the lungs undergoes many modifications in the different races of Ophidian reptiles. The form is usually that of a simple conical sac, extending from the heart toward the lower regions of the stomach, where it ends in a mem­branous pouch. The trachea, composed of numerous demi- rings united anteriorly by a membrane, terminates in the origin of the lungs by an oblique opening. The latter or­gan is divided more or less completely into two bronchia; in *Boa,* the majority of *Tortrix,* the genus *Dipsas,* and others ; and in these we may perceive the vestige of a se­cond lobule of the lung, sometimes half as large as that on the other side. A singular peculiarity is observable among the sea-serpents. In *Hydrophis colubrinus,* for instance, the tracheal pipe is prolonged into the hypochondriac region, where it terminates in a membranous sac, extending to within a couple of inches of the anus ; but in place of a membrane uniting the rings of the trachea, it is the lung itself that envelopes that tube throughout its whole length.

The small size of the brain in serpents is obvious in all, and becomes very conspicuous in relation to the size of the head, when we select for observation any of those species in which the organs of manducation are strongly developed. The two hemispheres are prolonged by restriction into the olfactive lobule, so that the latter part is borne, as it were, upon a pedicle. We observe the optic lobules on their posterior face, and passing beneath the hemispheres towards the eye, to form the optic nerve. The cerebellum is a very small organ, situate behind the optic lobules, almost uni­form with the spinal cord, or offering but an inconsiderable enlargement. The grand sympathetic nerve is interlaced at so many points with the par vagum, that it is next to impossible to trace its origin with any certainty.

As to the intellectual faculties of these reptiles, we know that Satan found

The serpent subtlest beast of all the field ;

and we doubt not that, even in our own days, they may be placed at least upon an equality with the Saurian and Che- lonian orders. The reproductive power with which their separate parts are said to be endowed has probably been the subject of some exaggeration ; and it seems certain that when the tail or other important portion has been destroy­ed by mutilation, it is altogether incapable of being repro­duced. The sense of smell is believed to be by no means acute in these reptiles. The nostrils vary in the different genera in respect to form, size, and position. It may, how­ever, be stated as a constant rule, that the purely aquatic species have the nostrils small, directed upwards, and for the most part susceptible of being closed by means of a valve, while those of the terrestrial and arboreal kinds are usually lateral and open. Among the burrowing serpents these openings are almost always of an orbicular form, and of very small dimensions. In the genera *Trigonoeephαlus* and *Croralus* there is a cavity on each side of the muzzle, behind the nostrils, of which the use is still unknown. The eye is probably defective in the power of distant vision, though sufficiently acute for all the ordinary purposes of a serpent’s life. It is covered over by the external skin, of which, however, the tunics are in that quarter extremely thin and diaphanous, and present themselves under the form of a hemispherical lamella adhering to the scaly plates which surround the orbit. There is thus no apparent eye-lid to the visual organs of serpents, a slight edging of the skin forming their only protection.@@1 The supposed absence of this part was presumed by the ancients, and has been re­corded in the writings even of modern anatomists of the greatest skill. But more recent researches, undertaken by

M. Cloquet, and verified by Baron Cuvier and M. Dumeril, have demonstrated that the eye of Ophidians is covered by a single lid, large though immoveable, and incased in a projecting frame, which forms around the orbit a series of scales, variable in number, though usually amounting to seven or eight. When the general covering is renewed, we find that *a* delicate coating of the eye is likewise thrown off as a portion of the exuviae. The structure of the ear in serpents seems to demonstrate that these creatures are dull in their sense of hearing.

The general envelope of Ophidian reptiles forms a kind of cuirass, which enables them to withstand the influence of the elements and the effects of external accidents. To con­form to the movements of the body, and the occasional en­largement of its parts, this covering, we need scarcely say, is composed of a multiplicity of separate compartments, of which the smaller are called scales, the larger plates. These parts are composed of much thicker layers of the integu­ment than the intervening portion, which consists of a de­licate skin, seldom visible except when the body is more than usually distended, and for this reason almost always colourless, being unsubjected to the influence of light. In certain species of the genus *Tropidonοtus,* however, the mucous membrane of the neck is so tinted as to exhibit a beautiful vermilion-red between the scales ; and the scales themselves in many species exhibit colours, both fixed anil iridescent, of great brilliancy :—

With burnished neck of verdant gold, erect Amidst their circling spires.

The general tinting depends in a great measure upon the condition of the epidermis, and is always freshest and purest immediately after the casting of the slough or superficial skin. The total amount of longitudinal rows of scales is almost always an unequal number, there being a single range rather larger than the rest along the centre of the dorsal region, with an equal number on either side ; but to this rule *Herpetodryas carinatus* forms an exception (the only one perhaps throughout the order), there being a dou­ble central row of scales along the back. The form of the scales is greatly varied, some being rounded on the margins, others truncated at the extremity, or prolonged into a sharp­ish point. The greater number are what naturalists call *imbricated,* that is, lying slightly over each other like the tiles of a house ; but almost all sea-serpents have the scales of a hexagonal form, with the epidermis very thin.

The median line of the lower parts is usually covered by a range of broad scaly plates, of much larger dimensions than the ordinary lateral and dorsal scales ; and the caudal plates are generally different from those of the abdomen. The latter form a single uniform range from the anus to the throat, where they disappear. They are sometimes narrow, as in the genera *Boa, Tortrix,* &C., and in such cases re­semble the scales of the back ; but in the far greater num­ber they are so broad as to encroach even on the flanks, and thus occupy a large proportion of the circumference of the body. The plates beneath the tail do not form a single central range, except in *Boa, Eryx,* and a few other Ophi­dians, the majority of the order having the part in question provided with a double row of plates. We may add, that the terminal plates of the abdomen also not unfrequently partake of this divided character.

The head of Ophidian reptiles is rarely clothed with scales of a character similar to those of the body. They are larger, and of a more determinate and symmetrical form ; and as they offer distinctive characters of easy application, they have received from M. Schlegel various names, in accord·

@@@1 “ Nous avons dèja dit qu’il n’y avait pas de paupières apparentes dans les serpens, et que ces animaux semblent, par cela même, avoir l’œil file, et être toujours éveillés." ***(Erp. Gin.*** i. 102.)