Antennae about equalling the width of the 1st tergite in length.

First *tergite* with its antero-lateral border evenly convex. Second tergite with its keels projecting below those of the 3rd, their lateral margins convex and five-tubercular. Anterior border of keels of the middle segments of the body transverse, anterior angle square, posterior angle acute, posterior border concave and directed slightly forward, posterior border of only the last four keels projecting backwards.

Hairs on *legs* clavate.

Male smaller than female; antennae longer than width of first tergite. The first two processes of the copulatory organ given off close together on the outer side of the terminal portion of the organ, the first (proximal) straight, directed backwards parallel to the axis of the foot, the second semicircularly curved inwards, upwards and backwards, the remaining three rising from a common base, the terminal pair long, subequal and subsimilar curved, the fifth one arising as a short backwardly directed process from the outer side of the base of the outer.

♀ length 36 mm., width 6 mm.

Loc. Narowol, Solomon Islands.

Specifically this species may be distinguished from *Zodesmus tuberosus* as follows:—

- (a) Moderately convex; antennae, legs and sternal areas flavous, cylindrical half of segments a uniform chocolate brown. *tuberosus*, Poc.
- (b) More strongly convex; antennae and legs with the exception of the two basal segments, fuscous; sterna also fuscous, cylindrical half of segments pale above, with median brown spot. *verrucosus*, sp. n.

FAMILY. STRONGYLOSOMATIDAE.

Aschistodesmus, gen. nov.

Pl. VI, Figs. 4—4c.

Resembling *Strongylosoma*, but differing in the entire absence of transverse sulcus upon the dorsum of the keel-bearing portion of the segments. *Caudal process* nearly parallel-sided, oblong, with truncate, lightly emarginate posterior border, tubercles not apparent. *Sterna* grooved longitudinally and transversely, with backwardly directed tuberculiform spines at the bases of the legs.

(15) *Aschistodesmus maculifer*, sp. n.

Colour of head, antennae and segments entirely black, with a median yellow spot on the posterior portion of the dorsum of the keel-bearing portion of the segments; sterna and legs flavous.

Head smooth, antennae with segments from the second to the sixth gradually but only slightly increasing in length and thickness. Dorsum of all the segments smooth and polished; groove not sculptured. *Keels* conspicuous but small, with thickened margin, posterior angle produced, anterior strongly convex. Lateral surface smooth, without crest above the stigmatiferous tubercles. *Legs* with femur and tarsus the longest segments, femur about as long as patella and tibia taken together, and a little longer than the tarsus. Anal sternite with its median process a little surpassing the lateral tubercles.

Male with an undivided tuberculiform prominence upon the sternum of the 5th segment. Tarsi of legs of anterior nine segments with hairy pad. Copulatory organ (as in figure) broad and spatulate, its lower surface strongly convex from side to side, the external border deeply notched, a spiniform process behind the notch, internal border sinuate, the external surface anteriorly produced into a broad curved process bearing two slender nearly filiform processes; upper surface bearing two short hooked processes, one external, the other internal.

Measurements in millimetres. Total length 27 mm., width 3 mm.

Loc. New Britain.

ORDER. SPIROBOLOIDEA.

GENUS. *Rhinocricus*, Karsch.(16) *Rhinocricus cristovalensis*, sp. n.

Pl. VI, Fig. 5.

Colour (in alcohol) a tolerably uniform olive brown, paler below, dorsum of segments marked by a median black longitudinal band with a yellow or red stripe on each side of it, the latter only about half the width of the former; these stripes traceable from about the 5th to the penultimate tergite; legs and antennae ochre yellow.

Female; *head* punctulate and striolate, frontal sulcus complete; eyes composed of 35 ocelli arranged in 6 transverse rows; antennae about as long as the head. *Somites* finely punctulate and striolate; transverse sulcus nearly obsolete dorsally, the area of the dorsum in front of the sulcus irregularly marked with transverse striae which inferiorly assume a longitudinal direction and are continuous with the normal longitudinal striae, which at the anterior end of the body extend nearly up to the pore; a faint longitudinal sulcus extending from the pore to the posterior margin. *Scobina* extending to about the 28th segment; the posterior border of the tergite just above it shallowly emarginate.

Anal tergite rectangularly produced, not surpassing the valves; valves lightly compressed, with borders but little thickened; and sternite rectangularly produced.

Legs with a single seta on each segment except the tarsus, which is supplied with about six.

