

basi-occipito-sphenoid axis with the plane of the foramen magnum presented considerable variations in the different crania; in the Fuegian it was the lowest, 138° , and it reached its maximum in one of the Australians 157° , but amongst the three Australians it ranged from 139° to 157° . In each skull it was more open than the foramino-sellar angle in the same cranium.

The sphenoido-ethmoid angle presented considerable variation in these crania. Prof. Huxley, in speaking of his corresponding angle, which he calls the basi-ethmoid angle, states that it diminishes in proportion to the downward rotation of the cribriform plate, *i.e.*, in proportion to the departure of the human skull from the arrangement of that plate seen in the lower mammalia. But the cribriform axis is not the only factor in the formation of this angle, for the slope of the basi-occipito-sphenoid axis is not uniform in all crania, and the nearer that the latter axis approaches to the vertical the more would the sphenoido-ethmoid angle be diminished, just as if a downward rotation of the cribriform plate had taken place. Table XIX. shows that this angle possessed a considerable range of variation. It was most open in the New Zealander and Chatham Islander, whilst in the three Australians and the Fuegian it was almost uniform at from 136° to 138° .¹

A line was also drawn from the speno-ethmoid articulation to the most projecting point of the upper jaw-bone and named in the Table the speno-maxillary line, and the speno-maxillary angle, which it formed with the basi-occipito-sphenoid axis was measured. The speno-maxillary line varied considerably in length in the several skulls. It was shortest, 69 mm., in the brachycephalic, mesognathic Hawaiian, and it attained its maximum, 85 mm., in a dolichocephalic, prognathic Australian, the gnathic index of which was 105.8. It possessed also considerable length, 79 mm., in the Chatham Islander and Fuegian skulls, but in neither of these did the gnathic index exceed 98, so that these crania were not prognathic. There was comparatively little variation in the speno-maxillary angle which, in the majority of the skulls measured, exceeded by a very little a right angle, though in the Fuegian A it sank to 89° , and in the prognathic Oahuan D it rose to 101° . The projection of the upper jaw is not the only factor which affects this angle. Undoubtedly when the forward projection of this bone is considerable the tendency of this angle is to become more open, but should the slope of the basi-occipito-sphenoid axis at the same time approach the vertical then the angle would be relatively diminished. Hence I cannot regard this angle as giving an accurate measure of the degree of prognathism.

The base line from the back of the foramen magnum to the fronto-nasal suture, proposed by Prof. Cleland is also given in Table XIX., and as the total longitudinal arc

¹ Prof. Goodsir says that in man the cribriform side of this angle is, in well formed heads, horizontal. In the descending animal series this side rises so as at last to assume the rectangular position (see Lectures on the Dignity of the Human Body, in collected Anatomical Memoirs, vol. i. p. 258. Edinburgh, 1868).