The following paper was read:—

A POST-PLIOCENE ARTIODACTYLE;

BY

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(Read on 7th May, 1886.)

(PLATE I.)

BEFORE the advent of the white man and his familiars on Australian soil, there seems to have been no word for pig in the tongue of any native tribe. We must infer that the existence of the animal was unknown throughout the country. It is truly a remarkable fact that New Guinea swine have never, to our knowledge, accomplished the short passage between the northern and southern shores of Torres Straits, or, having done so, failed to establish themselves where the European pig finds it easy to recover and maintain its independence. It must be confessed that Northern Australia is, by reason of its fitful rainfall, not eminently adapted as a whole to the habits of the animal, still its scrubs and river banks would, previous to our occupation of the country, have been able to afford food and shelter to a goodly population of the kind, unless, indeed, native improvidence effected its destruction. What, then, if we assume that a pig or pig-like beast has been a dweller in the land in past time, and has perished utterly from its face? Shall we not be more than ever impressed with the breadth, if not totality, of the eclipse to which the vertebrate fauna of our geological yesterday appears to have been subjected, more than ever curious to know the physical geography, its causes and reactions which wrought the disappearance of a creature so tenacious of life as well as purpose as the pig, yet permitted the descent of a new though weaker world of marsupial life? The assumption is indeed improbable in the ratio of the difficulty it adds to that already felt when we attempt to account for the change

from the late to the present, yet it is one which by testimony, reliable as far as it goes, seems to be raised to the higher rank of presumption. That testimony is now submitted for examination.

It consists primarily of a quinque-tuberculate tooth of bunodont type, composed of four sub-conical cusps separated by crucial sinuses and supplemented by a post-basal talon of similar form. Its general shape is that of the last lower molar of the Peccary (D. torquatus), less nearly that of the last upper molar of the native pig of New Guinea (S. papuensis) were its talon brought into the central line of the tooth. It measures 35 mm. longitudinally and 25 mm. transversely, representing, other things being equal, an animal of the size of a large boar. But its immediate kinship was not with the genus Sus.—the multitudinous tubercles bristling on the surface of the tooth in the true pigs and the rising convolutions of enamel forming its complex cusps are entirely absent from the fossil. In the smoothness of the surface and simplicity of the structure of its cusps it even exceeds its homologue in Dicotyles and further departs from it in the comparative regularity of their transverse arrangement.

The outer anterior cusp is, unhappily, broken away. The inner is the largest of those remaining. Its fore and aft measurement is nearly one-half of the whole length of the tooth, its apex being near the hinder end; its two anterior sides, which meet in a low central ridge descending from the apex, slope gently forwards—that on the outer side is sub-concave, the inner one convex. The apex is worn from within downwards and outwards into a triangle of enamel enclosing a similar field of dentine. The hinder pair of cusps are about equal in size, and are placed opposite to each other in the transverse line; the outer one is conical and has its apex worn from without downwards and inwards to an oval patch of dentine; the inner is a little flattened posteriorly, and on its outer and fore sides rendered somewhat angular by projections linking it feebly with its adjoining cusps—its summit shows a surface of abrasion directed inwards and backwards, surmounted by a triangle of dentine. The post-basal talon is a single sub-pyramidal eminence less elevated

than the cusps proper, its convex hinder surface culminates in a point or solid angle formed by the junction with that surface of two anterior planes, the outer of which has been flattened by attrition. On the inner side of the tooth a narrow cingulum commences at the fore end of the anterior cusp and ends in the middle of the talon ; its edge is irregularly scalloped by the junction with it of ridges descending from the cusps, those from the anterior one being short, broad and two in number, those from the posterior one, three, but long and delicate ; the highest point of the edge of the cingulum is opposite the interval between the two cusps. An outer cingulum commencing on the hinder part of the outer side of the hinder cusp terminated on the outer side of the talon, but it is for the most part destroyed.

