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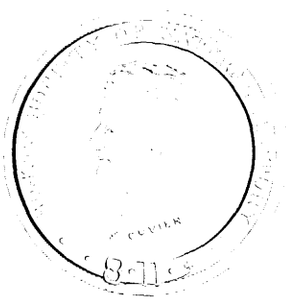

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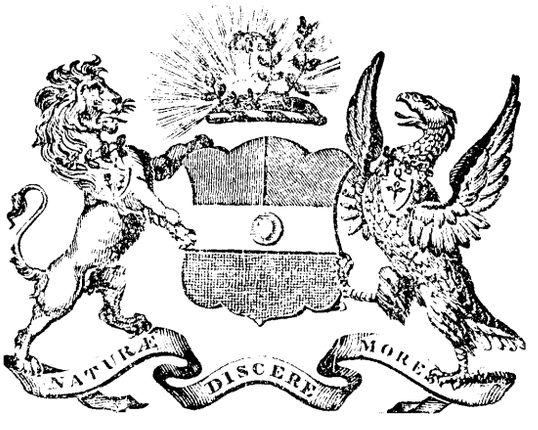
THE LINNEAN SOCIETY OF LONDON.

REPORT ON A COLLECTION MADE BY MESSRS. F. V. McCONNELL AND J. J. QUELCH AT MOUNT RORAIMA IN BRITISH GUIANA.

(*Communicated by* Prof. E. RAY LANKESTER, D.C.L., F.R.S., Director Nat. Hist. Mus.)



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September 1900.

II. *Report on a Collection made by* Messrs. F. V. McConnell *and* J. J. Quelch *at Mount Roraima in British Guiana.* (*Communicated by Professor* E. Ray Lankester, *D.C.L., F.R.S., Director of the Natural History Museum.*)

(Plates 4–6.)

Read 1st February, 1900.

For some years past the British Museum has received many interesting collections made by Mr. F. V. McConnell and Mr. J. J. Quelch during their various expeditions into the interior of British Guiana. On the last occasion the explorers succeeded in reaching the summit of Mount Roraima, and I have much pleasure in forwarding the accompanying descriptions of the new species obtained during the expedition, all of which have been worked out by members of the staff of the Zoological Department of the British Museum, excepting the Crustacea, which have been dealt with by Dr. de Man.

Mr. McConnell has kindly sent me the following note:—"The specimens were obtained by Mr. J. J. Quelch and myself on our second expedition to Roraima in August, September, and October, 1898. The route taken on this occasion was by the Mazaruni and Curubung rivers to the Falls of Macrobah, a boat-journey of twenty days, and thence by land to a point on the Upper Mazaruni where that river flows at a height of 1300 feet. Small bark-canoes were here obtained, and after three days' journey up the Cako and Aruparu we arrived at the commencement of the trail to Roraima. With the exception of the last twenty miles, the whole journey, which occupied forty days, lay through thick forest.

"Mount Roraima (8700 feet) is formed by a sloping base, surmounted by a rectangular mass, fifty-four square miles in area, with perpendicular walls 2000 feet in height. On the south-west, part of the wall has slipped, and lies diagonally across the face of the upper part of the mountain. By following the ledge so formed the summit can be reached without serious difficulty."—E. Ray Lankester.

MAMMALIA.

By W. E. de Winton, F.Z.S.

Order RODENTIA.

Rhipidomys Macconnelli, sp. n.

The general colour of the entire upper surface rich golden brown; the fur is very soft, from 11 to 12 millimetres in length, dull black for the greater part of its length with bright red golden tips; the slightly longer straight hairs have black tips; the lower surface is dirty white or drab, the fur being dull black with whitish tips, with no line of demarcation between the colours of the upper and lower surfaces. The ears are large, round, and naked, almost black in colour. The hands and feet dirty white, rather darker on the upper surfaces, almost naked. Whiskers long, reaching beyond the shoulders. The tail is brown, only very slightly paler beneath, practically naked, the very minute hairs in no way hiding the scales; at the extreme tip there is a long pencil of hairs about 10 millimetres long, but no bushy hairs on the sides.

Upper incisors dull orange, rather darker than those of the lower jaw.

Measurements taken from the specimen in alcohol:—Head and body 95 millim., tail 147, hind foot 24·5, ear 17.

Skull—greatest length 26·5; greatest breadth 14·5, across brain-case 12·7; narrowest interorbital constriction 4·6; length of nasals 9·1; basal length 22·6; back of incisors to back of palate 11·5; incisive foramina 5·9 × 2·5; diastema 7; length of molar series 5; width outside first molar 5·5, outside last molar 5·9; mandible, tip of incisors to coronoid process 12, to condylar process 17·8, to angle 17·3.

The type and only specimen was found on the summit of Roraima, Demerara, and has been presented to the Museum by Messrs. McConnell and Quelch.

The skull is fragile and transparent, with large, smooth brain-case; the zygomata are very thin and weak, expanding very little beyond the sides of the head in the squamosal region only. The molars are set in almost parallel rows; the auditory bullæ are very small; the foramen magnum is very large, the surrounding bones very thin, especially the basioccipital condyles.

This new *Rhipidomys* is of much the same size as *R. microtis*, Thos., from Colombia, but the colour is distinct, being much darker above, while the underparts are greyish with dark bases to all the fur instead of being pure white; then the ears of the new species are large, while those of the Colombian species are very small. The tip of the tail may or may not be distinct, for the end of the tail of the type of *R. microtis* appears to me to be wanting.

The broken state of the skull of *R. microtis* excludes the possibility of a fair comparison being made, but in the dentition the two species seem very similar.

BIRDS.

By R. Bowdler Sharpe, LL.D., F.L.S.

(Plate 4.)

From the summit of Roraima Mr. McConnell brought several specimens of a *Zonotrichia* quite distinct from the ordinary *Z. pileata* which is found over the greater part of Central and South America. It is a larger and darker bird, much greyer, and with the rump and flanks dark grey instead of brown. I propose to call it after Mr. McConnell, who has done so much for the collections of the British Museum.

Zonotrichia Macconnelli, sp. n.

Similis *Z. pileatæ*, sed major, obscurior, uropygio et hypochondriis saturatè griseis, nec brunneis distinguenda. Long. tot. 5·8 poll., culm. 0·6, alæ 2·8, caudæ 2·35, tarsi 0·9.

Hab. Summit of Mount Roraima.

EXPLANATION OF PLATE 4.

Fig. 1. *Zonotrichia Macconnelli.*
2. „ *pileata.*

REPTILES.

By G. A. Boulenger, F.R.S.

(Plate 5. figs. 1–2.)

1. Anolis fusco-auratus, D'Orb.

This and most of the following Reptiles and Batrachians were obtained at the base of the mountain, at an altitude of about 3500 feet. *Prionodactylus leucostictus* and *Oreophrynella Quelchii* are from the summit (8600 feet).

2. Centropyx calcaratus, Spix.

3. Centropyx striatus, Daud.

4. Neusticurus rudis, sp. n. (Plate 5. figs. 1–1 *c*.)

Snout rather short, pointed; canthus rostralis strong; ear-opening as large as the eye-opening; transparent disk of lower eyelid composed of five pieces. Rostral rather large, the portion visible from above nearly half as long as the frontonasal, which is longer than broad; a pair of præfrontals; a single frontal; a pair of frontoparietals, followed by five shields in a row; occipital region covered with small irregular shields; three

large supraoculars, preceded by a small fourth and two or three granules; nostril pierced in a single nasal, which, like the loreals and suboculars, is in contact with the upper labials; latter, seven in number, fourth largest; four lower labials; chin-shields, one anterior and two pairs. Gular scales smooth, smallest on a zone connecting the ears; collar bordered by six plates. Nape and back covered with small keeled scales intermixed with large, oval, sharply keeled tubercles, disposed very irregularly, but avoiding the vertebral line; smaller tubercles on the sides. Ventral plates rounded posteriorly, imbricate, in 8 or 10 longitudinal and 28 transverse series; the plates of the four median rows subequal, about as long as broad. Three slightly enlarged præanal plates, forming a triangle. 18–20 femoral pores. Tail feebly compressed, with the pair of dorsal keels, formed by enlarged tubercles, feebly developed. Uniform blackish brown above, whitish beneath.

Total length	183 millim.	From end of snout to vent	59 millim.
Head	14 „	Fore limb	19 „
Width of head	8·5 „	Hind limb	27 „
From end of snout to fore limb	23 „	Tail	124 „

A single specimen (♂) from the foot of Mt. Roraima, 3500 feet.

5. Prionodactylus leucostictus, sp. n. (Plate 5. figs. 2–2*c*.)

Snout short, obtusely pointed; ear-opening a little smaller than the eye-opening. Frontonasal single, a little broader than long; præfrontals well developed, forming a median suture; interparietal large, hexagonal, larger than the parietals; two pairs of occipitals; four supraoculars; nostril pierced in a single nasal; no loreal; six upper and five lower labials; chin-shields very large, one anterior and four pairs, the first two forming a suture, the two others separated on the median line by granules; two longitudinal rows of large transverse gular shields; five collar-shields. Dorsal scales hexagonal, strongly keeled; lateral scales small, roundish, smooth; 26 scales, including the ventrals, round the middle of the body; 29 scales from occiput to base of tail. Ventrals large, in 8 longitudinal and 19 transverse series. Four large præanal shields, forming a cross. 6 femoral pores on each side (♀). Tail above with hexagonal keeled scales, beneath with tetragonal smooth scales. Black above and beneath; each scale or shield with one to three white dots, these dots larger on the ventral shields; chin white.

Total length	127 millim.	From end of snout to vent	50 millim.
Head	10 „	Fore limb	13 „
Width of head	6 „	Hind limb	19 „
From end of snout to fore limb	19 „	Tail	77 „

A single specimen (♀) from the summit of Mt. Roraima, 8600 feet.

6. Lachesis lanceolatus, Lacép.

BATRACHIANS.

By G. A. Boulenger, F.R.S.