Male smaller and thinner than female; antennae longer than head; coxae of 3rd, 4th, and 5th legs a little produced; distal segments of these legs and of the following pair swollen beneath; tarsi of legs in anterior half of body padded. *Copulatory organ* as in figure. (Fig. 5.)

Number of segments 42-43.

♀ length 51 mm., width 5.5 mm.; ♂ length 43 mm., width 4.5 mm.

Loc. Maranta, San Cristoval.

(17) *Rhinocricus gazellensis*, sp. n.

Pl. VI, Fig. 6.

Colour a uniform black or olive brown throughout, except the anterior margin of the segments which shows as a pale band when the scobina is exposed.

Head smooth on labral portion, punctulate and striolate, sometimes rather coarsely wrinkled above; median sulcus strong above and below, weak in the middle. *Eyes* composed of above 46 ocelli arranged in seven transverse rows.

Somites smooth, polished, or at most finely punctulate dorsally; the transverse sulcus obsolete, scarcely traceable below the pore, represented above it merely by a shallow groove, the longitudinal striae extending up to or a little above the pore. *Scobina* traceable to about the 38th segment; posterior border of segments not bisinuate, furnished with a series of larger and smaller short, spaced, squamiform, clavate pectinate hairs. Anal somite small; tergite rectangularly produced, transversely impressed; valves posteriorly prominent, a little compressed towards the margin; sternite semicircular.

Male; legs of third pair with coxae and succeeding two segments produced; coxae of fourth also a little produced; tarsus of legs in anterior portion of body padded. *Copulatory apparatus* like that of *R. cristovalensis*, but the median process of the anterior sclerite is shorter and the process of the anterior lateral sclerite longer.

Number of segments 49-50.

Length of ♀ 77 mm., width 6 mm.

Loc. Gazelle Peninsula, New Britain.

(18) *Rhinocricus biincisus*, sp. n.

♀ *Colour* olive black, the posterior rim of the segments pale, and the entire posterior portion reddish laterally; antennae and legs reddish yellow.

Transverse groove obsolete above the pore on all the segments except the anterior eight. Scobina large, the border of the tergite above it, distinctly sinuate.

Anal valves not prominent.

Number of segments 54.

Length 80 mm., width 7 mm.

Loc. Gazelle Peninsula, New Britain. A single ♀.

The three species of *Rhinocricus* here described may be distinguished by the following table:—

- (a) Back ornamented with a pair of red or yellow bands separated by a median dorsal blacker band; dorsum of segments transversely striate, the transverse sulcus just traceable dorsally; anal valves as under (a'); legs pale.....
..... *cristovalensis*.
- (b) Back without longitudinal bands and without transverse striae.
 - (a') Anal valves produced considerably beyond the tergite; body and legs and antennae black, tergites not bisinuate posteriorly, scobina small. *gazellensis*.
 - (b') Anal valves scarcely at all produced beyond the level of the tergite; scobina large; tergites noticeably bisinuate; legs and antennae reddish yellow..... *biincisus*.

GENUS. *Spirobolus*, Brandt.(19) *Spirobolus carneipes*, sp. n.

♀ *Colour* (in alcohol) a nearly uniform pale olive green, posterior border of segments with a narrow yellow band in front of which there is a darker stripe; anal segment olive black; legs clear reddish pink.

Head and segments densely punctulate throughout; transverse sulcus obsolete dorsally but traceable above the pore; pores small, apparently situated upon the sulcus.

Number of segments 44.

Length about 50 mm.; width 6 mm.

Loc. Isle of Pines.

This species has not been described at any great length on account of the closeness of its resemblance to *S. caledonicus*, Pocock (Ann. Mag. Nat. Hist. (6), XI, p. 253, 1893), from New Caledonia. The latter, however, has the legs entirely black and the head and segments smooth and polished. The two following species from New Caledonia no

doubt also fall into the genus *Spirobolus* as now restricted, namely, *S. insulanus* and *S. albidicollis*, Porat (Ann. Soc. Ent. Belg. xxxii., pp. 251-253, 1888), and both are evidently related to *S. carneipes* and *S. caledonicus*. The four species, however, seem to be separable by the following features:—

- (a) Segments not transversely banded, usually marked dorsally with a pair of red or yellow longitudinal stripes; legs pale. *insulanus*.
- (b) Segments transversely banded, without longitudinal stripes.
 - (a') Segments mostly smooth and polished, at least not rugose: legs and antennae uniformly black. *caledonicus*.
 - (b') Segments coriaceous or rugose.
 - (a'') Legs and antennae yellowish brown, ringed with black; first tergite mostly whitish. *albidicollis*.
 - (b'') Legs and antennae a uniform reddish pink; 1st segment not whitish. *carneipes*.