Confirmatory evidence of the alliance of this Suilline with the Peccaries rather than with the true pigs is given by a lower incisor, the middle tooth of the left side. The crown of this tooth is elongated, pointed, tri-lateral, and incurved, flat on its inner side in adaptation to the adjacent incisor, convex on its outer surface and more curved on the anterior edge of that surface than on the posterior face of the crown. The enamel of the outer surface descends much lower on the edges than in the middle, and thus leaves uncovered a large triangular area of dentine continuous with that of the fang on the inner side. The unprotected dentine runs still higher towards the tip of the tooth, the enamel of the posterior face thins rapidly away as it descends and disappears about midway. It will be seen from this that the enamel clothing of the sides of the tooth is similar in disposition to, but less in extent, than that of the Peccary. The seminude condition of the hinder face of the crown is not repeated in Dicotyles, but even here there is a slight notch in the basal edge of the enamel which may indicate gradual extension from above. The outer edge of the tooth above the base is in Dicotyles incrassated to receive and resist the pressure action of the cusp of the corresponding maxillary tooth, which produces an emargination of its edge. The emargination is present on a larger scale in the fossil, and evidencies a slightly concave condition of the antagonizing

surface, but the expansion of the tooth below it is represented in the fossil by a thickening of the enamel only. The cutting edge of the tooth is narrow and curved, the dentine behind it, exposed by attrition, elongated fore and aft. Like the crown, the fang gradually contracts in all its dimensions, it is much compressed transversely, the middle of each of its broad sides is concave, and its anterior edge forms a regular curve, continuous with that of the crown. The total length is 78 mm., of which the crown is 38 mm.; the fore and aft depth is 20 mm., nearly; its greatest transverse measurement, 11 mm. A second specimen, which has lost the crown from above the inner fork of enamel, had a length, when complete, of about 112 mm., or nearly $4\frac{1}{2}$ inches.

The second upper incisor is represented by a tooth from each of the sides and a second of the right side. The crown of this tooth greatly resembles that of the corresponding incisor of Dicotyles. On the posterior side it has the extero-inferior tubercle and the intero-superior tubercle and groove, but the latter is continued upwards to the summit, over which it passes to the posterior surface; a survival of this continuity is extant in Dicotyles. On the outer side the lateral tubercle is strongly demarcated from the adjacent surface by a depressed elongated area. This is reduced in Dicotyles to a linear groove. The edge of the tubercle is entire, not lobed as in the Peccary at its summit. The outer surface is strongly convex. The most interesting feature of this tooth, however, is its large basal vacuity for a persistent pulp, declaring relationship with the progenitors of the hippopotamus. The fang retains to its lower end the triangular shape, and the width given to it by the crown: and its walls are gradually reduced to the thinness conditioned by a persistent matrix. On the fore outer edge of the tooth the enamel descends within 1·5 mm. of the bottom; on the fore inner edge, to the height of 8·5 mm. above it; on the hinder and inner surfaces, it is disposed as in Dicotyles. The length of the tooth is 36 mm.; the breadth of its crown, 12 mm. The second example from the same side as the preceding shows apparently a sexual modification. In proportions, much stouter and shorter, its anterior surface is, towards the summit, obscurely sub-

divided into an outer and inner lobe. The lateral tubercle is continued upwards as a ridge, slightly folding over backwards. At its base it shows traces of lobular subdivision, and anteriorly it passes into the convexity of the crown without any line of separation. The inner superior tubercle is continuous with the inner subdivision of the anterior surface, and the groove external to it is thus interrupted on the summit of the tooth. Between the apical part of the groove and the top of the outer lateral ridge the apex is ground down to a subtriangular patch of dentine. A third specimen, with its coronal character immature, is also probably from a young male. In all these the pulp cavity is wide and deep. With advancing age, as indicated by wear, it diminishes, though not regularly: the fang concomitantly lengthening below the enamel line and rapidly contracting. In an example, whose crown is eroded to its full breadth, a relatively small conical cavity is left in the much contracted end of the fang. A fifth example shows a larger and deeper cavity, with thinner walls, though more than half the height of the crown is removed by wear; and in a sixth, broken across the implanted end, the cavity was about the same as in the fourth specimen, though the crown is less reduced by wear. It would seem, then, that these teeth maintain a waning activity of growth throughout life, or at least during their functional period; the gradual eruption so effected compensating, perhaps, for terminal loss by wear as in the canines.

