near the base of the outgrowth, the shell presents an appearance not unlike that of a snail-shell which has undergone repair, so that this variation would seem to lend support to the theory that such duplicate parts may arise from injury. This, however, cannot have been the case. The animal would scarcely have survived such an injury. The specimen was the property of Mr. G. A. Doubleday, who has kindly presented it to the British Museum."

Mr. R. I. Pocock, F.Z.S., exhibited two photographs (text-fig. 22, opposite) of a specimen of Burchell's Zebra which has been preserved for many years in the City Museum at Bristol. The photographs were kindly taken by Mr. William Moline, and every facility for doing so was afforded by the Secretary and Curator, Mr. Bolton, F.R.S.E., with the sanction of the Committee of the Bristol Museum.

The specimen is a small male, probably not quite full-grown, standing 44 inches at the withers. Unfortunately, its locality is unknown and nothing of its history can now be traced. Its importance and interest, however, lie in the fact that it belongs to the typical race of Burchell's Zebra, or, as it should be more properly called, Burchell's Quagga (*Equus quagga burchelli*), which is either extinct as a wild animal or, at all events, verging on extinction. Hence it is desirable that the characters of every specimen now living in captivity or exhibited in museums should be permanently recorded by photography.

A marked difference between the Bristol example and the typical example described and figured by Gray, but now unfortunately lost, is to be found in the distinctness and distribution of the paler, narrower, intermediate stripes. In the specimen sent to the British Museum by Burchell these stripes, as attested by the figure, were long, sharply defined, and extended without a break from the hind-quarters to the head. In the Bristol specimen, on the contrary, they are short and pass from the hind-quarters only halfway along to the shoulder. Owing to scarcity of material of this rare animal, the exact systematic value of this difference is unknown.

Mr. Pocock also exhibited an example of a species of *Notiphilides*, one of the Geophilomorphous Centipedes. The specimen came from Venezuela, and is remarkable for its great length. It measures 283 mm. (or nearly 11 inches) long and 9 mm. (or about $\frac{1}{3}$ of an inch) broad—that is to say, it is, roughly speaking, twice as long as the average-sized specimens of the largest species hitherto recorded.

Mr. Oldfield Thomas, F.R.S., exhibited specimens of three new Mammals, two of them representing new genera, which had been collected by Mr. A. S. Meek in British New Guinea. Besides these new forms Mr. Meek had obtained in the same region examples of several very rare species, such as *Dorcopsis macleayi*,

Phalanger carmelitæ, *Pseudochirus corinnæ*, *Dasyurus albopunctatus*, and *Leptomys elegans*, the last two having been previously unrepresented in the National Museum.

The new forms were described as follows:—

HYOMYS, g. n. (Muridæ).

Size very large; form bulky. Fur coarse and harsh. Feet proportionally short; pollex with a broad nail. Tail of medium length, very coarsely scaled, practically naked. Mammæ 0—2=4.

Skull stout and heavily built. Nasals very broad in front, narrowing rapidly behind to a point. Postorbital processes present, quite separate from the supraorbital ridges, which, though distinct, are not heavily developed. Palatal foramina short; posterior palate cut out to level of front of $m.^3$ Bullæ small, little inflated, each with a raised rim running along its inner margin. Paroccipital processes strongly developed.

