

Thus it appears that, whereas the northern lampreys of the genus *Petromyzon* undergo only one metamorphosis—namely, from the *Ammocetes* to the adult—the southern form (*Geotria*) undergoes two well-marked changes, from the *Ammocetes* to the *Velasia*, and then from the *Velasia* to the adult, which latter represents a further stage in development never reached by the northern forms.

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ART. XI.—*Note on an Entire Egg of a Moa, now in the Museum of the University of Otago.*

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[Read before the Otago Institute, 11th June, 1901.]

Plate VII.

FRAGMENTS of moa eggshell and more or less complete eggs have long been known, but the acquisition of an absolutely uninjured egg is of some interest, both on its own account and on account of the manner in which it was obtained. As far as I am aware, no entire egg is on exhibition in any museum. The specimen obtained at Kaikoura was injured by the pick in excavation.

The egg which forms the subject of this note was secured by a dredge-hand on the Earnscliffe gold-dredge, working on the River Molyneux, Otago.

The bank of the river is composed of very fine river-silt, and was formerly cultivated as a farm. It is so fine that when dug and dried it soon becomes reduced to fine powder, and is blown away in impalpable dust. The river, especially when in flood, scours the bank considerably, and it was after such a scouring, and when, fortunately, the dredge was not actually at work, that the egg was set free from the silt, and, floating in the river, drifted into the "well" between the two pontoons of the dredge. Luckily it was observed floating here and secured by one of the men, who also noted the hollow in the bank left by its removal, at about 14 ft. below the surface of the ground.

The egg was acquired for the Otago Museum through the kind services of Mr. Alexander Black, of Dunedin, who obtained it from the dredge-hand for £50, towards which Mr. Black himself and the Otago Institute contributed £5 each, while the balance was paid by the University.

It is not my intention to enter into a detail account of the structure of the eggshell, but I append references to literature in which these details will be found.

The present egg has the usual pale-buff colour. The surface is more or less worn or dissolved away by the action probably of the water passing through the soil; and, in comparison with various fragments of eggs from elsewhere, the surface is not shiny, though worn smooth, but over two areas at opposite ends of the equator the surface is fairly perfect. It is here marked by numerous small pits and short linear furrows of various lengths and depths (*vide* Hutton), but averaging 1 mm. in length. They are irregularly arranged, but always disposed lengthwise. There are about twenty such furrows to the square centimeter, and about as many pits; but the relative numbers vary in different parts, for by comparing this complete specimen with other less perfect eggs, in which the surface is not weathered, it appears that the pits are rather more numerous towards the poles and the linear furrows round the equator. In shape this moa's egg is relatively longer and narrower than that of an ostrich, and in this particular specimen one pole is slightly larger than the other; but in this matter there appears to be some variability in moas' eggs. I have seen others in which the two poles are precisely alike. The following measurements were taken: Length between vertical uprights, 195 mm. ( $7\frac{3}{4}$  in.); breadth between vertical uprights, 135 mm. ( $5\frac{1}{4}$  in.); greatest circumference, 522 mm. ( $20\frac{1}{2}$  in.); lesser circumference (equatorial), 428 mm. ( $16\frac{7}{8}$  in.); weight, 286.5 grammes.

I had an opportunity of examining a second entire egg, which was obtained some months later by the same man about a hundred yards below the spot at which our specimen was taken. The egg had been dipped in shellac (?), and was in a very dirty condition when it was brought to the Museum in order that the taxidermist might clean it before its transmission to London for sale. He refused, however, to undertake the responsibility. I took the following measurements, from which it will appear that this second egg was rather larger than our specimen; the two ends were similar, so that the egg was a perfect ovoid: length, 201 mm.; breadth, 138 mm.; greater circumference, 540 mm.; lesser circumference, 440 mm. I did not weigh it.

Both these eggs, as well as two or three other more or less damaged specimens that have been through my hands, appear to belong to the same species of moa, if we may judge from their agreement in dimensions. As the commonest genus in Otago was *Euryapteryx*, we may safely regard some species of this genus as the parent. It would be dangerous, however, to attempt to indicate the species, for size of egg is no guide to

size of bird, as we know from the extraordinary disproportion between the great egg and the small body of the kiwi; but I think we may go so far as to say that this egg was laid by either *E. ponderosus* or *E. elephantopus*.

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## EXPLANATION OF PLATE VII.

Photograph of moa's egg (reduced).

ART. XII.—*An Account of the External Anatomy of a Baby Rorqual* (Balænoptera rostrata).

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ON Monday, 6th August, 1900, I was informed that a "young whale, about 12 ft. long, had been cast ashore on the beach outside the Otago Heads." It was offered to me for a sum of money, and I arranged to purchase it. It turned out to be a young rorqual, about 10 ft. long overall, in excellent condition, the skin being damaged here and there, partly from being handled no doubt, partly from being cast ashore. On Tuesday I had photographs taken of it in various positions, and, with the help of Mr. Hamilton, made measurements and observations on its outer anatomy. On Wednesday I had a mould taken of it, and was able to commence dissection on