

the district of York. They feed upon large maggots and the roots of trees, and do considerable damage to the maize and potato crops by burrowing. A specimen kept by him in confinement became in a few days very docile, but was irritable, and resented the slightest affront or ill usage. It took bread, which it held in its fore-paws. A young one to which it gave birth unfortunately escaped, after being carried in the mother's pouch for several days."

Mr. Reid considers the distinctions between this and the rest of the species belonging to the genus *Perameles* so marked, that should more of the same form be discovered, the above characters would constitute a subgenus to which the name of *Macrotis* might be applied.

Mr. Waterhouse exhibited a second specimen of *Myrmecobius*, and directed the attention of the Meeting to certain differences existing between it and the one upon which he had founded the characters of the genus, and described under the specific name of '*fasciatus*.'

The present animal differs from the one previously described in having the black and fulvous colouring of the back less decided, owing to a larger proportion of interspersed white hairs. The fasciæ, instead of being white, are of a yellowish cream-colour, and they also differ in number and arrangement. Commencing from the tail, the three first are distinct and uninterrupted, the intermediate spaces being about $\frac{1}{2}$ an inch in width, black, with white hairs interspersed, and a few of an ochraceous colour. The fourth is also distinct, but instead of being continued across the back, it is met by two fasciæ from the opposite side. The two following are continuous, but less distinct than either of the foregoing. Beyond these, the fasciæ are almost obsolete, there being only faint indications of them on the sides of the body.

The most important distinction, however, exists in the teeth, the present specimen possessing altogether four more molars than the one brought before the notice of the Society on a previous occasion. The entire number of teeth is 52, (26 in each jaw), and the 5 posterior molars are placed closely together, differing in that respect from those of the previously examined specimen.

The animal was brought from Van Diemen's Land, and others similar to it were observed scratching at the roots of trees, and feeding upon the insects which are generally abundant in such situations. Their favourite haunts are stated to be the localities in which the Port Jackson willow is most plentiful.

Mr. Waterhouse remarked that although the differences between the two animals were considerable, yet he did not consider the distinctions such as to justify his characterizing the one then before the Meeting as a second species.

A Paper was then read by William Ogilby, Esq., with a view of pointing out the characters to which the most importance should be attached in establishing generic distinctions among the *Ruminantia*.

Mr. Ogilby commences by observing that "It has been justly remarked by Professor Pallas, that if the generic characters of the *Ruminantia* were to be founded upon the modifications of dentition, in accordance with the rule so generally applicable to other groups of Mammals, the greater part of the order would necessarily be comprised in a single genus; since the number, form, and arrangement of the teeth being the same in all, except the *Camels* and *Llamas*, these organs consequently afford no grounds of definite or general distinction. Hence it is that naturalists have been obliged to resort to other principles to regulate the distribution of ruminating animals; and the form, curvature, and direction of the horns, selected for this purpose at a period when the extremely limited knowledge of species permitted the practical application of such arbitrary and artificial characters without any very glaring violation of natural affinities, still continue to be the only rule adopted by zoologists in this department of Mammalogy. The illustrious Illiger forms a solitary but honourable exception; he first introduced the consideration of the muzzle and lachrymal sinus into the definitions of the genera *Antilope*, *Capra*, and *Bos*; but his labours were disregarded by subsequent writers, or his principles applied only to the subdivision of the genus *Antilope*. It is obvious, however, that as the knowledge of new forms and species became more and more extensive, the prevailing gratuitous rule above mentioned, founded as it is upon purely arbitrary characters which have no necessary relation to the habits and œconomy, or even to the general external form, of the animals themselves, would eventually involve in confusion and inconsistency the different groups which were founded upon its application; and such has long been its acknowledged effect. The genus *Antilope*, in particular, has become a kind of zoological refuge for the destitute, and forms an incongruous assemblage of all the hollow-horned *Ruminants*, without distinction of form or character, which the mere shape of the horns excluded from the genera *Bos*, *Ovis*, and *Capra*; it has thus come to contain nearly four times as many species as all the rest of the hollow-horned *Ruminants* together; so diversified are its forms, and so incongruous its materials, that it presents not a single character which will either apply to all its species, or suffice to differentiate it from conterminous genera.

"To meet this obvious evil, MM. Lichtenstein, De Blainville, Desmarest, and Hamilton Smith have applied Illiger's principles to subdivide the artificial genus *Antilope* into something more nearly approaching to natural groups; the reform thus effected, however, was but partial in its operation; the root of the evil still remained untouched, for none of these eminent zoologists appears to have been sufficiently aware of the extremely arbitrary and artificial character of the principal group itself, which they contented themselves with breaking up into subgenera, nor of the actual importance and extensive application of the characters which they employed for that purpose. By mixing up these characters, moreover, with others of a secondary and less important nature, the benefit which might have been expected from their labours has been, in a great measure, neu-

tralized; and even the subdivisions which they have introduced into the so-called genus *Antilope*, are less definite and comprehensive than they might otherwise have been made.