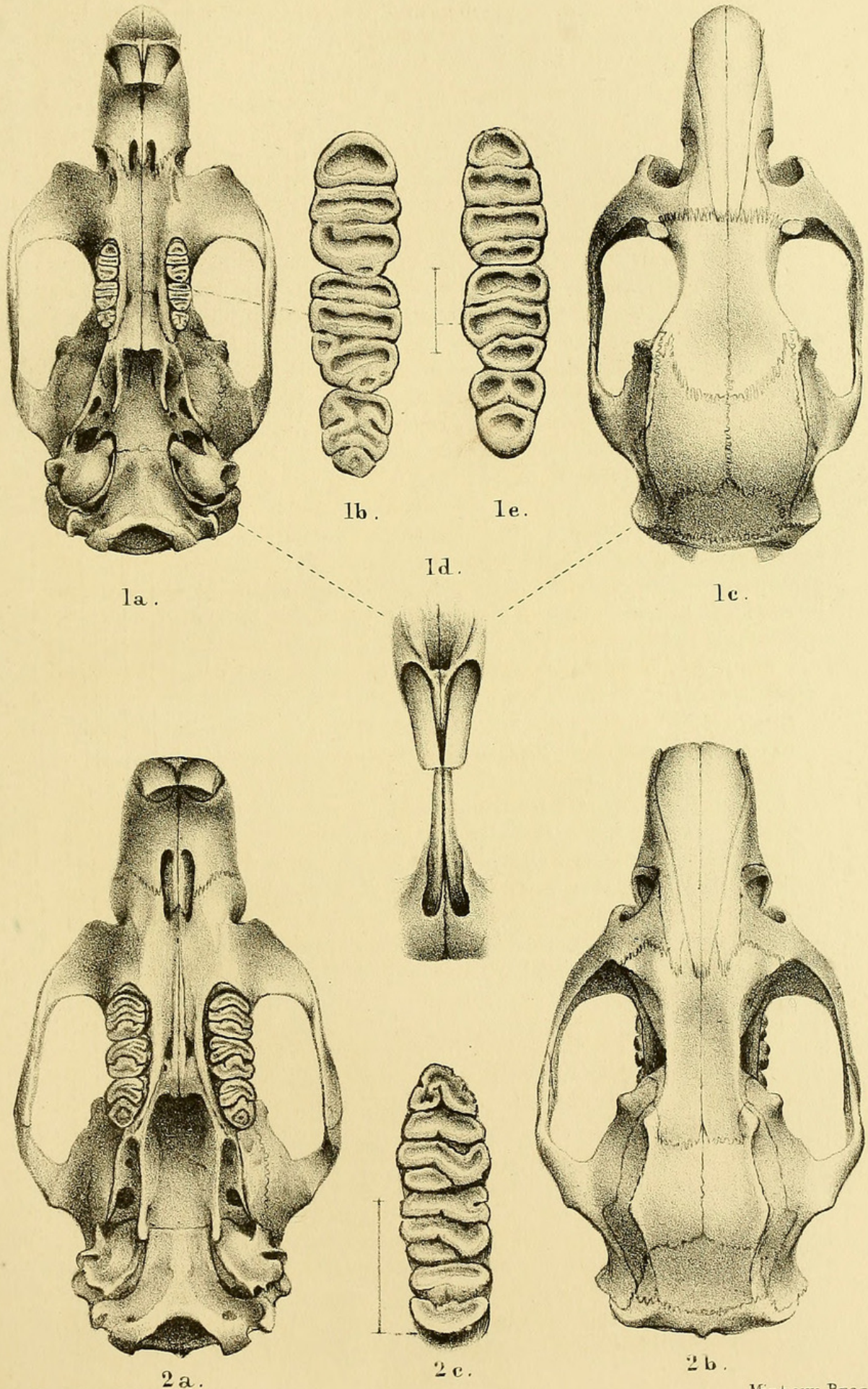
Incisors large, equally broad above and below, and of normal depth. Molars (see Pl. XXIII. figs. 2 *a* & 2 *c*) very large and heavy, their length one quarter the basilar length, and their breadth nearly equal to that of the palate between them; very distinctly laminate, though the laminæ have got the normal murine curvature. $M.^2$ and $m.^3$ each with a well-developed antero-internal cusp so joined with the anterior lamina as to form a distinct Y-shaped structure when worn; no antero-external secondary cusps. $M.^3$ with the posterior overhang very unusually developed. Two anterior lower molars with the normal posterior supplementary cusp very large, so as to form a short extra lamina extending from the centre of the tooth to its inner edge.