(Plate 5. figs. 3–6.)

1. Oreophrynella Quelchii, Blgr. (Plate 5. fig. 3.)

This tiny toad was described by me as the type of a new genus in 1895 (Ann. & Mag. N. H. [6] xvi. pp. 125 & 522) from specimens collected on the summit of Mt. Roraima by Messrs. Quelch and McConnell. Numerous specimens have since been obtained at the same altitude (8500–8600 feet).

I have now the pleasure of describing a second species of the same genus, from the base of the mountain.

2. Oreophrynella Macconnelli, sp. n. (Plate 5. fig. 4.)

Closely allied to *O. Quelchii*, but distinguished by the more prominent snout, projecting much beyond the mouth, and by the greater distal expansion of the digits, which end in distinct truncated disks. Interorbital space broader than the upper eyelid. First toe much longer than second, as long as fourth; no distinct subarticular or metatarsal tubercles; the first and second toes appear to be opposable to the fourth and fifth, both fascicles being bound by the thick integument, and the third toe, which is the shortest, being free between them. The tarso-metatarsal articulation reaches the eye. Upper parts covered with small, smooth, feebly prominent warts; lower parts with flat granules. Olive-brown above, with lighter marblings, and a series of small yellowish spots, forming a line on each side of the back from the eye to the groin, continued obliquely across the upper surface of the femur; upper lip yellowish, with two dark brown bars below the eye; lower parts whitish.

From snout to vent 22 millim.

A single specimen from the base of Mt. Roraima, 3500 feet.

Otophryne, g. n. *Engystomatidarum.*

Pupil round. Tongue large, oval, truncate and free behind; no teeth on the palate; two denticulated dermal ridges in front of the pharynx. Tympanum very distinct. Fingers free, toes webbed at the base, the tips merely swollen. Outer metatarsals united by the integument. Precoracoid present, weak; sternum cartilaginous. Sacral diapophyses rather strongly dilated *.

3. Otophryne robusta, sp. n. (Plate 5. figs. 5, 5 *a*.)

Habit stout; head rather small. Snout short, pointed, obliquely truncated at the end and projecting beyond the mouth, which is inferior, well within the lines of the canthi rostrales; nostril equally distant from the eye and the end of the snout; eye rather small, little prominent; interorbital space nearly twice as broad as the upper eyelid; tympanum very large, close to the eye and once and a half its diameter. Fingers short,

* Osteological characters ascertained by means of a sciagraph kindly prepared by Messrs. Gardiner and Green.

swollen at the end, first nearly as long as but not reaching so far as second. Toes very short, depressed, swollen at the end, webbed at the base, the web continued as a fringe along the sides; no distinct subarticular or metatarsal tubercles. The tarso-metatarsal articulation reaches the tympanum; tibia as long as the foot, two-fifths length of head and body. Skin thick, perfectly smooth, shiny on the upper parts; a strong fold from the eye to the insertion of the thigh. Blackish brown above; groin and hinder side of thighs orange, spotted with black; throat and breast dark brown; belly and lower surface of limbs whitish with some brown dots.

From snout to vent 53 millim.

A single specimen from the foot of Mt. Roraima, 3500 feet.

4. HYLODES MARMORATUS, sp. n. (Plate 5. fig. 6.)

Tongue circular, entire; vomerine teeth in two very small oblique groups behind the level of the choanæ. Head a little longer than broad; snout rounded, not prominent, as long as the diameter of the orbit, with obtuse canthus rostralis and concave loreal region; nostril much nearer the tip of the snout than the eye; interorbital space nearly as broad as the upper eyelid; tympanum distinct, one-fourth the diameter of the eye. Digits moderately elongate, with well-developed disks, which are as large as the tympanum, and strong subarticular tubercles; first finger shorter than second; toes quite free; a small, oval, inner metatarsal tubercle. The tibio-tarsal articulation reaches between the eye and the nostril; tibia half the length of head and body. Skin smooth above, with feeble oblique glandular ridges on the occiput; belly granular. Grey-brown above, with brown, dark-edged marblings on the head and body and cross-bars on the limbs; dark bars radiating from the eye; grey-brown beneath.

From snout to vent 19 millim.

A single specimen from the foot of Mt. Roraima, 3500 feet.

5. HYLA ALBOMARGINATA, Spix.

EXPLANATION OF PLATE 5.

Fig. 1.	*Neusticurus rudis.*	Upper view.
1 *a*.	„ „	Lower view.
1 *b*.	„ „	Upper view of head, ×2.
1 *c*.	„ „	Lower view of head and neck, ×2.
2.	*Prionodactylus leucostictus.*	Upper view.
2 *a*.	„ „	Lower view.
2 *b*.	„ „	Upper view of head, ×2.
2 *c*.	„ „	Lower view of head and neck, ×2.
3.	*Oreophrynella Quelchii.*	Upper and lower views.
4.	„ *Macconnelli.*	Upper and lower views.
5.	*Otophryne robusta.*	Upper view.
5 *a*.	„ „	Open mouth.
6.	*Hylodes marmoratus.*	Upper view.

CRUSTACEA.

By Dr. J. G. DE MAN.

(Plate 6.)

PALÆMON (MACROBRACHIUM) QUELCHI, sp. n.

Thirty-seven specimens, only five or six of which are full-grown, were collected in the Upper Mazaruni river at an altitude of 2500 feet, and one young specimen was captured at an altitude of 3500 feet on the Mt. Roraima range. Amongst the former is but one ova-bearing female, the rest are both males and young females, the full-grown specimens being all males.

This pretty species, that I have the pleasure to name after Mr. J. J. Quelch, is apparently closely allied to *Pal. potiuna*, F. Müller, from the Itajahy river, State of Santa Catharina, and to *Pal. Iheringi*, Ortm., from the State of São Paulo, both in the south of Brazil; but it is no doubt different, the second legs presenting characters *intermediate* between those of the two quoted species. *Palæmon Quelchi* is evidently their representative in British Guiana. One full-grown specimen only is still provided with both legs of the second pair, in the others one of them is lost. The ova-bearing female has also lost these legs, and in the numerous young individuals one leg of this pair or even both are often wanting.

Palæmon Quelchi belongs to the species of *small* size, the adult individuals measuring only 55 millim. from tip of rostrum to the extremity of the telson. Examined under a rather strong lens the cephalothorax presents a fine and rare punctation, on which one observes a short pubescence, for the rest it appears smooth. The rostrum (Pl. 6. figs. 1–4), vertically moderately deep, is rather short, reaching only the end of the antennulary peduncles or even only the middle of their terminal joint, so that it does not extend to the end of the antennal scales. The upper margin, usually very slightly convex above the eyes, gradually descends downwards and carries *seven*, *eight*, or *nine* low, rather equidistant teeth, the first *two* of which commonly stand on the cephalothorax, but often only *one* tooth stands on it, the second being placed above the orbital margin. The lower margin is usually armed with *two* teeth, often, however, with *one* only. The formulæ for 34 specimens are the following:—

5 specimens $\frac{9}{2}$; 4 specimens $\frac{9}{1}$; 9 specimens $\frac{8}{2}$;
5 „ $\frac{8}{1}$; 5 „ $\frac{7}{2}$; 5 „ $\frac{7}{1}$;
1 specimen $\frac{6}{2}$.

The hepatic spine is small and placed below and posterior to the somewhat larger antennal one. The apex of the telson, as usual shorter than the lateral appendages and the flattened upper surface of which bears the two ordinary pairs of small spinules, is triangular with a quite short median spine; the inner spinules are somewhat longer than the median point and considerably longer than the outer ones.

The free end of the antennal scales is obtusely angulated internally and reaches a little

further forward than the short spine at the extremity of the external margin. The shortest of the three antennular flagella is distinctly serrate and exceeds the free end of the antennal scales by its whole length. The external maxillipedes project with their terminal joint beyond the peduncles of the outer antennæ.

The first pair of legs exceed, in the full-grown male, the antennal scales by two fifth parts of their carpus; the latter is once and two-thirds as long as the hand, the fingers very slightly longer than the palm.

The second legs are considerably stouter and longer than the first and somewhat unequal. In the largest male, which is 54 millim. long, both legs (Pl. **6.** figs. 5 & 6) are slightly longer than the body and both exceed the antennal scales by the whole length of the carpus. The cylindrical merus widens slightly towards its distal end. The carpus of both legs appears at first sight just as long as the merus, but measured exactly it appears always *very slightly longer than it.* The carpus, quite narrow at base and here much narrower than the distal end of the preceding joint, regularly widens towards its distal extremity, so that it has a conical shape and its diameter at the distal end is a little broader than that of the merus. *The carpus appears, therefore, two and a half to three times as long as thick at its distal extremity. The chela is two and a half times as long as the carpus, and in both legs the palm measures almost two-thirds the length of the whole hand.* The palm of the larger chela is *distinctly broader* than the widened distal end of the carpus, being a little more than once and a half as broad; the palm is about three times as long as broad, and its width measures almost one-fourth the length of the whole hand. The palmar portion of the hand appears *slightly broader than thick*, the proportion being as 6 : 5; it is everywhere rounded both on the upper and lower surface and on the sides. When the chela is looked at from above, the outer margin of the palm appears straight, but the inner slightly convex, and the inner border of the chela is a little concave at the base of the fingers. The pointed fingers leave, when closed, a narrow interspace between them, in the middle about as broad as the fingers themselves; the latter are almost cylindrical. The immobile finger is nearly straight and tapers but very slightly towards the tip; the dactylus, however, is somewhat curved and tapers more regularly. Each finger is armed with a strong conical tooth; that of the index is placed just in the middle of the finger, that of the dactylus a little beyond it; three much smaller obtuse teeth are observed between each conical tooth and the articulation, and the third of these small teeth is double. On each finger a sharp cutting-edge runs between the conical tooth and the tip.

