

There is strong reason to believe that the "ovoid gland" of an Urchin or Starfish does not communicate with the exterior through the madreporite as described by Perrier, while there can now be no question respecting its direct connection with what has been generally described as the oral blood-vascular ring of these types. Koehler's observations¹ have demonstrated this connection in the Urchins, although it was categorically denied by Perrier.² It thus seems probable that although the "ovoid gland" can no longer be described as a heart or even as a plexus of interlacing vessels, yet that it is a glandular structure interpolated in the blood-vascular system, and possibly one of the factories of the well known respiratory pigment of the Echinoderms. The following remarks by Welldon³ are noteworthy in connection with this subject:— "It is not too much to say that in every group of Invertebrates in which the vascular system has been at all carefully investigated, glandular appendages to the vessels have been found, which can, from their anatomical relations, have no other function than that of elaborating some of the constituents of the blood. . . . In Echinoderms, the abundance of glandular cells in the cardiac plexus is probably a principal cause of the whole organ being regarded by many observers as an excretory apparatus."

NOTE G.

(Page 119.)

THE NERVOUS SYSTEM OF THE CRINOIDEA.

Since the section on the nervous system was written (*ante*, pp. 111–127), the subject has been still further discussed by various morphologists, most of whom, I am glad to say, have adopted the views advanced therein, and have strengthened them very considerably. As in so many other cases, it appears that the doctrine of the nervous nature of the axial cords in the skeleton of a Crinoid is not of such recent growth as has been supposed. For the following passage from von Schlotheim⁴ would seem to show that a nervous function was attributed to the contents of the central canal of the skeleton more than sixty years ago:—"Da die Encriniten aber sämmtlich mit einer durch alle Zweige laufenden Nervenröhre versehen sind, und das Thier wenn es gleich mit der Wurzel angewachsen zu sein scheint, doch mit allen seinen festen Theilen beweglich bleibt, so gehört er offenbar nicht zu der Corallenarten, und macht nur ein merkwürdiges Verbindungsglied zwischen der Classe der Crustaceen und der Zoophyten aus."

A general, and, on the whole, tolerably accurate account of the morphology of living Crinoids was published by Weinberg⁵ in the course of last year (1883). It is principally

¹ *Op. cit.*, p. 65, pl. 3, fig. 13.² *Archives de Zool. expér.*, vol. iv., 1875, p. 613.³ On the Head-Kidney of *Bdellostoma*, with a suggestion as to the origin of the Suprarenal Bodies, *Quart. Journ. Micr. Sci.*, vol. xxiv., 1884, N. S., pp. 180, 181.⁴ *Die Petrefactenkunde*. Gotha, 1820, p. 327.⁵ *Die Morphologie der lebenden Crinoideen mit Beziehung auf die Form Antedon rosacea*, Linck, *Der Naturhistoriker*, 5 Jahrg. März–Juni Heft, 1883, pp. 266–307.