Type, *Hyomys meeki*.

This genus was not distinguished by any single character of marked importance, but the gigantic Rat on which it was based could not be referred to any of the known Papuan genera of Muridæ. Its molars, while enormously larger, had the general appearance of those of *Mus* or *Uromys*, and had nothing of what might be called the zigzag character exhibited in *Crateromys*, *Lenomys*, and *Mallomys*, to none of which did it seem specially allied.

HYOMYS MEEKI, sp. n. (Plate XXIII. figs. 2 *a*–2 *c*.)

Fur harsh, general body-hairs about 25 mm. in length, but a number of bristles 60 to 70 mm. long intermixed with the shorter fur. General colour dark slaty greyish, the hairs grey proximally, with black or brown ends; longer bristles dark with whitish or buffy ends. Under surface dirty greyish, not sharply defined, the bases grey, the ends dirty buffy. Head like back; whiskers very numerous, stiff, black. Ears short, rounded, naked; a small tuft of whitish hairs above their anterior base. Limbs uniformly brown throughout; upper surface of hands and feet nearly naked, blackish; palms and soles naked, pads broad and fleshy; fifth hind toe reaching to the end of the first phalanx



H.Grönvold del. et lith.

Mintern Bros. imp.

1. ANISOMYS IMITATOR.
2. HYOMYS MEEKI.

of the fourth; claws of medium strength and curvature. Tail about as long as the body without the head, practically naked, the two or three minute hairs which project from below the point of each scale only from $\frac{1}{4}$ to $\frac{1}{2}$ the length of a scale; scales very large, perhaps the largest among the Muridæ, only about 5 to the centimetre; arranged diagonally, their points unusually perceptible to the touch. Proximal third of tail black, terminal two-thirds yellow.

Skull and teeth as described above. Posterior ends of nasals just level with those of premaxillary processes. Interorbital region narrow, parallel-sided, strongly concave mesially; its edges raised up into vertical ridges which run backwards to the lambdoid crests, and have two lateral projections, one at the fronto-parietal suture, and the others in the middle of the parietals. Palatal foramina shorter than $m.^1$ and $m.^2$ combined, narrow, parallel-sided.

Dimensions of the type, measured on the skin:—

Head and body 390 mm.; tail 345; hind foot (s. u.) 63; ear (wet) 26.

Skull—greatest length 74 mm.; basilar length 64·5; greatest breadth 41; nasals 28 × 12·3; interorbital breadth 9; interparietal 10·5 × 14·5; palate, length from hensilion 37; diastema 23·3; palatal foramina 8·3 × 4; length of upper molar series 17; breadth of $m.^1$ 5·7; combined breadth of upper incisors 8·6.

Hab. Avera, Aroa River, British New Guinea.

Type. Female. B.M. No. 3.12.1.12. Collected by A. S. Meek. One specimen.

This huge Rat looked not unlike one of the Indian Bandicoot-rats, but had probably no real affinity with them. It was quite unlike anything hitherto described from the Papuan region, except perhaps Dr. Jentink's *Mus armandvillei* of Flores, which differed from it, however, in many details. *Mallomys rothschildi* Thos., another large Papuan rat, had molars of quite a different pattern.

Hyomys meeki was no doubt an arboreal animal, as indicated by its shortened hind feet, and it was probable that the large pointed scales of its tail served a purpose analogous to that of the caudal "climbing-irons" of *Anomalurus*.

Anisomys, g. n. (Muridæ).

Size large, form less bulky than in *Hyomys*. Fur coarse. Pollex with a broad nail. Tail of medium length, smoothly scaled, thinly hairy. Mammæ 1—2 = 6.