S. detornatus, Karsch. (Zeits. Naturwiss. 54, p. 57, 1881), from Viti Levu, probably also belongs to this section. If so it will apparently differ from those species enumerated above in having the face divided by a deep sulcus and thickly marked laterally with oblique striae.

GENUS. *Trigoniulus*.

(20) *Trigoniulus pulcherrimus*, sp. n.

Colour (in alcohol); dorsum of segments occupied by a broad blood-red band divided in the middle line by a narrow black stripe, sides of the segments occupied by a broad black stripe; lower portion of segments also blood-red; first tergite and anal somite black; lower half of head pale, upper half black; antennae palely fuscous; legs entirely pale yellow.

Head and first tergite smooth; the rest of the segments with their posterior portion elevated and smooth or nearly smooth dorsally, striate laterally and inferiorly but not more than half-way up to the pore; the groove separating the anterior and posterior parts of the segments marked dorsally from pore to pore with a series of subcircular impressions; below the pore on each side the groove is impressed with the ends of the striae, which pass backwards on to the anterior portion of the tergites.

Pore situated upon or perhaps a little behind the groove. *Anal tergite* forming a blunt obtusely-angled point not surpassing the valves; valves lightly compressed; sternite with posterior border transverse.

Number of segments 46.

Length 30 mm., width 2·8 mm.

Loc. New Britain.

This species is very noticeable for its bright black and blood-red colouring.

ORDER. COLOBOGNATHA.

GENUS. *Bdellotus*, Cook.(21) *Bdellotus bivittatus*, sp. n.

Head, antennae and first segment black; the rest of the segments black and polished, but marked dorso-laterally with two parallel white bands extending from the anterior to the posterior end of the body; the median dorsal black band about as wide as the lateral white bands; margins of tergites below the pores narrowly white; anal somite black; legs infusate.

Number of segments 65.

Length 11 mm., width 8 mm.

LOC. Lifu, Loyalty Islands.

In its banded coloration the species calls to mind *Bdellotus formosus*¹ (Pocock), the type of the genus *Bdellotus*, from Java; but the latter has a single median dorsal white line and the first and last tergites are also white, whereas *B. bivittatus* has a median dorsal black band and the first and last tergites black.

EXPLANATION OF PLATE VI.

FIG. 1. *Gonibregmatus anguinus*, sp. n. ♀. × 2.

- | | | | | |
|------|---|---|---|--|
| 1 a. | " | " | " | last segment of ♂ from above to show persistence of suture (a), between the anal tergite (b), and the prescutum (c). |
| 1 b. | " | " | " | last segment of ♂ from below showing biarticulated genital appendages (a). |
| 1 c. | " | " | " | labrum. |
| 1 d. | " | " | " | dentate margin of labrum. |
| 1 e. | " | " | " | mandibles from behind showing outer branches (a) and inner branches forming labial plate or lower lip (b). |
| 1 f. | " | " | " | left mandible from the front; outer branch (a), with pectinate edge and labium (b). |
| 1 g. | " | " | " | enlargement of portion of pectination. |
| 1 h. | " | " | " | maxillary lobes of left side from the front. |
| 1 i. | " | " | " | maxillary lobes and maxillipede of left side from below (behind). |

FIG. 2. *Eucratonys meinerti* (Poc.) labrum.

- | | | | | |
|------|---|---|---|---|
| 2 a. | " | " | " | right mandible from below (behind). |
| 2 b. | " | " | " | maxillae and maxillipede of right side from below (behind). |
| 2 c. | " | <i>hamatus</i> sp. n. claw of one of the anterior legs. | | |

¹ Max Weber's *Zool. Ergebnisse*, III. pt. 2, p. 338, pl. xx. Fig. 5, 1894.

FIG. 3. *Parazodesmus verrucosus*, gen. et sp. n. copulatory foot, external view.