The smaller chela (fig. 6) bears a close resemblance to the other, but the difference between its width and its height or thickness is still smaller, so that the palm appears almost cylindrical and but slightly broader than the carpus. The fingers are regularly tapering, the dactylus is less curved, and the interspace between both is small, only half as broad in the middle as the fingers. The toothing is about the same, but the dactylus bears six small obtuse teeth between the large conical tooth and the articulation.

In the younger individuals the fingers are comparatively longer, so in a young male, long. 36 mm., the palm is $4\frac{1}{2}$ mm, the fingers 4 mm. long; the former, $1\frac{2}{5}$ mm. broad, is three times broader than long and 1 mm. thick.

Fig. 7 represents the second leg of a female, long. 42 mm., devoid of eggs. The merus measures 5 mm., the carpus $5\frac{1}{2}$, the hand $11\frac{1}{4}$ mm., of which the palm occupies 6 mm. The palm is $1\frac{3}{4}$ mm. broad, the carpus at its distal extremity $1\frac{2}{5}$ mm. The toothing of the fingers, figured fig. 7 *a*, appears in this young individual still very feeble, the dactylus showing only three teeth, the index also, but these are less prominent, more rounded.

The second legs of these young individuals bear a close resemblance to *Pal. potiuna*, F. Müll. (*vide* Ortmann, 'Os Camarões da agua doce da America do Sul,' S. Paulo, 1897, est. i. fig. 9), but there can be no doubt that this species is a different one, for this resemblance is only exhibited *by quite young individuals.*

The second legs are on all their joints roughened by small thorny points, that are crowded and numerous on their outer margin, less numerous on the rest of their surface, and those of the lower surface and of the inner margin are distinctly somewhat longer; these legs are glabrous, devoid of hair, except a rare short pubescence, only perceptible under a lens.

The ambulatory legs of the third pair project with a third of their propodites beyond the antennal scales, their carpopodites reaching as far forward as the peduncles of the outer antennæ; the legs of the fifth pair finally extend as far forward as the external maxillipeds, but do not reach the free end of the antennal scales. The ambulatory legs are rather slender. So are the meropodites of the third pair of the largest male 8 mm. long, 1·25 mm. thick, the propodites 7·9 mm. long and 0·84 mm. thick, so that the former are little more than six, the latter nine to ten times as long as broad; for the meropodites of the fifth legs (Pl. 6. fig. 8) these numbers are 7·5 mm. and 1 mm., for the propodites 7·9 mm. and 0·7 mm., so that the meropodites are seven to eight, the propodites eleven times as long as broad. The dactylopodites are short, measuring about one-fourth the length of the propodites. The posterior margin of the propodites bears two rows of spinules, so that in the third legs there are nine or ten spinules in the outer and six or seven in the inner row. The ambulatory legs are a little hairy, but for the rest quite smooth: the hairs are very short and fine, and arranged partly two and two in longitudinal rows; so that one row runs along the posterior margin of the meropodites. The eggs are *few in number but large*, having a diameter of $2\frac{1}{2}$ mm. Concerning the single female carrying these eggs, which is 38 mm. long from tip of rostrum to the extremity of the telson, the following may be remarked:—The rostrum (fig. 2) reaches to the middle of the terminal joint of the antennulary peduncles; the upper margin that descends obliquely downward bears seven teeth, the second of which is placed above the orbital margin; the lower border is armed with two teeth, the interspaces are as usual ciliated. The external maxillipeds exceed the antennal peduncle only by half their terminal joint. The first legs project only with the hands beyond the free end of the antennal scales; the hands measure just two-thirds the length of the carpus. The legs of the third pair reach to the end of the antennal scales, those of the fifth to the end of the antennal peduncles. The meropodites of the third pair are $4\frac{1}{4}$ mm. long and $\frac{3}{4}$ mm. broad; the propodites are 4 mm. long and $\frac{1}{2}$ mm. broad.

Palæmon potiuna, F. Müller, differs at first sight by the chelæ of the second legs

having *the fingers as long or even*, according to Ortmann's figure, *slightly longer than the palm.* *Palæmon Iheringi*, Ortm. (*l. c.* p. 211, est. i. figs. 7 e, 8) is apparently also different. The carpus of the second legs, indeed, does not gradually and regularly widen towards its distal end, but suddenly, so that the form is different.

Measurements in millimetres.

	No. 1.		No. 2.	No. 3.	No. 4.	No. 5.	No. 6.
Length from tip of rostrum to extremity of abdomen	54		52	48	47	45	
	Left.	Right.	Left shorter.				
„ of second legs	58	61	46	36	43	32	39
„ of merus	$10\frac{1}{2}$	$10\frac{1}{2}$	$8\frac{1}{2}$	6	$7\frac{1}{2}$	$5\frac{1}{2}$	7
„ of carpus	$10\frac{3}{4}$	11	9	$6\frac{1}{2}$	$7\frac{1}{2}$	6	$7\frac{1}{2}$
Width of the carpus at the distal end	4	4	$3\frac{1}{5}$	$2\frac{1}{5}$	3	$2\frac{1}{5}$	$2\frac{3}{4}$
Length of chela	25	$28\frac{1}{2}$	$18\frac{1}{2}$	$14\frac{1}{2}$	$20\frac{1}{2}$	$12\frac{1}{2}$	18
„ of palm	$15\frac{1}{2}$	18	11	$8\frac{1}{4}$	13	7	10
Breadth „	$4\frac{2}{3}$	$6\frac{2}{5}$	$3\frac{1}{2}$	$2\frac{2}{3}$	$4\frac{1}{2}$	$2\frac{2}{5}$	$3\frac{2}{5}$
Height „	4	$5\frac{1}{2}$	3	$2\frac{1}{4}$	$3\frac{3}{4}$	2	$2\frac{3}{4}$

No. 6 is a detached leg.

EXPLANATION OF PLATE 6.

Figs. 1–4. *Palæmon Quelchi*, sp. n. Anterior portion of carapace in four examples, × 3 : Fig. 1 of the largest male, long. 54 mm. ; Fig. 2 of the ova-bearing female, long. 38 mm. ; Fig. 3 of another male, long. 52 mm. ; Fig. 4 of a young male, long. 35 mm.

Fig. 5, right, and Fig. 6, left leg of the second pair of the largest male, long. 54 mm., × 2.

Fig. 7. One of the legs of the second pair of a female without eggs, long. 42 mm., × 2; 7 *a*, toothing of both fingers of this specimen, × 25.

Fig. 8. Fifth leg of the largest male, long. 54 mm., × 5.

List of the known Species of the Genus Palæmon, *Fabr. s. s., May* 1900.

[The species printed in *italics* inhabit America and the West Coast of Africa. The locality indicated as the habitat is in every case taken from the first published description of the species. Of those marked with an asterisk the descriptions were not accessible to me when preparing this list.]

1. acanthosoma, sp. n. (?) Nob. Katau, New Guinea.
2. *acanthurus*, Wgm. Coast of Brazil.
3. acutirostris, Dana. Sandwich Islands.
4. *africanus*, Bate. Tambo river.—According to von Martens, 1869, = *Gaudichaudii*, M.-E. The Tambo river, mentioned by Spence Bate as the habitat of his species, would, according to von Martens, be situated in Peru! Confer also: Miers, 'On a Collection of Crustacea from South America,' 1877.
5. *africanus*, Kingsl. West Coast of Africa.—Thallwitz, 1891, supposes this species to be identical with *Pal. macrobrachion*, Herkl.

6. Alphonsianus, Hffm. Réunion.—This species is identical with *Pal. dispar*, Marts. Confer: de Man, 'Crustacea collected by Max Weber,' 1892, p. 437.
7. altifrons, Hend. Delhi; River Jumna; Lahore.
8. *amazonicus*, Hell. Amazon river.
9. *americanus*, Bate. Lake of Amatitlan, Guatemala.—According to von Martens, 1869, = *brachydactylus*, Wgm., and according to Miers, 1888, = *jamaicensis*, Hbst.
10. *Appuni*, Marts. Porto Cabello, Venezuela.
    „ var. *æquatorialis*, Ortm. Ecuador.
11. asper, Stps. In fresh water and in the river near Canton, China.—This species is identical with nipponensis, de Haan.
12. asperulus, Marts. Shanghai.
13. Audouini, Hell. Red Sea.
14. Audouini, Bate. Off New Zealand.
15. australis, Ortm. = sp., de M., 1887? Queensland.—Ortmann, 'Decapoden-Krebse des Strassburger Museums,' p. 708.
16. *aztecus*, Sauss. Gulf of Mexico.
17. bariensis, de M. Fresh water, Flores.
18. boninensis, Stps. Bonin Islands, in hill-streams.
19. *Borellii*, Nob. San Lorenzo (Jujuy); San Luis.
20. *brachydactylus*, Wgm. East coast of Mexico.
21. *brasiliensis*, Hell. Camaroes, Brazil, fresh water.—According to Ortmann a locality of this name does not exist in Brazil. Camaroes would be the Spanish name of these prawns! ('Decapoden-Krebse des Strassburger Museums,' p. 711.)
22. brevicarpus, de Haan. Japan.—Confer: de Man, in Max Weber's 'Crustacea,' 1892, p. 418.
23. brevimanus, Fabr. India.
24. *cæmentarius*, Poepp. Mouth of the River Aconcagua.—This species is identical with *Bithynis longimana*, Phil. Confer: 'Zoologischer Anzeiger,' 1894, p. 266; von Martens, 'Ueber einige ostasiatische Süsswasserthiere,' 1868, p. 65; and Miers, *l. c.* 1877, p. 662. According to Miers it is a variety of *Pal. Gaudichaudii*, M.-E.
25. callirrhoë, de M. Mandai river, Ketoengau river (Borneo).
26. carcinus, Fabr. India †.
27. *consobrinus*, Sauss. Gulf of Mexico, off Vera Cruz.
28. coromandelianus, Fabr. India.
29. Danæ, Hell. Sydney.
30. Dayanus, Hend. Orissa, Calcutta, Lahore.
31. *dasydactylus*, Streets. Tide-water of the Coatzacoalcos river, Isthmus of Tehuantepec.—According to Ortmann (*l. c.*) = *mexicanus*, Sauss.
32. *Desausuri*, Hell. New Granada.
33. dispar, Marts. Isle of Adenare.
34. dolichodactylus, Hilgd. Mozambique.
35. dulcis, n. sp.?, Thallw. North Celebes.
36. elegans, de M. Sinagar, Buitenzorg, Java.
37. endehensis, de M. Flores.
38. *ensiculus*, S. Sm. Pará.
39. equidens, Dana. In the sea near Singapore.
40. esculentus, Thallw. North Celebes.