Skull large, stout and heavy. Nasals long, parallel-sided behind and but little broadened in front. Supraorbital region broad, flat, with heavy edges which are continued backward as low, evenly curved ridges to the back of the skull; a vertical postorbital projection connected with the main ridge on each side. Palatal foramina very small. Palate with raised lateral ridges edging it between the foramina and the molars; behind, it extends

some way behind m.^{3} Bullæ but little swollen. Lower jaw remarkably high anteriorly, the usual deep hollow in front of the molars largely filled up.

Incisors very peculiar in that while the upper ones are of about normal breadth and depth, the lower are quite disproportionally narrow and deep; in most Rodents the upper and lower incisors are of approximately equal transverse dimensions, but here the two lower ones combined are of only the same breadth in front as a single upper one, while in depth the lower teeth exceed the upper by a third, and nearly resemble in shape those of *Daubentonia*. Their roots are carried unusually far up at the back of the jaws, so that their basal inflation is at the level of the yoke between the coronoid and condylar processes. Molars very small, their length less than one-fifth the basilar length, and the palate between them about twice their breadth. Their laminæ directly transverse, with simple raised enamel-edges and concave dentine-spaces; last lamina of m.^{1} and m.^{2} each with a small additional internal ring inserted in front of it, the homologue of a supplementary cusp; lower molars with four, three, and two simple laminæ respectively.

Type, *Anisomys imitator*.

This genus seemed to be even less allied to any known one than *Hyomys*, and it could not be said what were its nearest relations. Perhaps when young specimens were obtained, so that unworn molars could be examined, some light would be shed on this problem. In any case the genus might be readily distinguished by the peculiar characters of incisors and molars above detailed.

Anisomys imitator, sp. n. (Plate XXIII. figs. 1 *a*–1 *e*.)

Size and other external characters remarkably like those of the large *Uromys* (*U. validus* or *papuanus*), with which it is associated. Fur short and coarse; hairs of back about 10–12 mm. in length, unmixed with longer piles. General colour above coarsely mixed blackish and fawn or buffy, the resulting mixture approaching "mummy-brown" of Ridgway. Under surface dull buffy white, the hairs slightly darker at their bases. Head rather more greyish than back, heavily lined with black. Eyes surrounded by indistinct black rings. Ears of medium size, their fine hairs blackish. Arms and legs dark grizzled grey, the inner sides rather lighter; hands and feet brown, becoming whitish at the ends of the digits; claws rather delicate and sharply pointed; palms and soles naked, with large smooth pads: fifth hind toe reaching nearly to the end of the first phalanx of the fourth. Tail fairly long, set with medium-sized scales set in alternating rows, and averaging about 9 to the centimetre; very thinly hairy, the short whitish hairs becoming rather longer towards the tip; its colour dark brown for its basal fourth, the remainder yellowish white.

Skull smooth and rounded; nasals and premaxillary processes

of about equal extent; interorbital region broad, scarcely concave, its edges thickened, but without distinct beading; palatal foramina minute, narrow, of about the same length as m.^{2}; anterior palate concave mesially, with swollen ridges laterally; posterior palate extending behind m.^{3} a distance equal to the length of m.^{2} Bullæ small, smooth.

Dimensions of the type, measured in skin :—

Head and body 300 mm.; tail 320; hind foot (s. u.) 60; ear 24.

Skull—greatest length 68 mm.; basilar length 65; greatest breadth 35; nasals $27 \times 8{\cdot}6$; interorbital breadth 11·3; interparietal $8{\cdot}3 \times 14{\cdot}5$; zygomatic plate 9·2; palate, length 33; diastema 20; palatal foramina $3{\cdot}7 \times 3{\cdot}1$; length of upper molar series 10·2, breadth of m.^{1} 3·1. Upper incisors, combined breadth 4·7, depth 4·9; lower incisors, combined breadth 2·4, depth 5·3.

Hab. Avera, Aroa River, British New Guinea.

Type. Male. B.M. No. 3.12.1.10. Collected by A. S. Meek. Two specimens, male and female.

