

August 27, 1833.

N. A. Vigors, Esq., in the Chair.

A letter was read, addressed to the Secretary by the Rev. R. T. Lowe, Corr. Memb. Z.S., and dated Madeira, June 25, 1833. It accompanied an extensive series of the land and freshwater *Shells* of that island, which the writer presented to the Society's Museum, and which were exhibited. With one exception, they have been described by Mr. Lowe in a paper published, with figures, in the 'Transactions of the Cambridge Philosophical Society.'

In another letter, of the same date, Mr. Lowe states, "We have no native *Mammalia* (except a few *Seals* now and then on the coast,) existing on the Island, at least in its present state. The common brown *Rat* and the *Mouse* abound, of course introduced; and the *Ferret* is said to have become wild in one part of the island, though I have not myself seen it. The *Rabbit* is pretty common: it abounds in the *desertas*. As we have neither *Hares*, *Foxes*, *Shrews*, *Moles*, nor *Weasels*, so of the *Birds* we have no *Crows* nor *Rooks*, *Daws*, *Magpies*, *Sparrows*, (*Fringilla Petronia*, Linn., takes the place of the latter, at least in Porto Santo,) no *Titmice*, *Yellow-hammers*, &c."

A letter was read, addressed to Mr. Vigors by James Prinsep, Esq., and dated Calcutta, March 9, 1833. It accompanied a list of numerous zoological specimens forwarded to the Society by B. H. Hodgson, Esq., Corr. Memb. Z.S., Resident in Nepál; and also of a large collection of living *Pheasants*, *Partridges*, &c., obtained by that gentleman at the request of the Council for transmission to England. On this list Mr. Prinsep had noted the condition of the various articles at the time of their arrival in Calcutta, by which it appeared that many of the birds had died during their journey from the interior. Of the *Monál* or *Impeyan Pheasant*, only two remained alive from among seventeen sent; and of these two, one was reported to be dying.

The gizzard, liver, *duodenum*, and adjacent parts, and the *cloaca*, were exhibited of the young *concave Hornbill*, *Buceros cavatus*, Lath., which recently died at the Society's Gardens; and Mr. Owen read his "Account of the Anatomy" of the bird.

Its tongue is very short, of a triangular form, and smooth. The air-cells are very large, and that in front of the neck contains the *oesophagus* and the *trachea*. The *oesophagus*, as in the *Toucan*, is very wide, and of nearly equal diameter as far as the gizzard. The gizzard is thicker in its coats and of a more elongated form than that of the *Toucan*: its cuticular lining is very tough, and disposed in longitudinal ridges. After the duodenal fold, the remainder

of the intestinal canal is disposed in two similar folds; and then extends along the middle line of the back to the *cloaca*. There are no *cæca*. The coats of the intestines are stronger than is usual in *Birds*, and the diameter of the canal is more considerable, diminishing, however, gradually from the commencement of the *ileum* as far as the beginning of the *rectum*, and thence becoming wider to its termination. The whole length of the intestines is 5 feet; that of the bird, from the end of the bill to the vent, being 2 feet 2 inches, of which the bill measures 7 inches.

The liver has the usual two lobes, of which the right is the largest. The gall-bladder is of considerable size. The *pancreas*, of an elongated slender form, has a small oval enlargement at its commencement at the lower end of the spleen, and a flattened oblong mass on head at the bottom of the duodenal fold: it accompanies the *duodenum* throughout its length, being folded on itself similarly to the intestine. Its secretion is conveyed into the intestine by three ducts; one from its head, which enters the *duodenum* at the bend of the fold; the others from the elongated lobes, which terminate close together at the end of the fold between the insertions of the hepatic ducts: an arrangement corresponding with that described by Cuvier in his '*Leçons d'Anat. Comp.*' tom. iv. p. 55, as existing in the *Heron*.

In the *cloaca*, the rudimentary bladder is little more than a line in width, and the ridges bounding it above and below are confined to the back part of the cavity. The *bursa Fabricii* (which Mr. Owen regards as analogous to the glandular pouch, found single or double dorsad of the *rectum* in so many other classes,) is of a triangular form, large, and surrounded, as usual, by a capsule of muscular fibres.

