

*nomus acidentatus*, described in Section VIII, and *Hylxerpeton Dawsoni*, Section X, are each represented by only a single specimen, and these did not occur in proximity to any of the portions of cuticle, except that the appendages in Pl. IV, fig. 32, were found near a specimen of the former. Of the three remaining species, *Dendrerpeton Oweni*, from its size, the number of specimens found, and the juxtaposition of their bones to the fragments of cuticle, appears to have the best claim to the integument included under Nos. 1, 2, and 3; and in this case, while the creature had its throat, and perhaps its abdomen, armed with bony scales, its upper parts and tail, as well as its limbs, had a uniform covering of small thin imbricated horny scales, in the manner of many modern reptiles.

If the remaining portions of integument, Nos. 4 and 5, as would seem likely, belonged to two species, both of smaller dimensions, there would seem little reason to doubt that these were *Hylonomus Lyelli* (Section VII) and *H. Wymani* (Section IX). In this case, both of these species must have possessed a highly ornate covering of horny scales and appendages, comparable with that of any of the modern lizards, while there seems good reason to believe, as stated in a previous paper, that they were in part protected by bony scales somewhat like those of *Dendrerpeton*. These points, however, we shall consider more in detail under the sections which refer to the species of *Hylonomus*.

Before leaving these curious specimens of ancient skin, the most ancient I suppose known to exist, it is of interest to observe that the thicker portions, when broken across, have the aspect of jet, or of pure shining coal, and that thin slices, under the microscope, have the same rich brown colour with that material, though rather more translucent. When burned, fragments of the substance give a strong flame, and a bituminous and ammoniacal odour. We have thus an example of the production of coal from animal membrane, no doubt gelatinous and horny in the first instance, but which has proved itself capable of the same chemical changes that have been experienced by the vegetable matter buried with it. In order that this substance should be preserved in this way, it would be necessary that it should either be kept dry and hard, or that it should be immediately buried in matter impervious to air, and kept moist. The latter conditions are the more probable. The preservative qualities of the peaty vegetable matter imbedded with it must also be considered; and it is possible that these hol-