So like was this Rat to the large Papuan *Uromys*, of which Mr. Meek also obtained examples, that it was taken for the same species until a closer examination showed its many peculiar characters. Externally, indeed, it could only be distinguished by its rather darker colour and its slightly hairy tail.

It would be of interest to find out what this Rat fed on to account for the peculiarities of its dentition. Perhaps hard-shelled nuts, such as cocoanuts, might demand these powerful cutting-incisors, while the small and delicate molars would be sufficient to deal with the soft contents.

PERAMELES ORNATA, sp. n.

A small species with prominent black markings.

Essential characters all very much as in *P. longicauda* Peters & Doria *, to whose immediate neighbourhood it is brought by all the characters used in the synopses of species, both external and cranial, of the 'Catalogue of Marsupials' †. Coloration, however, quite unique, for with a pale brown general body-colour there is a prominent deep black mesial line running from the muzzle down the back to the base of the tail; this line commences between the eyes, broadens to about half an inch on the crown and nape, narrows on the anterior back, and broadens again on the rump. Through each eye there is also a black streak, starting at the root of the whiskers, and running to the base of the ears; between the median and lateral dark bands the head is grizzled whitish. Under surface dull creamy whitish throughout, not sharply defined laterally. Rump with an additional black line on each side, running downwards parallel to the mesial line and passing on to the back of the hind legs. Ears of medium length, rounded, dark brown, a small blackish mark behind their posterior bases; metatragus short, triangular. Arms

* Ann. Mus. Genov. xvi. p. 672 (1881).

† P. 229 (1888).

and legs dark brown externally, grizzled whitish internally; upper surface of hands naked, flesh-coloured, of feet pale brown, lightening terminally to whitish; soles quite naked, finely granulated. Tail long, finely haired, yellow for its terminal two inches and along its under surface; the remainder dark brown.

Skull and teeth agreeing word for word with the description of those of *P. longicauda* given in the 'Catalogue of Marsupials.'

Dimensions of the type, measured in skin:—

Head and body 300 mm.; tail 177; hind foot (s. u.) 59; ear (wet) 28.

Skull—basal length 57·2 mm.; greatest breadth 23·3; nasals 27 × 5·2; interorbital breadth 12·8; palate, length 37; combined length of three anterior molariform teeth 10.

Hab. Avera, Aroa River, British New Guinea.

Type. Adult male. B.M. No. 3.12.1.23. Collected by A. S. Meek. One specimen.

In the conspicuous striping of its dorsal surface this handsome species differed from all known Bandicoots, though it was possible that when dried skins of *P. longicauda* were examined, some indication of a similar pattern of coloration would be found to exist in that animal.

EXPLANATION OF PLATE XXIII.

Fig. 1 *a*. *Anisomys imitator* (p. 200). Lower view of skull, natural size.
1 *b*. „ „ „ Left upper molar series, $\frac{4}{1}$.
1 *c*. „ „ „ Upper view of skull.
1 *d*. „ „ „ Front view of incisors.
1 *e*. „ „ „ Right lower molar series, $\frac{4}{1}$.
2 *a* & 2 *b*. *Hyomys meeki* (p. 198). Lower and upper views of skull, natural size.
2 *c*. *Hyomys meeki* (p. 198). Right lower molar series, $\frac{2}{1}$.

The following papers were read:—

1. On some new Species of Aquatic Oligochæta from New Zealand. By W. B. Benham, D.Sc., M.A., F.Z.S., Hon. M.R.S. Tasm.; Professor of Biology in the University of Otago.

[Received July 24, 1903.]

(Plates XXIV.–XXVI.* and Text-figure 23.)

In the course of a biological survey of the New-Zealand lakes undertaken, during the year 1902, by Messrs. K. Lucas and Hodgson, of Cambridge, a considerable number of specimens of Oligochæta were obtained which were placed in my hands for identification. My best thanks are due to Mr. Lucas for his

* For explanation of the Plates, see pp. 231, 232.