† Fabricius indicates the rivers of America as the habitat of this species—of course, wrongly.

41. curyrhynchus, Ortm., = latimanus, Marts. Fiji Islands.—Confer: de Man, in Max Weber's 'Crustacea,' 1892, p. 482.
42. *faustinus*, Sauss. Antilles.
43. *fluvialis*, Streets. Coatzacoalcos river, among the Cordilleras.
44. *forceps*, M.-E. Rio de Janeiro.—According to von Martens, 1869, = *acanthurus*, Wgm.
45. formosensis, Bate. River Tamsuy, Formosa.
46. gangeticum, Bate. Patna, India.
47. *Gaudichaudii*, M.-E. Chili.—Confer: von Martens, 'Ueber einige ostasiatische Süsswasserthiere,' 1868, p. 65.
48. gracilimanus, Rand. Sandwich Islands.
*49. gracilirostris, Miers. Upolu, Samoa Islands.
50. grandimanus, Rand. Sandwich Islands.—Confer: von Martens, *l. c.* 1868, p. 45.
51. *heterochirus*, Wgm. East coast of Mexico.
52. Hildebrandti, Hilgd. Madagascar.
53. Hilgendorfi, Cout. East coast of Madagascar, region of large forests.
*54. hirtimanus, Oliv.
*55. hispidus, Oliv.—According to Heller, 'Synopsis der im rothen Meere vorkommenden Crustaceen,' 1861, this species occurs in the Red Sea.
56. Horstii, de M. Celebes, fresh water.
57. Idæ, Hell. Borneo.
„ var. idella, Hilgd. Pond near Matomondo, Ungúu; Usaramo (German East Africa).
„ var. mammillodactylus, nov. var. ?, Thallw. North Celebes, Luzon.
„ var. subinermis, Nob. St. Joseph river, Innawi (British New Guinea).
58. *Iheringi*, Ortm. State of São Paulo, Brazil (fresh water).
59. *jamaicensis*, Hbst. Rivers of Jamaica.
60. japonicus, de Haan. Japan.
61. javanicus, Hell. Java.
62. *Jelskii*, Miers. Guiana (Oyapok).
63. Lamarrei, M.-E. Coast of Bengal.
64. *laminatus*, Gollm., = *jamaicensis*, juv.? Caracas.—Confer: von Martens, *l. c.* 1869, p. 24.
65. lampropus, de M. Celebes, Timor (fresh water).
66. lanceifrons, Dana. Luzon.
67. lar, Fabr. India.
68. latidactylus, Thallw. North Celebes.
69. latimanus, Marts. Philippines (Isle of Samar).
70. lepidactyloides, de M. Flores (fresh water).—Confer: de Man, in 'Notes from the Leyden Museum,' vol. xv. p. 308.—According to Coutière = lepidactylus, Hilgd.
71. lepidactylus, Hilgd. Mozambique (Quellimane, Tette).
72. longidigitum, Bate. Habitat unknown.
73. longimanus, Fabr. East India.
74. longimanus, Hffm., = ornatus, Oliv. Réunion.—Confer: de Man, in 'Notes from the Leyden Museum,' vol. i. p. 172.
*75. *longimanus*, Phil., = *cæmentarius*, Poepp. Chili (La Ligua river). — Confer: Philippi, in 'Zoologischer Anzeiger,' 1894, p. 266.
76. longipes, de Haan. Japan.
77. *macrobrachion*, Herkl. West Coast of Africa (Boutry, near Dixcove).
78. madagascariensis, Hffm. Nossy-Faly.
*79. Malcolmsonii, M.-E. Nagpore.—Confer: Henderson, 'A Contribution to Indian Carcinology,' 1893, p. 444.

80. Malliardi, Rchtrs. Mauritius (Creole river, Black river).
81. Mariæ, Cout. River Ivaloina, near Tamatave (Madagascar).
82. mayottensis, Hffm. Mayotte, Nossy-Faly.—Confer: de Man, in 'Notes from the Leyden Museum,' vol. i. 1879, p. 173, where it is proved to be a local variety of ornatus, Oliv.
83. *mexicanus*, Sauss. Coast of Mexico.
84. modestus, de M. Flores, fresh water.
85. *Montezumæ*, Sauss. Gulf of Mexico, off Vera Cruz.
86. Moorei, Calman. Lake Tanganyika.
87. mossambicus, Hilgd. Mozambique (Quellimane).—According to Coutière = dispar, Marts.
88. multidens, Cout. River Kotofotsy, arm of the Onilahy, Madagascar.
89. *Natterері*, Hell. Brazil (Rio Negro).
*90. niloticus, Roux. Nile.—Confer: von Martens, *l. c.* 1868, p. 66.
91. nipponensis, de Haan. Japan.
*92. *ohionis*, S. Sm. Ohio, Mississippi.
93. *Olfersii*, Wgm. Coast of Brazil.—Confer: Greeff, in 'Sitzungsber. Gesells. z. Beförderung der gesammten Naturw. zu Marburg,' 1882, p. 30.
*94. ornatus, Oliv., = lar, Fabr.
95. parvus, Hffm. Nossy-Faly.
96. Patsa, Cout. River Mahanara (east coast of Madagascar); arm of the River Onilahy (west coast of the same island).
97. *paucidens*, Hilgd. Togo Country.
98. Petersii, Hilgd. Mozambique (Tette).
99. pilimanus, de M. Sumatra.
,, var. leptodactylus, de M. Java (Buitenzorg).
100. placidulus, de M. Saleyer, Celebes, Flores, Timor, fresh water.—Confer: de Man, in 'Notes from the Leyden Museum,' vol. xv.
101. placidus, de M. Sumatra.
102. *potiporanga*, F. Müll. Itajahy river.
103. *potiuna*, F. Müll. Itajahy river.
104. *punctatus*, Rand., = *jamaicensis*, Hbst. East Indies?—Confer: Kingsley, in 'Bull. Essex Institute,' vol. xiv. 1883, and Miers, in E. Whymper, Supplementary Appendix to 'Travels amongst the Great Andes of the Equator,' 1888.
105. *Quelchi*, de M. Upper Mazaruni river, Mount Roraima (British Guiana).
106. reunionnensis, Hffm. Réunion.—Confer: de Man, in Max Weber's 'Crustacea,' 1892, p. 454.
107. Ritsemæ, de M. Atjeh.
108. Rosenbergii, de M. Andaï, New Guinea.
109. ruber, Hess., = ornatus, Oliv. Fiji Islands.—Confer: Ortmann, 'Decapoden-Krebse des Strassburger Museums,' p. 705.
110. rudis, Hell. Ceylon.
111. Savignyi, Bate. Bermuda Islands.
112. scabriculus, Hell. Ceylon.
113. *sexdentatus*, Streets. Tide-water of the Coatzacoalcos river, Isthmus of Tehuantepec.—According to Ortmann ('Decapoden-Krebse des Strassburger Museums,' p. 711) this species is identical with *mexicanus*, Sauss.
114. sinensis, Hell., = nipponensis, de Haan. Shanghai.—Confer: de Man, in 'Notes from the Leyden Museum,' vol. i.
115. singalangensis, Nob. Aier Mantcior, near Mount Singalang (Sumatra).
116. sintangensis, de M. Sintang, Borneo.

117. spectabilis, Hell., = lar, Fabr. Tahiti.—Confer: de Man, in Max Weber's 'Crustacea,' p. 445.
118. *spinimanus*, M.-E. Antilles and coast of Brazil.—According to von Martens, *l. c.* 1869, = Olfersii, Wgm.
119. sp., de Man, in Zool. Jahrbücher, ii. 1887. Sydney.
120. sp., de Man, in Archiv für Naturg. 1888, p. 557. Amboina.
121. sp. (Macrobrachium ?), de Man, in Max Weber's 'Crustacea,' 1892, p. 488. Celebes, fresh water.
122. sp., Miers, in Ann. & Mag. Nat. Hist. ser. 5, v. p. 384 (1880). Java.
123. sp., Thallwitz, 'Decapoden-Studien,' 1891, p. 19. North Celebes.
124. sundaicus, Hell. Java.
——, var. bataviana, de M. Batavia.
——, var. brachydactyla, Nob. Amboina.
——, var. de Mani, Nob. Amboina.—According to Nobili the last-named variety is identical with that described by de Man in Zoolog. Jahrbücher, ix. Abth. f. System. p. 783, fig. 72.
125. superbus, Hell. Shanghai.
126. *tenellus*, S. Sm. Polvon, Occidental Department of Nicaragua.
127. tranquebaricus, Fabr. East India.
128. Trompii, de M. Ketoengau river, Mandai river, Sintang (Borneo).
129. ustulatus, Nob. Rigo, British New Guinea.
130. vagus, Hell., = lar, Fabr. Amboina.—Confer: de Man, in 'Notes from the Leyden Museum,' vol. i.
131. *Vollenhovenii*, Herkl. Coast of Guinea.—Confer: de Man, in 'Notes from the Leyden Museum,' vol. i. 1879.
132. Weberi, de M. Celebes, fresh water.

MYRIOPODA AND ARACHNIDA.

By R. I. Pocock.

Class *DIPLOPODA*. (Millipedes.)

Family POLYDESMIDÆ.

