

ON SOME POINTS OF INTEREST CONNECTED WITH THE PLATYPUS.

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In bringing before your attention, this evening, the above-named subject, I regret I am able to introduce so little original material connected with these very interesting and anomalous animals. After reading Professor Bennett's work on their peculiarities and habits, also Professor Owen's on their anatomical structure and mode of reproduction, but little ground is left to be worked over, so completely have these two great authors gone into the subject. In relating my own individual experience this evening of these animals, it is more with the hope of leading to a discussion, than adding much fresh material to an already exhausted, but always interesting subject. After careful perusal of Owen's work, the point alone left for elucidation is the actual birth of the foetus; but when I can tell you that the foetus has been found in utero, and in a hairless condition in the burrow, our imagination easily fills up the gap. (The former of these startling facts I hope to demonstrate to this Society soon). That the platypus can be kept alive was proved by Professor Bennett, who had them for six weeks; but from the nature of the food he gave them I should be tempted to conclude that (like the pig entombed by the falling of a cliff at Dover) it had lived for a considerable time from its own fat, approaching in fact a hybernating animal. It is also mentioned in a German encyclopædia that these animals were taken to Europe after 1798, but we are not quite sure of its accuracy. My keeping one three months in captivity proves that could we but obtain the food they live on in a natural state, there would be no material difficulty in keeping them. The one mentioned grew rapidly, being but half grown when first procured; when he died he was full grown. His death was due, I believe, to an abscess connected with an accidental injury. Relative to their food, I have taken from the cheek pouches of freshly shot ones, fresh-water shrimps, water fleas, and beetles (the latter having a hard black epidermis); mine in captivity were given a limited quantity of worms, and salt-water fish. The former were taken in large quantity so greedily from the first that

this must be one of their natural foods ; the salt-water fish was skinned, cut into slender pieces, kept very fresh, and free from contact with salt. This they also took and consumed in large quantity for many hours during the day ; to a less extent at night. Being nocturnal animals this was strange, but they doubtless were not satisfied with the food provided, hence the necessity of their coming out during the day. For the most part their food is taken under water ; they turn over the sand and small stones at the bottom with their powerful bills, and collect in this manner in their cheek pouches whatever they discover, then they rise to the surface, and triturate their food before swallowing it ; this trituration is indicated by a slight lateral movement of the jaws. I have also seen them take pieces of fish or worms off stones out of water ; after doing so they always return to the water before swallowing it. It may be mentioned these cheek pouches on either side of the jaw are excellently adapted for the primary reception of the food, for organised as the animal is to swallow fluids, it could not well triturate the food at the bottom of rivers, which is done therefore on its reaching the surface of the water. These creatures remain under water a minute or more, which depends upon the supply of food, rising rapidly to the surface if it is plentiful. When on the surface of the water, and food has been abundant, several minutes elapse before the food is triturated and in a condition to swallow. There is a popular idea that their food is always taken with sand, which is necessary for digestion, but with the exception of a little taken whilst procuring their food, this is not true. What is taken for sand is the finely triturated epidermis of beetles, shrimps, etc., which is swallowed, and appears to exert a special and necessary action over digestion and absorption. My not providing these insects doubtless led to the death of my specimens. This material may act as the stones in the gizzards of birds, to still further prepare food for absorption. When swimming the forepaws are widely expanded, being convex forwards, propelling themselves by an antero lateral movement. The hind paws and tail take but little share ; the former have a slight lateral horizontal movement, the tail lazily moving with body. When diving the head is rapidly thrown beneath the body, front paws quickly moving until the bottom is arrived at, when they are seen turning rapidly over with their bills the sand, and even large stones, the tail turning from side to side as a rudder, being at an angle of 25 degrees from the river's bed. A train of small bubbles proceeding from the nose marks the exact course the animal is taking. The tail is the first part to reach the surface of the water. I do not know whether this

may be due to the fact that fat is more plentiful in this part of the body than elsewhere, and that the greatest buoyancy is situated here. After procuring their food, they remain for some minutes on the water's surface, or emerging from the tank, rest on the side masticating the food procured, seeming at times asleep but for the jaw movements. During this time they will turn on their side and press the water from back and chest with both front and hind paws, also scratch themselves. Their movements on land show that they are but little adapted for long journeys out of water. Their burrows may always be noticed to be just below or on a level with the surface of the river. One curious point here is that the web of front paws is doubled into the palm, the claws projecting, and leaving as they move their mark; with these they burrow, rapidly turning over earth and stones. They soon become very tame in captivity; in a few days the young ones appeared to recognise a call, swimming rapidly to the hand paddling the water; and it is curious to see their attempts to procure a worm enclosed in the hand, which they greedily take when offered to them. I have noticed that they appear to be able to smell whether or not a worm is contained in the closed hand to which they swim, for they desisted from their efforts if an empty fist was offered. Although so tame, they repulse any handling, especially on touching the bill or tail; not so, however, with the side, which they appear to like scratched, turning over, and coming back several times to have the operation repeated. The old ones, however, kept at a distance and refused all overtures. They soon become dry on leaving the water. Their habit is almost immediately to coil up on their side, the bill being placed to inner side of the tail, or rolled up like a ball, with the bill beneath the tip of the tail, similar to the Tasmanian porcupine, or English hedgehog. The colder the weather the more inert they are, and at times I found it difficult to get them to leave their warm box, which they always made for on leaving the water. The spurs found alone in the hind legs of the males are hollow, communicating at their base with the duct passing through the muscles of the thigh to a gland situated superficially in each lumbar region. The secretion ejected through this spur has some important office. We have read the virulent action of this secretion in the case of Mr. Simson (related by the Rev. Mr. Spicer to this Society), and from reliable information one at least of its important offices has been found out. It is well known that about the breeding season the male has frequently been caught with patches of recent ulceration, also cicatrices of old wounds about the body, rendering some of their skins valueless. This condition is brought about, I

suppose, by the fighting of the males with one another for possession of the female, a similar action being noticed with other animals. I have seen several of these ulcerations, and have come to the conclusion that it is from the poisoned wound; tracts of skin ulcerating from the virulent nature of the poison. The fact that human beings are so rarely wounded by the platypus' spur, is perhaps to be explained by the comparative clumsiness of movement of the animal when out of water. The last point, seeming to me of the greatest interest, is the rapid appearance and disappearance of the large mammary glands situated on the abdomen to the front of the hind legs. In the females which I have recently examined, not even the rudiment of this gland could be discovered, yet two or three months later it will have attained its full size, as rapidly disappearing after the birth of the embryo. This is, indeed, a wonderful provision of nature. It is obvious how much they would be injured by the animal trailing along the ground. The testicles of the male, situated in the abdomen, is perhaps a similar provision of nature. The Platypus is one of the most interesting creatures in the animal kingdom. I do not think any attention devoted to its observation, or any discussion of its economy, can be thrown away, and this must be my excuse for bringing these few notes, the result of several weeks of great trouble and care, before your Society.