

NOTES FROM THE OTAGO UNIVERSITY MUSEUM

V. On an "Index-Collection" for small Zoological Museums in the Form of a Genealogical Tree of the Animal Kingdom

EVEN in the smallest museums it is for many reasons difficult, and often impossible, to arrange the representatives of the various groups of animals in such a way as to bring out clearly their mutual relations. Hence arises the need of an "index-collection" in which each group is represented by one or more specimens so arranged as to indicate as accurately and clearly as possible the affinities of the groups they typify. The form which naturally suggests itself as the most suitable for a small type-collection of the kind indicated is that of a solid phylogenetic diagram or "genealogical tree."

An excellent form of "diagram in three dimensions" for lecture purposes has been devised by Haddon; the model I have recently had constructed appears to me to be more suitable for permanent use in a museum.<sup>1</sup>

It consists of a vertical wooden rod about 3 feet 6 inches in height, representing the main line of descent from Protozoa to Vertebrata; from this spring, at various levels, branches representing types which lie off the direct line; these have in most cases an upward direction, but are directed downwards from their point of origin in the case of degenerate groups. At appropriate points on this framework are placed either actual specimens or models of one or more examples of each group.

As the Vertebrata inevitably take up the largest share of space in a museum as well as of public attention, each of the classes of that group is represented on the model, while in the case of Invertebrata one or two examples only are given to each type or sub-kingdom.

For each group—type or class, as the case may be—a label is provided, giving (a) the name of the group, (b) the name of the specimen or model serving as an example of it, and (c) the place in the Museum where representatives of the group are to be found.

A more correct mode of construction for a model of this kind would be to make the branches of such a length as to bring the ends of all of them, and consequently the specimens they support, to one level; advance of organisation would thus be indicated, not by height above the ground, but by distance from a centre. But such a model would be far less convenient than the form I have adopted.

VI. On the Size and the External Sexual Characters of the New Zealand Octopus (*O. maorum*, Hutton)

In his work on the octopus,<sup>2</sup> as well as in his more recent pamphlet, "Sea-Monsters Unmasked,"<sup>3</sup> Mr. Henry Lee states that the largest British specimen he had examined had arms 2½ feet long; that examples with arms of about 4½ feet had been found in the Mediterranean; but that the largest specimens known were those found on the coast of North America (Vancouver's Island), one of which had been measured by Mr. J. K. Lord, who found the length of one arm to be 5 feet.

From this it would seem not to be generally known, even by naturalists, that a species of octopus is very common on some parts of the coast of New Zealand, and notably in Dunedin Harbour, the average size of which is fully equal to, while it occasionally exceeds, that of the specimen from Vancouver's Island just referred to.

I have recently had mounted for this Museum a female *Octopus maorum*, the longest arm of which is 4 feet ¾ inches, but larger specimens have been frequently seen by my assistants and myself. The following are the dimensions of the largest individual—a male—which we have actually measured:—

	Feet	Inches
Length of body and head	1	1
Diameter of body	0	8
Length of arms—		
1st pair	5	5
{ Left	5	5
{ Right	5	5
2nd "	4	10
{ Left	5	2
{ Right	5	2

<sup>1</sup> The model referred to was exhibited and described in detail at a meeting of the Otago Institute on June 9.

<sup>2</sup> "The Octopus; or, the 'Devil-Fish' of Fiction and of Fact." (Chapman and Hall, 1875)

<sup>3</sup> One of the "Handbooks" of the Fisheries Exhibition, 1883.

	Left	Right	Feet	Inches
3rd pair	4	7	2	11
4th "	4	8	4	3
4th "	4	8	4	8
Diameter of largest suckers (on 1st or "dorsal" arms)	0	1	0	1½

Besides the hectocotylation of the third right arm, there is a striking difference between the two series which I have not seen mentioned. In the male the suckers simply undergo a gradual diminution in size in passing from the proximal to the distal end of the arm; they retain their characteristic form, and are easily counted up to about half an inch of the tip. In the female, on the other hand, the suckers become quite indistinct for several inches, and in some cases for fully a foot, from the extremity of the arm, taking on the form of small tubercle-like elevations. As an instance of this difference I may mention that in a male specimen with the first left arm 4 feet 2½ inches in length, from 292 to 319 suckers could be readily counted on each arm; while in a female with the corresponding arm of the same length, only 90 to 115 could be counted on each arm, the distal portions bearing tubercles so crowded as to make it practically impossible to count them.

T. JEFFERY PARKER  
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THE BRITISH ASSOCIATION

SECTION H—ANTHROPOLOGY

Prof. W. Turner read a paper on *The Index of the Pelvic Brim as a Basis of Classification*.—That the inlet to the human pelvis presented variations in outline and in the proportions of its conjugate and transverse diameters has been recognised since the publication by Vrolik in 1826, and by M. T. Weber in 1830, of their important memoirs on the pelvis in certain races of men. In 1866 Zaaier, of Leyden, in his study of the pelvis in women of Java, recognised differences in form in women of the same race, and he expressed these differences numerically, taking the transverse diameter as -100, and then multiplying the conjugate diameter by 100, and dividing by the transverse; the numeral so obtained is the index of the pelvic brim, or "pelvic index." By applying this method to the pelvis in different races of man, a classification of races based on the index of the brim may be framed. In carrying out this method the male pelvis should especially be studied, as in women the pelvis, for sexual reasons, does not present such wide divergences in the form of its inlet as in men. To give precision to the classification, it will be advisable to employ special terms, and in order as far as possible to bring these terms into accordance with those employed in the classification of crania based on differences in the relations of the length to the breadth of the skull, Greek terms will be employed. Thus dolichopellic will signify a pelvis the conjugate diameter of which is longer than the transverse, or closely approaching to it; platypellic, a pelvis in which the transverse diameter greatly exceeds the conjugate; and mesatipellic, a pelvis in which the transverse diameter is not so greatly in excess of the conjugate. Owing to the comparatively limited number of pelvises in the different races of men which have been measured, either it may not be possible to fix definitely at present the numerical limits of each of these groups; but the following were adopted provisionally by the author:—dolichopellic, a pelvis with brim index above 9.5; platypellic, one with brim index below 9.0; and mesatipellic, a pelvis with a brim index between 9.0 and 9.5, both inclusive. The number of pelvic measurements from which the author drew his conclusions were comparatively few, but from these it would seem that the dolichopellic division contains Australians, Bushmen, Hottentots, Kaffirs, and Andamanese; whilst Negroes, Tasmanians, and New Caledonians are mesatipellic, and Europeans, Chinese, and probably American Indians belong to the platypellic group. When a pelvis has dolichopellic characters it approximates in the relations of its transverse and conjugate diameters to the form of the pelvic brim met with in mammals lower than man; and in the dolichopellic Australians, Bushmen, Kaffirs, and Andamanese, the length of the sacrum is on the average greater than the breadth, and this also is an animal character.

Mr. W. F. Stanley exhibited a portable scale of proportions of the human body. The instrument is a small thin scale or rule of ivory, about three inches in length, and