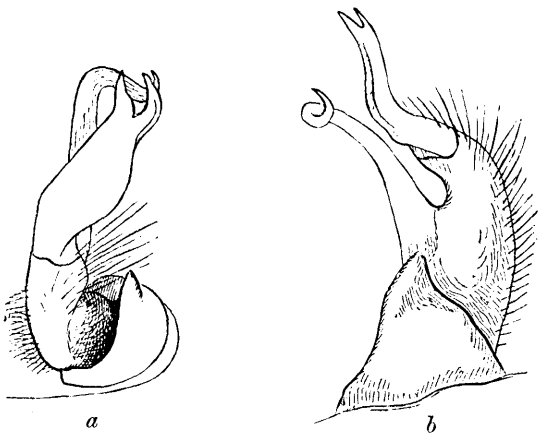
Genus Odontopeltis, Pocock.

Odontopeltis Macconnelli, sp. n.

♂. *Colour* black or very dark blackish brown, with the external half of the keel bright or dull red or yellowish brown, and, at least on the anterior terga, a median transverse yellowish or red patch along the posterior border; caudal process not pale; antennæ blackish; legs blackish brown or deep reddish brown, sterna brownish yellow. *Dorsal integument* smooth and shining or finely coriaceous; *keels* horizontal, with smooth edges, the posterior margin transverse and in the same straight line as the posterior border of the tergum, as far back as the eleventh or twelfth somite; the posterior angle not spinate, mostly acutely angled, rarely approaching a right angle; the anterior angle widely rounded and obtuse. *Caudal process* triangular, narrowly truncate posteriorly.

Anal sternite triangularly pointed; sternum of eighteenth somite wider behind than the length of the coxæ of the last pair of legs. Copulatory limbs as in fig. 1, the basal segment armed externally with a large downwardly-directed conical process; second segment furnished with numerous thickly-set short hairs on the inner side at the base and externally with many long bristles; giving off distally two long processes, an upper and a lower, directed obliquely forwards and downwards; the upper process runs forwards

Fig. 1.



Odontopeltis Macconnelli, sp. n.

a. Lower view of left copulatory leg. *b*. Lateral view of external surface of right copulatory leg.

and downwards with a slight curve, then turns sharply externally, and ends in a sharp tip curving upwards and forwards; the inferior process is laminate, but narrower at base and distally than in middle, with a slight sigmoid flexure when seen from the side; seen from below its inner edge is directed straight forwards in its basal third, then obliquely forwards and outwards, the outer edge being convex; distally the process ends in two sharp prongs—an inner straighter and an outer semicircularly curved forwards.

♀. Stouter than male, with smaller keels.

♂. Total length 43 mm.; width 6.

♀. „ 43 „ ; „ 7.

Loc. Summit of Roraima, 8600 feet alt.

Genus Euryurus, C. Koch.

Euryurus atratus, sp. n.

♀. *Colour*: dorsal area a uniform black, ventral area a little paler. *Head* with a smooth, oval, pale-coloured prominence in the middle line just between and below the antennæ; a curved row of six setal pores above the labrum. *Dorsal area* smooth and polished. *Keel* of second somite laterally emarginate, leaving the anterior and posterior angle acute and subdentate; lateral margin of keel of third and fourth somites with a notch behind the anterior angle, which is thus subdentate; remaining keels with posterior margin finely serrulate, concave; angle acute and becoming more and more acute and produced in the posterior region of the body; lateral margin of keels even, slightly

subsinuate in front of the pores; anterior angle convexly rounded and on the anterior somites slightly prominent. *Caudal process* narrowly oval posteriorly. *Anal sternite* distinctly bituberculate.

Total length 41 mm.; width 6·7.

Loc. Base of Mount Roraima (3500 feet).

Resembling in colour *E. fumigatus*, Peters, from Bogota (MB. Ak. Berlin, 1864, p. 624), but differing from Colombian specimens in the British Museum that I have referred to *fumigatus* in having the lateral border of the keels of the second tergite emarginate, the keels larger, and the caudal process narrower towards the extremity.

Class *ARACHNIDA*.

Order ARANEÆ. (Spiders.)

Family BARYCHELIDÆ.

Genus Cyrtogrammomma, Poc.

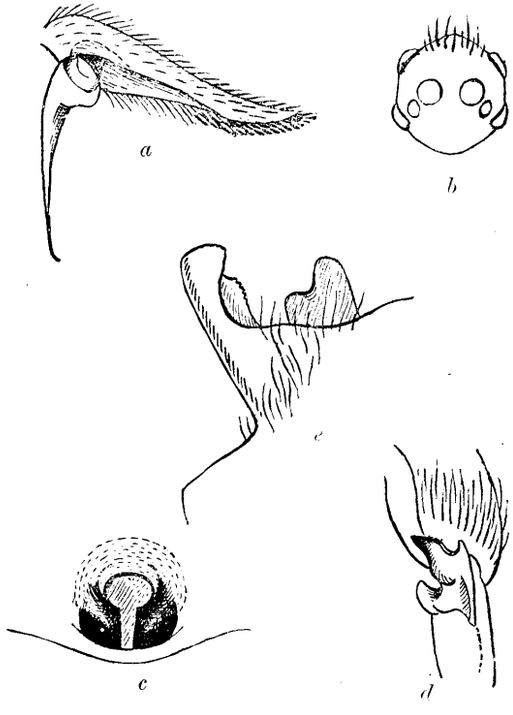
Cyrtogrammomma monticola, Poc.

Cyrtogrammomma monticola, Poc. Ann. & Mag. Nat. Hist. (6) xvi. pp. 139–140 (1895).

Loc. Summit of Mt. Roraima (8600 feet).

This genus and species were based upon a single female specimen. Additional examples containing adults of both sexes enable me to supplement the original

Fig. 2.



a. Extremity of palpus of male of *Cyrtogrammomma monticola*. *b*. Eyes of ditto. *c*. Vulva of *Anyphæna Quelchii*. *d*. Tibial spur of palpus of same. *e*. Tibial spur of palpus of *Trechalea Macconnelli*.

description by stating the characters of the male and some additional features of the female.

♂. *Colour*, as in ♀, a deep blackish brown; hairs mostly olive-black, those on the carapace, especially laterally, shining golden red, extremities of protarsi on upperside also paler. *Carapace* flatter than in ♀, its length equal to patella + three-fourths of the tibia of the first and fourth leg, barely equal to protarsus of fourth. *Labium* (in ♂ and ♀) armed with a row of cusps varying in number from about four to nine; maxillæ also internally cuspidate. *Palpus* in ♂ with the tibia almost as in ♀, but armed on the inner side with six or more long strong spines, those at the distal end protecting the palpal organ when lying at rest backwards beneath the tibia; tarsus long, like that of the ♀, but scopulate only in its distal half beneath, excavated posteriorly; spine of palpal organ nearly straight, long, almost as broad at the base as the bulb and tapering away to a fine point. Tibia of first leg without apical spur; tibia of all the legs armed with many long and strong spines: protarsus of first leg armed with two inferior spines at base of scopula, which covers less than the apical half of the segment; protarsus of second armed with three spines, scopula short and scanty as in first leg; protarsi of third and fourth armed with many long and strong spines. (In the ♀ the anterior legs and palpi are armed only with spiniform setæ and the scopulæ extend practically to the base of the protarsi.)

Measurements in millimetres.— ♂. Total length 12; length of carapace 6·5, of 1st leg 23, of 4th leg 26.

Family ANYPHÆNIDÆ.

Genus ANYPHÆNA, Sund.

ANYPHÆNA QUELCHII (Poc.).

Aysha Quelchii, Pocock, Ann. & Mag. Nat. Hist. (6) xvi. pp. 140–142, fig. (1895).

Loc. Roraima (summit, 8600 feet). Adult males and females.

On his previous expedition to Roraima, Mr. Quelch procured the only two specimens of this species, an adult male and an immature female. I take the opportunity of figuring the vulva (fig. 2 *c*) of the adult female and the tibial spur of palpus of the male (fig. 2 *d*).

Family PISAURIDÆ.

Genus TRECHALEA, Thorell.

(= *Triclaria*, C. Koch.)

TRECHALEA MACCONNELLI, sp. n.

Colour. Carapace blackish, with pale lateral border and narrow radiating pale stripes, the intervals between the radiating lines also ornamented with short flavous lines. Clypeus pallid, with a broad dark band on each side, running upwards and inwards from the lateral angle; mandible black, clothed with long yellow hairs, the yellow field

interrupted by dark lines. Legs and palpi blackish banded with pale; femora with about four flavous patches, sometimes fusing together or connected with flavous stripes; patella distally flavous; tibia with median and apical flavous stripe; protarsus with broad but indistinct distal flavous stripe; femora reddish below at the base; sternum and coxæ olive-yellow; upperside of abdomen covered with greyish hairs intermixed with black bristles; black behind, with two bright yellow patches above the spinners; lower side orange-yellow.

Palp with tibial spur as in fig. 2 *e*.

Measurements in millimetres.—Total length 16, carapace 8·5; 1st leg 64, 4th leg 73; tibia of 1st leg 17, of 4th 17.

Loc. Mount Roraima (base, 3500 feet).

This species may be readily recognized by the form of the tibial spur of the palp.

Family ARGIOPIDÆ.

Genus ACROSOMA, Perty.

ACROSOMA SCHRIEBERSII, Perty.

Acrosoma Schriebersii, Perty, Delect. Anim. Artic. p. 194, tab. 38. fig. 9 (1830–34).

Loc. Base of Roraima, 3500 feet.

Genus ARANEUS, Linn.

ARANEUS AUDAX, Blackwall.

Epeira audax, Blackwall, Ann. Mag. Nat. Hist. (3) xi. p. 29 (1863).

Loc. Upper Mazaruni River.

Order SCORPIONES.

Family CHACTIDÆ.

Genus BROTEOCHACTAS, Poc.

Broteochactas and *Hadrurochactas*, Pocock, Ann. Mag. Nat. Hist. (6) xii. pp. 77–78 (1893); id. Journ. Linn. Soc., Zool. xxiv. p. 399 (1893); Kraepelin, MT. Mus. Hamb. xi. pp. 175, 178; id. Das Tierr., Scorp. etc. p. 172 (1899).