“The truth is, however, that the presence or absence of horns in one or both sexes; the substance and nature of these organs, whether solid or concave, permanent or deciduary; the form of the upper lip, whether thin and attenuated as in the goat, or terminating in a broad heavy naked muzzle as in the *Ox*; and the existence of lachrymal sinuses and interdigital pores, are the characters which really influence the habits and œconomy of ruminating animals, and upon which, consequently, their generic distinctions mainly depend. These, with the assistance, in a very few instances, of such accessory characters as the superorbital and maxillary glands, the number of teats, and the existence of inguinal pores, are sufficient in all cases to define and characterize the genera with the strictest reference to logical precision and zoological simplicity. It is not my intention to discuss the value of these characters, or to state the reasons which induced me to adopt them in preference to those more generally employed in this department of Mammalogy; these will form the subject of a future communication, and I shall content myself for the present with observing, that the presence or absence of horns in the females regulates, in a great measure, the social intercourse of the sexes, that upon the form of the lips and muzzle, the only organs of touch and prehension among the *Ruminantia*, depend the nature of the food and habitat, making the animal a *grazer* or a *browser*, as the case may be; and that the existence or nonexistence of interdigital glands, the use of which appears to be to lubricate the hoofs, has a very extensive influence upon the geographical distribution of the species; confining them to the rich savannah and the moist forest, or enabling them to roam over the arid mountain, the parched karroo, and the burning desert.

“Having thus briefly explained the necessity of reforming the characters of the different groups of the Order *Ruminantia*, as they are at present constituted, and the nature and value of the principles which I propose to employ for that purpose, I shall at once proceed to their practical application, confidently anticipating that their employment will remove the most serious objections which exist against the present distribution of the order, and place our knowledge of these interesting animals, in point of scientific accuracy, precision, and affinity, on a par with the more generally cultivated departments of zoology.

Fam. I. CAMELIDÆ.

Pedes subbisulci, subtus callosi, digitis apice solo distinctis; ungulæ succenturiatæ nullæ; *cornua* nulla; *dentes* primores suprâ duo, infrâ sex.

2 Genera.

1. CAMELUS, cujus characteres sunt:

Digiti conjuncti, immobiles.

Rostrum chilomate instructum, labro fisso.
Sinus lachrymales nulli.
Fossæ interdigitales nullæ.
Folliculi inguinales nulli.
Mammæ quatuor.

2. AUCHENIA :

*Digit*i disjuncti, mobiles.
Rostrum chilomate instructum, labro fisso.
Sinus lachrymales nulli.
Fossæ interdigitales nullæ.
Folliculi inguinales nulli.
Mammæ duæ.

“The *Camelidæ* form what Mr. MacLeay would call an aberrant group; they differ essentially from other Ruminants in the structure both of the organs of locomotion and of mastication, and their generic distinctions consequently depend upon characters which have no application to the remaining groups of the order. On the other hand, the principles of generic distribution which subsist among the rest of the *Ruminantia* appear to furnish negative characters only when applied to the *Camelidæ*; but though necessarily expressed negatively, the absence of lachrymal, inguinal, and interdigital sinuses forms, in reality, positive and substantial characters, and as such, as well as for the sake of uniformity, should be introduced into the definition of these, as well as of other genera, in which they unavoidably appear under a negative form.

Fam. II. CERVIDÆ.

Pedes bisulci; *cornua* solida, plerùmque decidua, in mare solo, aut in utroque sexu; *dentes primores* suprà nulli, infrà octo.

6 Genera.

1. CAMELOPARDALIS.

Cornua in utroque sexu, perennia, simplicia, cute obducta.
Rhinaria nulla.
Sinus lachrymales nulli.
Fossæ interdigitales parvæ.
Folliculi inguinales nulli.
Mammæ quatuor.

Duo species sunt *C. Æthiopicus* et *C. Capensis*.

2. TARANDUS.

Cornua in utroque sexu, subpalmata, decidua.
Rhinaria nulla.
Sinus lachrymales exigui.
Fossæ interdigitales parvæ.
Folliculi inguinales nulli.
Mammæ quatuor.

Typus est *Tarandus Rangifer* (*Cervus Tarandus*).

3. ALCES.

Cornua in mare solo, palmata, decidua.

Rhinaria nulla.

Sinus lachrymales exigui.

Fossæ interdigitales magnæ.