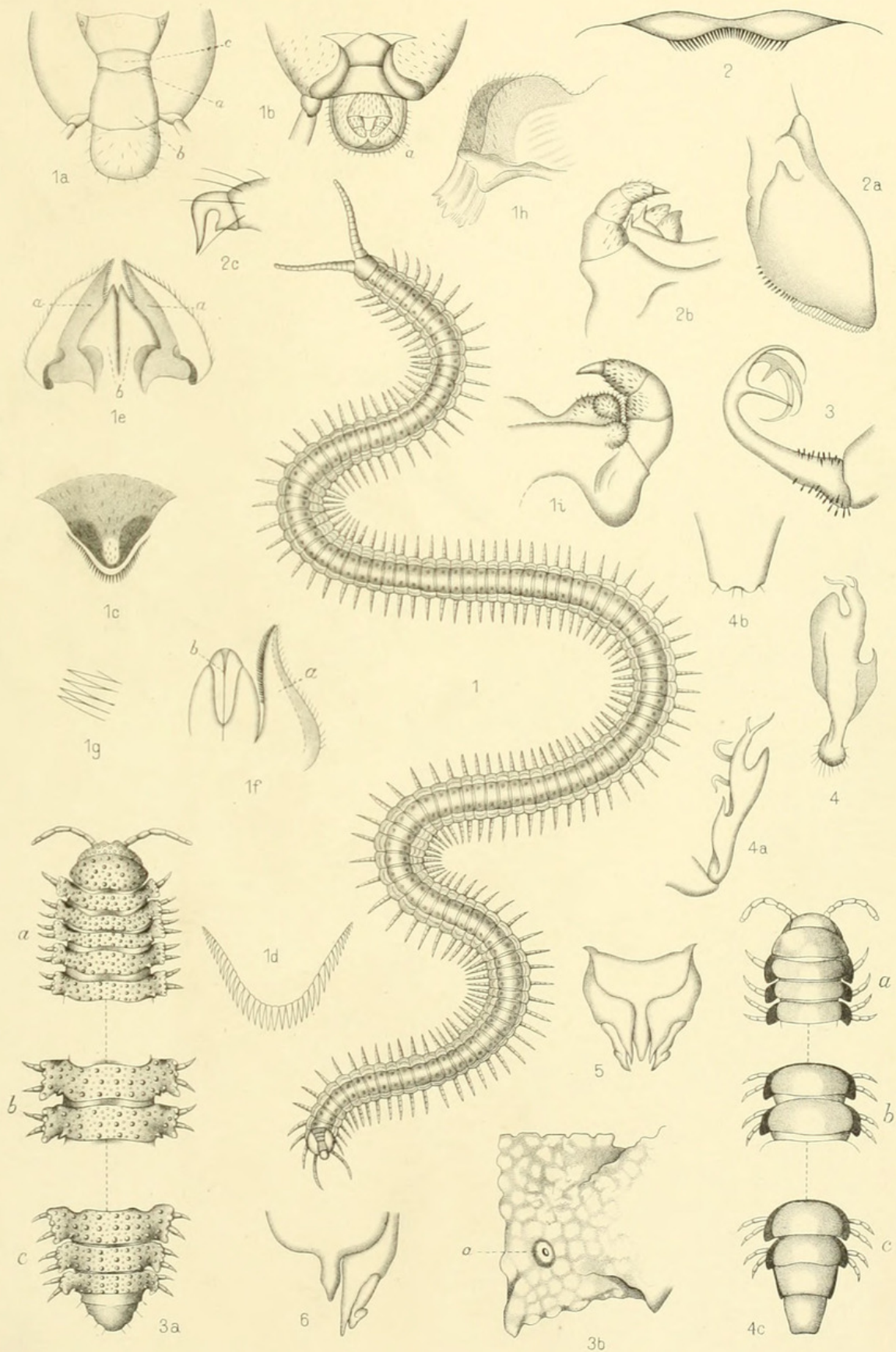
- | | | | | | |
|------|---|---|---|---|--|
| 3 a. | " | " | " | " | dorsal side of anterior end of body (a), of two median segments (b), of posterior end (c). |
| 3 b. | " | " | " | " | upper side of left keel of segment 13 to show marginal armature and position of pore (a). |

FIG. 4. *Aschistodesmus maculifer*, gen. et sp. n. left copulatory foot from below.

- | | | | | | |
|------|---|---|---|---|--|
| 4 a. | " | " | " | " | right copulatory foot from the outside. |
| 4 b. | " | " | " | " | caudal process. |
| 4 c. | " | " | " | " | dorsal side of anterior end of body (a), of two median segments (b), of posterior end (c). |

FIG. 5. *Rhinocricus cristovalensis*, sp. n. copulatory apparatus (anterior aspect).

FIG. 6. *Rhinocricus gazellensis*, sp. n. copulatory apparatus (anterior aspect, portion of right half omitted).





Pocock, R. I. 1898. "Report on the centipedes and millipedes." *Zoological results based on material from New Britain, New Guinea, Loyalty Islands and elsewhere, collected during the years 1895, 1896, and 1897* 1, 60–74.

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