Four species referable to this genus have hitherto been discovered, namely:—

1. BROTEOCHACTAS GOLLMERI, Karsch, Mitth. Münch. ent. Ver. 1879, p. 133 (*Chactas*): *nitidus*, Pocock, Journ. Linn. Soc., Zool. xxiv. p. 399, pl. xxix. figs. 7, 7 *a* (1893) (*Broteochactas*).

Loc. Trinidad and Venezuela.

2. BROTEOCHACTAS DELICATUS, Karsch, Mitth. Münch. ent. Ver. 1879, p. 134, ♀ : *opacus*, Karsch, op. cit. p. 134, ♂ (*Chactas*); *panamensis*, Thorell, Bull. Soc. Ent. Ital. xxv. p. 27 (1894) (*Broteus*).

Loc. British Guiana, Colombia, Panama.

3. Broteochactas Sclateri, Pocock, Ann. Mag. Nat. Hist. (6) xii. p. 80 (1893) (*Hadrurochactas*): ? *Schaumii*, Karsch, Z. Naturw. liii. p. 406 (1880); ? *quinquedentatus*, id. op. cit. p. 405 (*Chactas*).

Loc. British Guiana (*W. L. Sclater*).

[Kraepelin (MT. Mus. Hamb. xi. p. 178, 1894, and Das Tierr., Scorp. etc. p. 173, 1899) states that *B. Sclateri* is identical with *B. Schaumii* of Karsch, and possibly with *quinquedentatus* of this latter author, both of which were recorded, though no doubt erroneously, from India. But the presence of only five pectinal teeth in the latter forbids, to my mind, such an opinion. *B. Schaumii*, judging from Kraepelin's description, is closely allied to *B. Sclateri*, but the fact that the third caudal segment is higher than wide in *Schaumii*, and wider than high in the two known examples of *Sclateri*, makes the synonymy doubtful.]

4. Broteochactas parvulus, Pocock, Ann. Mag. Nat. Hist. (6) xix. p. 364 (1897); Kraepelin, Das Tierr., Scorp. etc. p. 174 (1899).

Loc. Amazons, Santarem (*F. O. P. Cambridge*).

The following well-marked new species were discovered by Messrs. McConnell and Quelch :—

Broteochactas granosus, sp. n.

Colour. Carapace, terga, and tail almost black; legs, palpi, and vesicle of tail deep reddish brown, the legs with paler line and spots; fingers black. *Carapace* and *terga* entirely covered with fine close-set granulation; ocular tubercle coarsely punctured; carapace a little longer than the first and second caudal segments, a little shorter than the fifth. *Coxæ* and *sterna* finely punctured, the last sternite weakly and closely granular laterally. *Tail* more than four times the length of the carapace, narrowed posteriorly, the segments nearly parallel-sided: the first wider than long; second slightly longer than wide; fourth not twice as long as wide; fifth a little more than twice as long as wide; intercarinal spaces finely granular; inferior and infero-lateral keels obsolete on segments 1 and 2, scarcely traceable on segment 3, represented on segment 4 by irregularly arranged larger granules; superior and supero-lateral keels weak, weakly granular; inferior surface of fifth coarsely granular between the keels; vesicle granular, narrower than third segment, wider than high.

Chelæ finely granular; upperside of humerus and brachium with coarser granules between the keels; upperside of hand covered with a reticulation of fine granules; inner surface similarly granular; back of hand coriaceous; fingers granular at base. Width of hand equal to length of external keel of hand-back, less than length of movable digit; digits longish, movable as long as the carapace, immovable about twice as long as its basal width. Femora and tibiæ of *legs* granular, the granules intermixed with punctures on the tibia, following segments closely punctured; tarsi short, not twice as long as high, convex above, incrassate distally, armed with long setæ arranged more or less regularly in two rows.

Measurements in millimetres.—Total length 46; length of carapace 6·5, of tail 29·5; width of 1st segment 3·5, of 5th 2·8; width of hand 5·5; length of hand-back 5, of movable finger 8·5.

Loc. Base of Mt. Roraima (3500 feet alt.).

BROTEOCHACTAS POROSUS, sp. n.

Colour. Trunk and tail blackish brown; fourth and fifth segments of tail and vesicle paler, reddish; legs also reddish brown, chelæ with humerus and fingers blackish, hand and brachium redder.

Carapace, except on the normally smooth tracts, very distinctly punctured, especially the area around and between the eyes, with very fine close-set granulation on its lateral slope. *Terga* similarly punctured, with a few very fine granules in front and on the sides, the granules and punctures scarcely distinguishable with a hand-lens; the tergum of seventh abdominal somite much more distinctly granular, with larger granules along the lateral border and two series forming indistinct crests on each side. *Sterna* punctured, the fourth and fifth more closely than the others, the third with a distinct smooth patch in the middle of its posterior half.

Tail barely four times as long as the carapace; carapace as long as first, second, and half the third segments, and about as long as the fifth; scarcely narrowed posteriorly; all the segments wide, the second nearly twice as wide as long, the fourth about as wide as long; fifth one-third longer than wide, abruptly narrowed behind; segments punctured throughout; the superior, supero-lateral, and infero-lateral keels strong and granular; the inferior median crests almost obsolete on segment 1, more evident on segments 2 and 3, but represented by irregularly arranged granules; on segment 4 the granules assume a more definite, but still incomplete arrangement in two parallel rows; median lateral keel present on segment 1, represented by a few granules on segments 2 and 3, absent on segment 4; fifth segment with its upper edges granular and sharp, a distinct median lateral keel in the anterior half of the side, and three distinct and granular inferior keels, the area between them also serially granular. *Vesicle* narrower than the tail, wider than high, punctured but not granular below.

Chelæ punctured even to the tips of the fingers; humerus with upper keels granular; brachium with upper anterior keel obsoletely granular; hand wide, distinctly though not strongly carinate, not granular, except slightly so on the inner surface; width of hand about equal to length of hand-back; fingers long and slender, in contact, the movable as long as the carapace, nearly twice the length of the hand-back.

Legs punctured, not granular; tarsi furnished beneath with long, close-set, irregularly arranged bristles; the fourth tarsus long, lightly convex above, about three times as long as high.

Pectinal teeth 10 (♂ ♀); the teeth longer in ♂.

Measurements in millimetres.—Total length 24; length of carapace 3·5, tail 15.

Loc. Summit of Mt. Roraima (8600 feet).

Some of the distinguishing features of these two species of *Broteochactas* are set forth in the following table:—

a. Infero-lateral crests on all the caudal segments strong, as strong as the supero-lateral; inferior medians present and granular; the integument punctured throughout; terga in male mostly weakly granular; vesicle smooth; hand with two finger-keels, smooth, more globular; fingers long and slender, movable as long as carapace. (Of small size, 25 mm. in length.) . . . . . *porosus*, sp. n.

b. Infero-lateral crests on anterior three caudal segments obsolete; inferior medians absent; dorsal integument not noticeably punctured; terga closely granular throughout in male; vesicle granular; hand granular, less globular, with compressed inner edge, without finger-keels.

*a*¹. Carapace (♂) entirely covered with close-set granules; sterna minutely and closely punctured throughout; lower surface of tail finely and closely granular and punctured; legs also densely and closely punctured; fingers longer, the movable as long as carapace, immovable more than twice as long as its basal width. (Of large size, 46 mm. in length.). . . . . *granosus*, sp. n.

*b*¹. At least the upper portion of the carapace smooth; sterna and lower surface of anterior segments of tail smooth and polished, not punctured or granular; legs mostly smooth and polished; femora at most weakly granular; fingers shorter, movable shorter than carapace, immovable not twice as long as its basal width.

*a*². Tail very thick, width of first caudal segment considerably exceeding the width of the hand, and equal to length of first and second caudal segments taken together; hand very smooth, rounder, its inner edge less compressed, with keel of underhand obsolete; tarsi longer, more thickly covered below with long hair . . . . . *Sclateri*, mihi.

*b*². Tail much thinner, width of first segment generally much less than, rarely equal, to width of hand, and less than sum of length of first and second caudal segments; hand at least with its inner edge granular and subcompressed; tarsi shorter and more scantily clothed with shorter hairs . . *Gollmeri, delicatus, parvulus.*

(For tabulation of the characters of the last three species, see my paper in Ann. Mag. Nat. Hist. (6) xix. pp. 365–366, 1897; and Kraepelin, Das Tierr., Scorp. etc. p. 173, 1899.)

HYMENOPTERA, HEMIPTERA HETEROPTERA, HOMOPTERA, NEUROPTERA, AND ORTHOPTERA.

By W. F. Kirby, F.L.S., F.E.S.

(Plate 6. figs. A, B.)

The few specimens of these Orders which have been submitted to me for identification consist almost exclusively of common and well-known South American species. A few species, mostly immature, are hardly in a condition to be determined with certainty. These are one Forficulide, three Blattidæ, and one Pentatomide. One Hemipteron I have described as new.

The two species noted from the greatest elevation (*Polistes annularis* and *Sympetrmu gilvum*) are southern representatives of forms found in North America.

HYMENOPTERA ACULEATA.

APIDÆ.

MELIPONA INTERRUPTA.

Melipona interrupta, Latr., Humb. & Bonpl. Voy. i. p. 291, pl. 20. fig. 3 (1811).
Melipona fasciculata, Smith, Cat. Hym. Ins. Brit. Mus. ii. p. 406, n. 25 (1854).

Roraima, 3500 feet.

VESPIDÆ.

POLISTES ANNULARIS.

Vespa annularis, Johansson, Amœn. Acad. vi. p. 413. n. 93 (1763).

Roraima. 8600 feet.

MUTILLIDÆ.

MUTILLA LARVATA.

Mutilla larvata, Klug, Nova Acta Acad. Leop. x. p. 310, pl. 22. fig. 6 (1821).

Roraima, 3500 feet.