Folliculi inguinales nulli.

Mammæ quatuor.

Typus est *Alces Machlis* (*Cervus Alces*).

4. CERVUS.

Cornua in mare solo, ramosa, decidua.

Rhinaria magna.

Sinus lachrymales distincti, mobiles.

Fossæ interdigitales magnæ.

Folliculi inguinales nulli.

Mammæ quatuor.

Typi sunt *C. Elaphus* et *C. Saumer* aut *Hippelaphus*, Cuv.

5. CAPREA.

Cornua in mare solo, subramosa, decidua.

Rhinaria distincta.

Sinus lachrymales nulli.

Fossæ interdigitales magnæ.

Folliculi inguinales nulli.

Mammæ quatuor.

Typus est *C. Capreolus*.

6. PROX.

Cornua in mare solo, subramosa, decidua.

Rhinaria magna.

Sinus lachrymales maximi, mobiles.

Sinus duo supraorbitales ad basin cornuum, magni, mobiles.

Fossæ interdigitales magnæ.

Folliculi inguinales nulli.

Mammæ quatuor.

Typus est *Prox Moschatus* (*Cervus Muntjac*).

Fam. III. MOSCHIDÆ.

Pedes bisulci; *cornua* nulla; *dentes primores* suprâ nulli, infrâ octo.

2 Genera.

1. MOSCHUS.

Rhinaria magna.

Sinus lachrymales nulli.

Fossæ interdigitales nullæ.

Folliculi inguinales nulli.

Mammæ quatuor.

Typus est *Moschus Moschiferus*.

2. IXALUS?

Rhinaria nulla.

Sinus lachrymales exigui, distincti.

Fossæ interdigitales nullæ.

Folliculi inguinales exigui.

Mammæ duæ.

Typus est *Ixalus Probaton*, Proc. Zool. Soc., Part IV. page 119.

“The genus *Ixalus*, founded upon the observation of a single specimen, may eventually prove to belong to a different family; it differs little, indeed, from the true Antelopes: but even supposing it to be correctly placed among the *Moschidæ*, other forms are still wanting to fill up the chasms which evidently exist among the characters of that group. Two are more especially indicated, and our knowledge of the laws of organic combination and of the constituent parts of other groups, gives us every reason to believe in their actual existence, and to anticipate their discovery. They will be characterized nearly as follows, and will probably be found, one in the tropical forests of the Indian Archipelago, and the other on the elevated table lands of Mexico or South America.

HINNULUS.

Rhinaria magna.

Sinus lachrymales distincti.

Fossæ interdigitales nullæ.

Folliculi inguinales nulli.

Mammæ quatuor.

CAPREOLUS.

Rhinaria nulla.

Sinus lachrymales nulli.

Fossæ interdigitales parvæ?

Folliculi inguinales?

Mammæ duæ.

“It may appear a bold, perhaps a presumptuous undertaking, thus to predict the discovery of species, and define the characters of genera, of whose actual existence we have no positive knowledge; but, as already remarked, all the analogies of nature, whether derived from organic combination or from the constituent members of similar groups, are in favour of the supposition; and I may observe further, that the recent discovery of the genus *Ixalus*, if indeed it eventually prove to be a genus, of which I had long previously defined the characters, as I have here done for the presumed genera *Hinnulus* and *Capreolus*, strengthens my belief in the actual existence of these forms, and increases the probability of their future discovery.

Fam. IV. CAPRIDÆ.

Pedes bisulci; *cornua* cava, persistentia; *rhinaria* nulla; *dentes primores* suprâ nulli, infrâ octo.

7 Genera.

1. MAZAMA.

Cornua in mare solo.
Sinus lachrymales nulli.
Fossæ interdigitales distinctæ.
Folliculi inguinales nulli.
Mammæ quatuor.

Typus est *M. Furcifer* (*Antilope Furcifer*).

2. MADOQUA.

Cornua in mare solo.
Sinus lachrymales distincti.
Fossæ interdigitales distinctæ.
Folliculi inguinales nulli.
Mammæ quatuor.

Typus est *M. Saltiana* (*Ant. Saltiana* et *Hemprichii*).

3. ANTILOPE.

Cornua in mare solo.
Sinus lachrymales distincti, mobiles.
Fossæ interdigitales maximæ.
Folliculi inguinales maximi.
Mammæ duæ.

Typus est *A. Cervicapra*.

4. GAZELLA.

Cornua in utroque sexu.
Sinus lachrymales distincti, mobiles.
Fossæ interdigitales maximæ.
Folliculi inguinales maximi.
Mammæ duæ.

Typus est *Gazella Dorcas* (*Ant. Dorcas*).