A portion of the crown of a compressedly triangular tusk, longitudinally striated and transversely marked with downward curving lines of growth, represents, apparently, the left lower canine. Its hinder face, worn smooth by friction with the fore edge of the upper tusk, curves a little outwards and gradually widens as the curve of its inner border diminishes in its ascent. Its summit is obliquely truncated inwards, downwards, and backwards. There is no enamel on this face of the tusk, even below the worn surface, where in the Peccary it turns backwards from the outer and inner faces to cover the base posteriorly. The hinder side of the lower end of the outer face is impressed with a broad groove, as in Dicotyles; in the latter, the groove is bounded anteriorly by a strong enamel ridge

descending from the enamelled surface above the basal dentine. The fossil fragment shows only the upper part of this ridge, where it subsides into the general surface, and even here it is only to be traced by a faint groove on its anterior side.

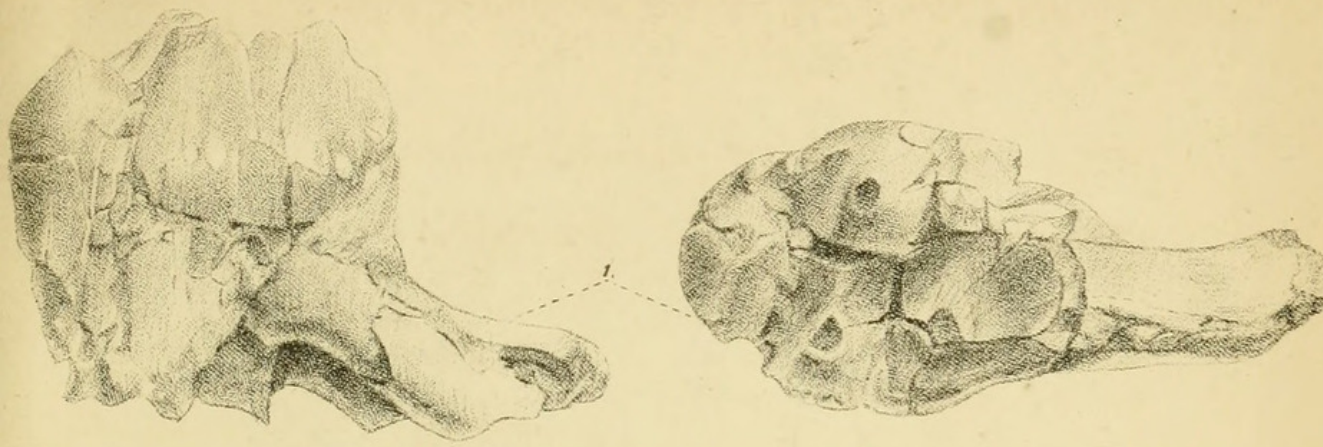
Viewed in front, the tusk has an outward curve, as in the Babirussa. The inner surface is broad, a little convex fore and aft, and obliquely curved longitudinally. There are no signs of ridges at the lower end. Their absence, both from the outer and inner sides, indicates that the fossil is the subterminal part of the tusk. If so, the abrasion of the hinder surface did not extend so low upon the tusk as in Dicotyles, in other words, the upper and lower canines did not antagonise so completely.