MUTILLA QUADRUM.

Mutilla quadrum, Klug, Nova Acta Acad. Leop. x. p. 320, pl. 23. fig. 8 (1821).

Roraima, 3500 feet.

FORMICIDÆ.

DOLICHODERUS BISPINOSUS.

Myrmica bispinosa, Oliv. Enc. Méth. vi. p. 502. no. 60 (1791).

Roraima, 3500 feet.
A considerable number of specimens.

HEMIPTERA HETEROPTERA.

COREIDÆ.

ACANTHOCEPHALA SURATA.

Diactor suratus, Burm. Handb. Ent. ii. (1) p. 334. n. 2 (1835).

Roraima, 3500 feet.

REDUVIIDÆ.

ACROCORIS PERARMATA, sp. n. (Pl. 6. fig. A; B, profile of head.)

Long. corp. 27 millim.

Male. Rufo-testaceous, clothed with a fine grey pile, all the spines tipped with reddish. Head long, the part behind the eyes slightly longer than that before; two long pointed spines near together just behind the antennæ; antennæ with the first joint very long,

blackish, with two whitish bands near each extremity, second joint about $\frac{1}{4}$ as long as the first, whitish, with the extremity blackish; third joint about as long as first, blackish towards the base, and yellowish beyond, blackish again at its junction with the fourth joint, which is yellowish and about as long as the second. Front lobe of thorax with two strong erect spines at the back; middle lobe with four, two in the middle, and two lateral, all at about equal distances apart. Clavus brown. First joint of rostrum yellowish, the remainder deep black, the tip extending just beyond the base of the head. Legs unarmed, thickly pubescent, more or less blackish on the outer side; tarsi black. Abdominal segments with four small lateral spines on the basal half, and three long, triangular, whitish, lateral spots on each side beyond the middle. Scutellum with a very slight terminal spine, if any.

Roraima, 3500 feet.

This curious insect does not seem to have much resemblance to any described species

HEMIPTERA HOMOPTERA.

FULGORIDÆ.

ACRÆPHIA PERSPICILLATA.

Cicada perspicillata, Fabr. Spec. Ins. ii. p. 322. n. 1 (1781).

Roraima, 3500 feet.

NEUROPTERA ODONATA.

LIBELLULIDÆ.

SYMPETRUM GILVUM.

Diplax illotum, var. *gilva,* De Selys, Ann. Soc. Ent. Belg. xxviii. p. 43 (1884).

Roraima, 8600 feet.

ORTHOPTERA.

LOCUSTIDÆ.

CHROMACRIS SPECIOSA.

Gryllus speciosus, Thunb. Mém. Pétersb. ix. p. 40, pl. 14. fig. 1 (1824).

Roraima, 3500 feet.

EXPLANATION OF PLATE 6.

Fig. A. *Acrocoris perarmata,* sp. n.
Fig. B. „ „ profile of head.

COLEOPTERA.

By C. O. Waterhouse, V.P.E.S.

CARABIDÆ.

Oxycrepis leucocera, Lacord.

A single example.

DYTISCIDÆ.

Rhantus elegans, Waterh.

Several specimens found at an elevation of 8600 feet. A single example only was obtained on a former occasion.

LUCANIDÆ.

Charagmophorus lineatus, Waterh.

This genus and species were described from a single male example. Other males and two females have now been found at 8600 feet.

The female has the elytra as in the male, with lines of very small grey scales; but the head and thorax are shining. The mandibles are short. The head is sparsely punctured posteriorly, rather strongly transversely impressed in front and strongly and closely punctured. The thorax is rather more convex than in the male, a little narrowed anteriorly, obtusely angular at the sides at a short distance from the base, moderately finely punctured, the punctures rather unequal, not very sharply defined, separated from each other by two to three diameters of a puncture; the margins are impressed; the disk is longitudinally impressed. The front tibiæ have the five teeth rather stronger and more approximate than in the male; the posterior tibiæ have a small acute tooth at the middle.

DASCILLIDÆ.

Exagontus, gen. nov.

Mentum a little broader than long, slightly narrowed anteriorly, corneous; ligula broad and transverse, acuminate at the sides; labial palpi three-jointed, the basal joint elongate, the second a little shorter, pear-shaped, the third somewhat the same shape but inverted, acuminate at the apex. Maxillæ with two delicate subequal lobes; the galea consists of two portions, the basal part parallel, the apical portion shorter, clothed with stiff hair; the lacinia terminates in a curved acute tooth, which is surrounded by curved stiff bristles. Maxillary palpi rather long, robust, hairy; the basal joint rather short, narrowed at its base; the second joint stouter, at least twice as long as broad, gradually and not very much narrowed towards the base; the third joint similar in shape but a little shorter; the fourth a little longer than the second, club-shaped, acuminate at the apex. Mandibles strong, curved, concave below, very acute at the apex, with a small

tooth about the middle. Labrum rather large, subquadrate, rounded in front. Head convex, deflexed, but in no way covered by the pronotum, parallel behind the eyes, narrowed in front. Eyes rather prominent, coarsely facetted. Antennæ placed a little in front of the eyes, widely separated at their base, eleven-jointed, of moderate length, of nearly equal thickness throughout, except the slender third joint; composed of cylindrical joints, clothed with stiff pubescence; the second joint globose, the third joint very narrow at the base, the following joints gradually narrower towards their bases. Thorax strongly transverse, the side with a strong tooth-like prominence about the middle. Scutellum triangular. Elytra broader than the broadest part of the thorax, one-third broader than long, flattened dorsally; the surface uneven, irregularly punctured.

Prosternum much reduced, with a diamond-shaped process between the coxæ, the coxal cavity completely open posteriorly.

Mesosternum slightly inclined, with a slight, sharply margined concavity in which the prosternal process rests.

Metasternum rather short; the episterna broad, a little narrowed posteriorly. Abdomen composed of five visible segments below. Anterior coxæ strongly transverse; intermediate coxæ globose; posterior coxæ very narrow externally, very wide internally.

Tibial spurs small but distinct. Tarsi five-jointed; the basal joint nearly as long as the two following taken together; the fourth the broadest, concave above, so that it has a tendency to be bilobed, clothed with soft pubescence below; fifth joint not very long, with divaricating claws.

I have some doubt as to the affinities of this genus. The structure of the antennæ points to affinity with the Ptinidæ, near *Hedobia*; but the broader, flatter form, the freely exposed head, the transverse anterior coxæ, and internally dilated posterior coxæ would place it in the Dascillidæ, where I now propose to place it. No doubt the Ptinidæ and Dascillidæ should be placed nearer together than is usual in collections.

EXAGONTUS DENTICOLLIS, sp. n.

Elongato-oblongus, parum convexus, fusco-castaneus, sat nitidus, brevissime griseo-pubescens; capite nigrescente, crebre punctato; thorace utrinque dente valido instructo; elytris crebre punctatis, pube gisea variegatis, impressionibus nonnullis notatis.

Long. $3\frac{1}{2}$, lat. 2 mill.

The antennæ are moderately robust, the third joint more slender, the fourth to tenth joints a little longer and broad, cylindrical, united to each other by their centres; the eleventh joint a little longer, elongate-oval. Apical joint of the maxillary palpi black. The elytra are brown, closely punctured, with numerous lines of greyish-yellow pubescence giving a mottled appearance. Each elytron has a large transverse impression below the scutellum, another about the middle, one below the shoulder; the surface of the apical portion is uneven, and in certain positions three slight interrupted costæ may be traced.

TENEBRIONIDÆ.

CYRTOSOMA MONTANUM, sp. n.

Oblongum, nitidum; capite, thorace femoribusque fere nigris; elytris æneis, tenuiter striatis; ore, antennis, tibiis tarsisque piceo-flavis.

Long. 11, lat. $5\frac{3}{4}$ mill.

Head finely and rather closely punctured. Antennæ with the six terminal joints gradually wider. Thorax finely but distinctly and rather closely punctured, with a very slight, transverse impression above the anterior angles and above the posterior angles; the sides with two obtuse not very prominent angles. Scutellum pitchy. Elytra rather wider than the thorax, one-quarter longer than broad, rather straight at the sides, obliquely narrowed at the apex, finely striated, the striæ indistinctly punctured, the interstices scarcely convex on the back, but at the apex and at the sides they are slightly angularly raised in the middle; the fourth and fifth striæ unite posteriorly about one-third from the apex, the third and fifth unite nearer the apex, and the second and sixth within the apical angle. The underside of the insect is for the most part pitchy red, shaded with black on the metasternum and abdomen.

LAMIIDÆ.

ALCIDION SEXNOTATUM, sp. n.

Elongatum, angustum, fuscum, pube grisea vestitum; thorace basi constricto; elytris fasciis punctisque numerosis fuscis ornatis, singulo elytro ad apicem oblique truncato, angulo saturali obtuso, angulo externo rectangulare; antennis gracilibus, corpore multo longioribus. ♂.

Long. 11, lat. 4 mill.

Compared with the majority of the species of this genus, this is very elongate and narrow. The antennæ are very long; the basal joint is much narrowed at the base, then quite straight and parallel to the apex; the joints are tipped with black and have some black pubescence, which forms a slight tuft at the apex of the third joint. The thorax is short and transverse, lightly impressed on the disk, arcuately narrowed anteriorly, slightly constricted at the base; the middle of the disk and three or four small spots at the sides are brown. The elytra have scarcely any trace of costæ; the basal crest is well marked but not acute; the basal area is brown, with two vague oblique vittæ of ashy pubescence marked with brown punctures; at the middle there is an irregular ashy fascia (descending at the suture) marked with brown punctures; behind this is a fascia formed by five elongate spots placed side by side, the sutural one lower down than the others; in the apical area there are six brown spots, three of which are placed so as to make **VI** on the left elytron.