The muscles of the mandibles consist of a *digastricus*, or of a muscle analogous to it, destitute, as is usual in *Birds*, of a middle tendon; a temporal muscle of moderate size; and *pterygoidei externi* and *interni*, proportionally more developed. There is also a strong ligament occupying the place of the *masseter*; and a second, destined to prevent dislocation backwards, which passes from the *zygoma* directly backwards to the condyle or articular depression of the lower jaw. Disproportionate as this apparatus seems to the moving of so large a body as the bill of the *Hornbill*, it is yet fully adequate, the weight of that organ by no means corresponding with its size. The cavities in the bones, the arrangement of the columns supporting their *parietes*, and the air-cells, produce at the same time lightness and strength.

With respect to other parts of the skeleton, Mr. Owen particularly noticed the extension of the air-cells into the distal bones of the extremities. In the *Pelican* Mr. Hunter observes that the air passes not only into the *ulna* and *radius*, but "into those bones which answer to the *carpus* and *metacarpus* of Quadrupeds." In the *Hornbill* the air passes also into the bones corresponding to the *phalanges*; and in the posterior extremity it permeates the *tibiæ*, *tarsi*, and *phalanges*.

Mr. Owen concluded by some remarks on the affinities of the *Hornbill* as deducible from its anatomy. Its nearest approach is to the *Toucan*. The *Toucan*, however, in the want of a gall-bladder agrees with the *Parrots*; the presence of that organ in the *Hornbill*, places the bird in more immediate relation with the *Crows*. The disposition of the intestines in long and narrow loops also agrees with the *Raven*. The tongue, so remarkably varied in form and use among the *Scansores*, resembles, in the *Hornbill*, that of the carnivorous *Birds*.

The individual was observed to be more attached to animal than to vegetable food, and would quit any other substance if a dead mouse were offered to it. This it would swallow entire, after squeezing it twice or thrice with the bill: and no castings were noticed. Petiver, however, has borne testimony to its regurgitating habits.

The communication was accompanied by drawings of the organs of nutrition; of the *cloaca*; and of the bill and its muscles.

A "Description of *Alepisaurus*, a new genus of *Fishes*," by the Rev. R. T. Lowe, A.M., Corr. Memb. Z.S., was read. It was contained in a letter addressed to the Secretary, and was accompanied by a coloured drawing of the *Fish*, which was exhibited, as was also a specimen, preserved in spirit, which had been presented to the Society by Mr. Lowe in the summer of 1832.

Mr. Lowe refers the genus in question to that family of the *Acanthopterygii* to which Cuvier has given the name of *Tænioides*. Its generic characters may be thus expressed.

ALEPISAURUS.

Caput compressum, anticè productum; *rictu* magno, pone oculos longè diducto; *dentibus* uniseriatis, validis, retrorsum spectantibus, quibusdam prælongis.

Corpus elongatum, attenuatum, cum capite omnino nudum.

Pinnæ dorsales duæ; *prima* alta, a nuchâ longè per dorsum producta; *secunda* parva, trigona, adiposa: *ventrales* mediocres, abdominales: *analis* mediocris, anticè elevata: *caudalis* magna, furcata.

Membrana branchiostega 6-7 radiata.

ALEPISAURUS FEROX.

Hab. in Mari Atlantico Maderam alluente, rarissimus.

In its habit, shape of body, smoothness of skin, compressed head, wide gape, and long formidable teeth, *Alepisaurus* agrees with *Trichiurus* and *Lepidopus*; but in the former of these genera the ventral fins are wanting, and in the latter they are rudimentary only and pectoral: *Trichiurus* is also destitute of a caudal fin. In both of them, moreover, the anal fin is anormal and the dorsal is single. The two dorsal fins of *Alepisaurus* are remarkable among the *Fishes* with which it is most nearly related; and the small adipose second dorsal evidently indicates a curious relation of analogy to the *Salmonidæ* among the *Malacopterygii*.



Owen, Richard. 1833. "On the Anatomy of the concave Hornbill (*Buceros cavatus*, Lath.)." *Proceedings of the Zoological Society of London* 1, 102–104.

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