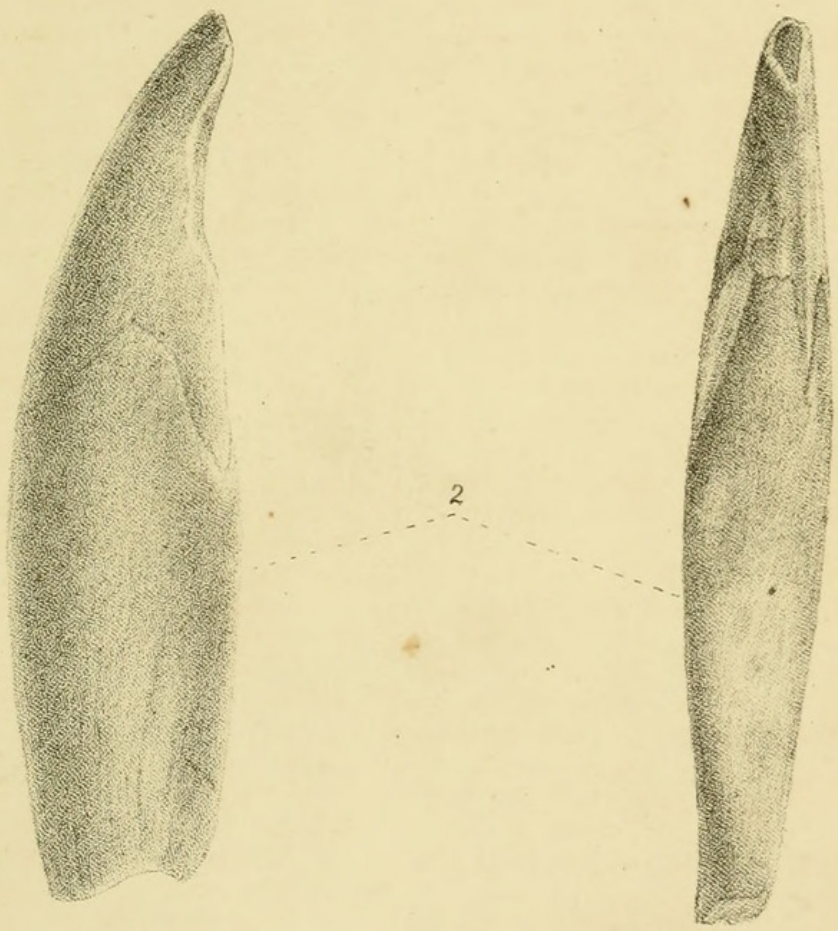
Assuming that these fossils will be found to typify a new genus of the extinct Suillines, I venture to propose for it the name Prochœrus, with the specific limitation *celer*, both terms in allusion to its occupation of the country before the true pigs. The comparative frequency of its teeth shows that it was not altogether a rare member of the post-pliocene fauna.*

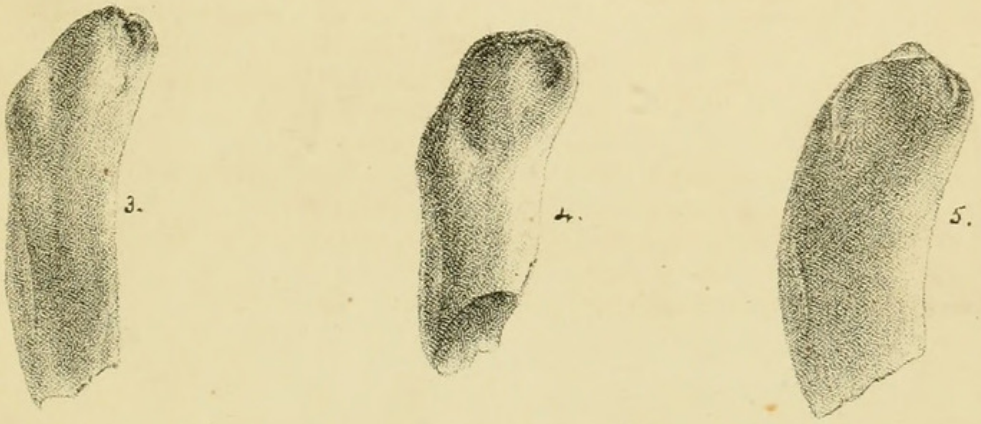
EXHIBITS.

The President exhibited on behalf of the Colonial Botanist —Fruit of Eleocarpus bancrofti, *Bail.* and *F. v. M.*, a tree productive of excellent timber and an edible fruit; the ribbed fruit of Ficus pleurocarpa, *F. v. M.*, probably a valuable timber tree; pods, &c., of Cassia brewsteri, *F. v. M.*, medicinal; fruit of Tarrietia trifoliolata, *Bail.*, a large timber tree; bark of Daphnandra aromatica, *Bail.*, a new spice bark; foliage of Grevillea pinnatifida, *Bail.*, extremely ornamental—the wood, one of the most beautiful of Queensland woods; screw-like pod of Archidendron Vaillantii, *F. v. M.*, a timber tree. Most of the trees of which these illustrations were exhibited were stated to be growing at the Johnstone River.

* The "quinque-tuberculate tooth of bunodont type" was obtained at Sharrow, and the remaining fossils at other localities on the Darling Downs.—Ed.







Prochœrus celer, (De Vis)

1. Molar tooth. 2. Lower incisor.