

The following are the plants included in the latter of the two classes, and the principal points noticed with regard to them.

1. *Sphaeria angulata*, Fr. The occurrence of a state of fructification similar to that in the genus *Cryptosporium*; the varieties of structure in the normal sporidia, and the probable origin and nature of the abnormal fruit.

2. *Sphaeria lanciformis*, Fr., and *Hendersonia polycystis*, B. & Br. Irregularity of form in the sporidia of *Sphaeria lanciformis*. The growth of perithecia in the same stroma, some producing the fruit of *Sphaeria lanciformis*, others that of *Hendersonia polycystis*. Notice of the probable existence of a third form of fruit of *Sphaeria lanciformis*.

3. *Sphaeria siparia*, B. & Br., and *Prosthemia betulinum*, Kunze. Constant association of the two forms; their external resemblance; nature of the fruit and other circumstances leading to the conclusion of the identity of the two plants.

COMMUNICATIONS RECEIVED SINCE THE END OF THE SESSION.

I. "On the Anatomy of *Tridacna*." By JOHN DENIS MACDONALD, Esq., Assistant-Surgeon R.N. Communicated by Sir JOHN LIDDELL, C.B., M.D., Director-General of the Medical Department of the Navy. Received June 25, 1857.

(Abstract.)

The author first explains the peculiar position which the animal of *Tridacna* occupies in its shell, in which it differs from bivalves in general. He then describes the mantle and its borders, the membranous interpallial septum, the respiratory and wide pedal openings communicating with the interpallial space, the two pairs of branchiae, the mouth with the anterior and posterior lip and the four oral palps, the foot, the extensive cloacal cavity with its subdivisions, and the circular contractile cloacal orifice opening on the dorsal surface. He next gives an account of the form and arrangement of the ali-

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mentary canal, and its relations to the liver and large ovary; and describes a large viscus situated in the space between the ovary, the adductor muscle, the base of the foot and the pericardium, divided into a central and two lateral portions, and secreting a dark brown liquid loaded with fatty matter. This body he thinks may be connected with the secretion of the byssus, but, at the same time, remarks that it may be homologous with the organ of Bojanus. Lastly, the anatomy of the heart and great arteries is given, and is in substance as follows.

On cutting through the floor of the cloaca, the pericardium is laid open, and in it is seen the large, rather square-shaped ventricle, with a capacious but thin-walled auricle opening into it on either side, through an orifice guarded by semilunar valves. From the thick-walled ventricle, a short tube conducts into a conical dilatation or *bulbus arteriosus*, with muscular walls, having its base included in the pericardium, and giving rise near its narrow end to the anterior and posterior pallial arteries; whilst a visceral artery passes from the ventricle to the ovary and adjacent parts. As in other bivalves, the intestine, before its termination, passes through the heart: in coming through the pericardium, surrounded by that membrane, it forms a short round pedicle which joins the fore part of the ventricle; it is then continued through the ventricle and *bulbus arteriosus*, and finally opens into the cloaca. The blood from the ventricle flows between the outer surface of the intestine and the inside of the sanguiferous channel; and "that part of the intestine which traverses the *bulbus arteriosus* is closely surrounded with elongated membranous valvulæ, which arise from the anterior part of the chamber where the gut enters, and are fixed by a number of cordæ tendineæ to the posterior wall, where it makes its exit;" a contrivance which permits the blood to pass between the rectum and the little valves, but prevents its reflux.

The description is illustrated by drawings of the exterior of the animal and of the particular parts specially referred to, and also by a diagram representing the general arrangement and relative position of the several organs.