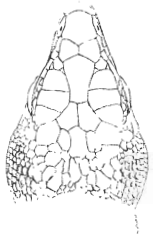
The following species, not of very special interest, were found at an elevation of 3500 feet:—

Passalus transversus, Dalm.; *Antichira dichroa*, Mannerheim; *Pelidnota lævissima*, Burm.; *Pyrophorus noctiluca*, Linn.; *Strongylium hæmorrhoidalis*, Fabr.; *Heilipus carinirostris*, Schönh.; *Cratosomus subangulatus*, Schönh.; *Sphenophorus hemipterus*, Linn.; *Trachyderes interruptus*, Dup.; and *Jamesia globifera*, Fabr.

J.G. Keulemans del. et lith.

Mintern Bros. imp.

1. ZONOTRICHIA MACCONELLI. 2. ZONOTRICHIA PILEATA.



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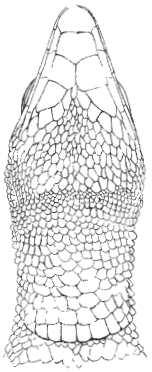

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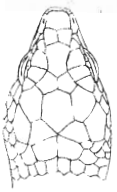

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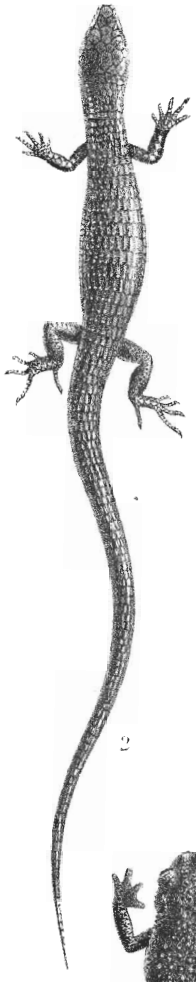

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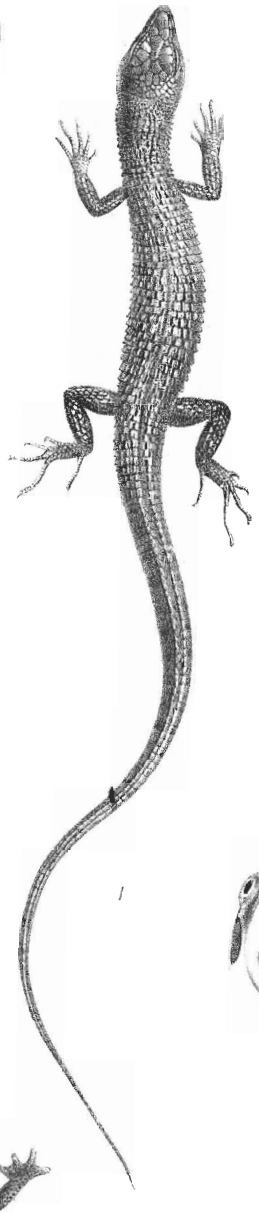

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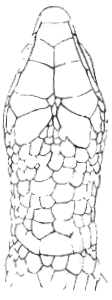

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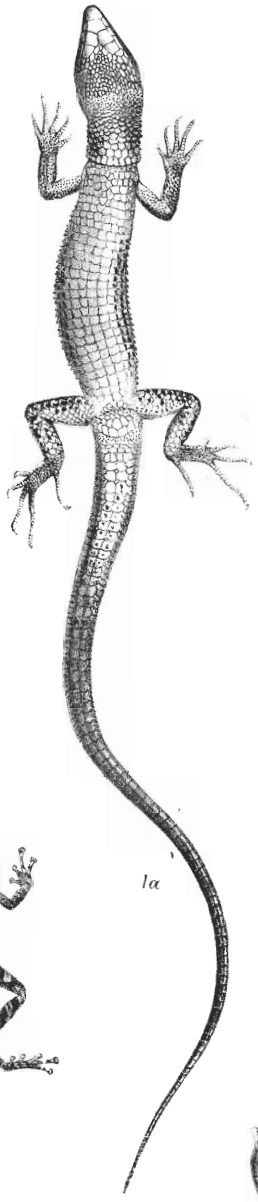

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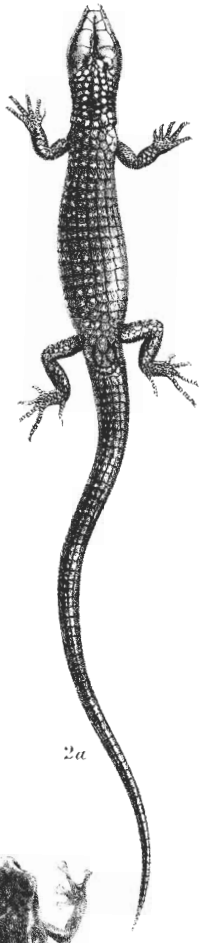

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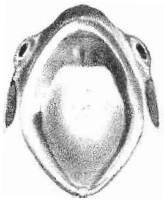
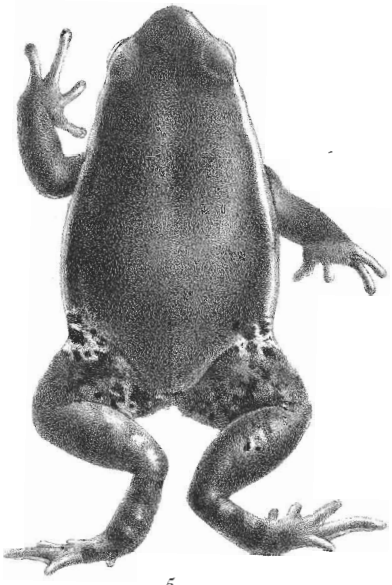


5a.

6

3.



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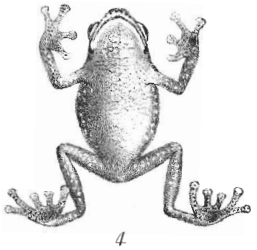
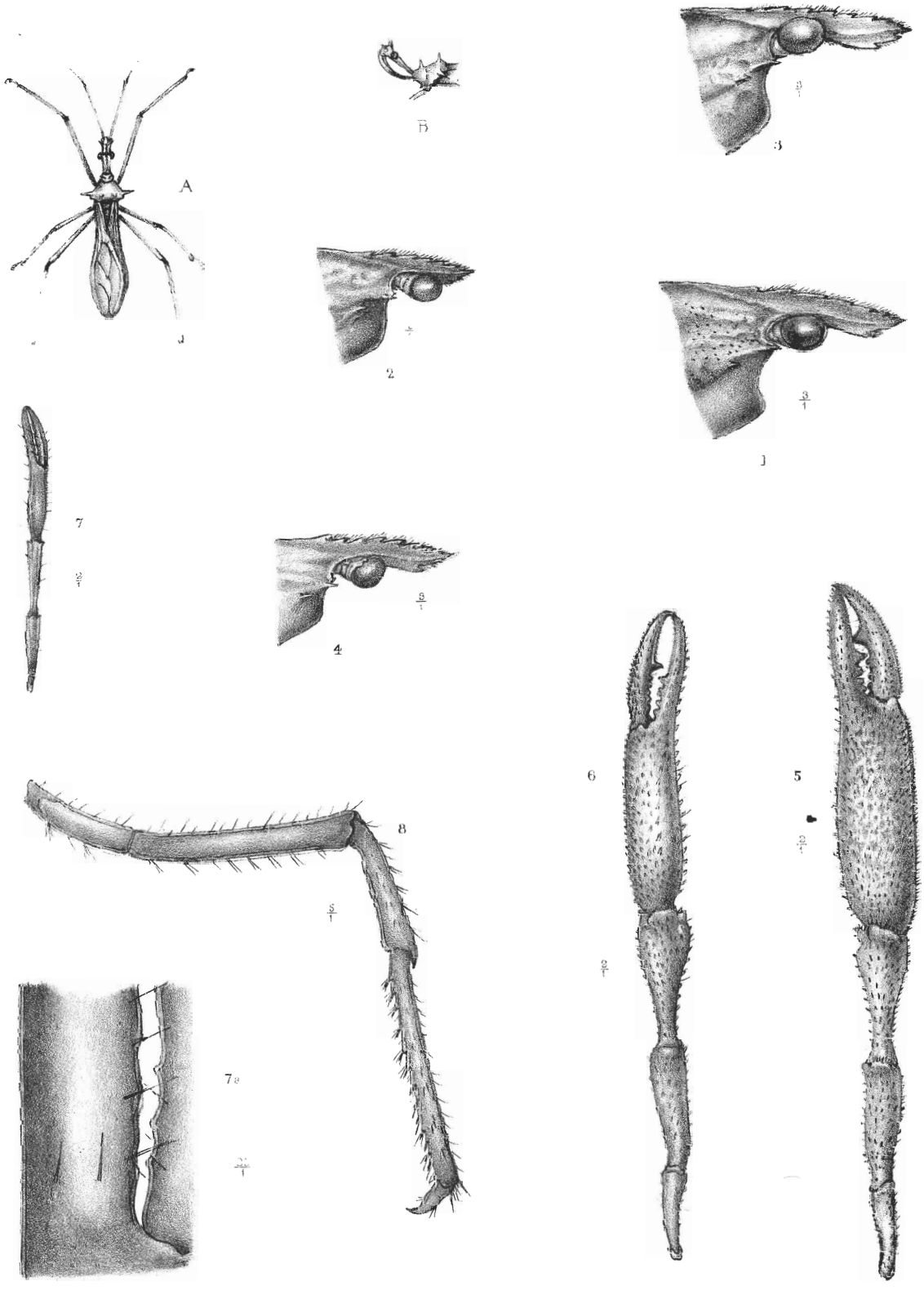


4

P.J Smit del et lith

Mintern Bros imp.

1. NEUSTICURUS RUDIS. 2. PRIONODACTYLUS LEUCOSTICTUS. 3. OREOPHRYNELLA QUELCHII
4. OREOPHRYNELLA MACCONNELLI. 5. OTOPHRYNE ROBUSTA. 6. HYLODES MARMORATUS.



J.G.de Man del

West, Newman imp.

CRUSTACEA AND INSECTA FROM RORAIMA.