5. OVIS.

Cornua in utroque sexu.
Sinus lachrymales exigui, immobiles.
Fossæ interdigitales parvæ.
Folliculi inguinales nulli.
Mammæ duæ.

Typus est *Ovis Aries*.

6. CAPRA.

Cornua in utroque sexu.
Sinus lachrymales nulli.
Fossæ interdigitales parvæ.
Folliculi inguinales nulli.
Mammæ duæ.

Typus est *Capra Hircus*. Ad hoc genus pertinent *Ovis Tragelaphus*, et *Antilope Lanigera* aut *Americana*, Auct.

7. OVIBOS.

Cornua in utroque sexu.
Sinus lachrymales nulli.

Fossæ interdigitales?
Folliculi inguinales nulli.
Mammæ quatuor.

Typus *Ovibos Moschatus*.

Fam. V. BOVIDÆ.

Pedes bisulci; cornua cava, persistentia; rhinaria distincta, nuda;
dentes primores suprâ nulli, infrâ octo.

9 Genera.

1. TRAGULUS.

Cornua in utroque sexu.
Glandulæ maxillares oblongæ.
Fossæ interdigitales nullæ.
Folliculi inguinales nulli.
Mammæ quatuor.

Typus est *T. Pygmæus* (*Ant. Pygmæa*).

2. SYLVICAPRA.

Cornua in mare solo.
Glandulæ maxillares oblongæ.
Fossæ interdigitales parvæ.
Folliculi inguinales distincti.
Mammæ quatuor.

Typus est *S. Mergens* (*Ant. Mergens*).

3. TRAGELAPHUS.

Cornua in mare solo.
Sinus lachrymales magni.
Fossæ interdigitales distinctæ.
Folliculi inguinales nulli.
Mammæ quatuor.

Typus est *T. Hippelaphus* (*Ant. Picta*); the *Neel-ghæ*, and not the *Saumer Deer* of India, as I shall show elsewhere, is the animal described by Aristotle under the name of *Hippelaphus*.

4. CALLIOPE.

Cornua in mare solo.
Sinus lachrymales nulli.
Fossæ interdigitales nullæ.
Folliculi inguinales distincti.
Mammæ quatuor.

Typus est *Calliope Strepsiceros* (*Ant. Strepsiceros*).

5. KEMAS.

Cornua in utroque sexu.
Sinus lachrymales nulli.
Fossæ interdigitales magnæ.
Folliculi inguinales nulli.
Mammæ quatuor.

Typus est *Kemas Ghoral* (*Ant. Goral*).

6. CAPRICORNIS.

Cornua in utroque sexu.*Sinus lachrymales* magni.*Fossæ interdigitales* distinctæ.*Folliculi inguinales* nulli.*Mammæ* quatuor.Typus est *C. Thar* (Ant. *Thar*, Hodg.).

7. BUBALUS.

Cornua in utroque sexu.*Sinus lachrymales* exigui, distincti.*Fossæ interdigitales* magnæ.*Folliculi inguinales* nulli.*Mammæ* duæ.Typus est *Bubalus Mauritanicus* (Ant. *Bubalus*).

8. ORYX.

Cornua in utroque sexu.*Sinus lachrymales* nulli.*Fossæ interdigitales* magnæ.*Folliculi inguinales* nulli.*Mammæ* quatuor.Species sunt *O. Capensis* (Ant. *Oryx*), *Leucoryx*, *Leucophæa*, &c.

9. BOS.

Cornua in utroque sexu.*Sinus lachrymales* nulli.*Fossæ interdigitales* nullæ.*Folliculi inguinales* nulli.*Mammæ* quatuor.Typus est *Bos Taurus*.

"I have here confined myself strictly to generic characters; the synonyma and discrimination of species will form the subject of a future monograph; in the mean time, with the assistance of the Article ANTELOPE in the Penny Cyclopædia, or, with the proper corrections, of Col. Smith's Treatise on the Ruminants in the fourth volume of Griffith's Translation of the 'Règne Animal,' the student will have no difficulty in referring any particular species to its appropriate genus. He will thus be enabled to judge of the correctness or incorrectness of the affinities here indicated, and consequently to form a tolerable estimate of the value of the characters by which I propose to distinguish the genera of ruminating animals; and indeed it is principally from the wish to excite the attention of zoologists to more extensive observation than I myself possess, that I have been induced to publish the present analysis of my own investigations in this department of Mammalogy."

Mr. Gould exhibited numerous examples of the genus *Strix* (as at present restricted), from numerous parts of the globe, including three undescribed species from Australia, which he characterizes as follows:



Ogilby, William. 1836. "On the generic characters of Ruminants." *Proceedings of the Zoological Society of London* 4, 131–139.

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