

*Some curious Facts respecting the Walrus and Seal, discovered by the Examination of Specimens brought to England by the different Ships lately returned from the Polar Circle. By Sir Everard Home, Bart. V.P.R.S. In a Letter addressed to Sir Humphry Davy, Bart. P.R.S. Read March 4, 1824. [Phil. Trans. 1824, p. 233.]*

The first fact stated by Sir Everard Home in this paper is the analogy in structure between the hind foot of the Walrus and the foot of the Fly. In both these is a very similar apparatus for producing a vacuum, so as to enable the animal to proceed upon smooth surfaces against gravity, by the adhesion of the feet thus effected; there being two cups in the foot of the fly and one in that of the walrus for this purpose. Secondly, he notices the peculiar mode in which the bile in the walrus is collected in a reservoir, and thence forcibly impelled into the duodenum.

The third new fact which the author adduces, is the peculiar structure of the funis and placenta of the Seal. In this animal the vessels forming the funis are not twisted; their whole length is nine inches; after passing three inches from the navel of the fœtus they give off anastomosing branches, connected with it by three membranous folds, between which the blood-vessels are conveyed to the placenta. This structure gives uncommon facility to the placental circulation, and makes it worth inquiry whether the same peculiarities exist in other marine animals.

Several illustrative drawings accompany this paper.

*Additional Experiments and Observations on the Application of Electrical Combinations to the Preservation of the Copper Sheathing of Ships, and to other purposes. By Sir Humphry Davy, Bart. P.R.S. Read June 17, 1824. [Phil. Trans. 1824, p. 242.]*

Since his former communication the President has had an opportunity of prosecuting his researches upon the above subjects, upon an extended scale, and with results perfectly conclusive and satisfactory. He found that sheets of copper defended by from one 100th to one 150th part of zinc or iron, exposed for many weeks to the full flow of the tide in Portsmouth harbour, suffered no corrosion, and that even one 1000th part of cast iron exerted great protecting influence. Boats and the sides of ships protected in this way were also similarly preserved. Of the different protecting metals cast iron is most convenient, and the plumbaginous substance formed upon it does not impede the electrical action. The President formerly anticipated the deposition of earthy substances upon the negative copper, and this he now found to take place upon sheets of copper exposed about four months to seawater, and defended by from one 50th to one 80th their surface of zinc and iron. They became coated with carbonate of lime and magnesia; but this effect is easily prevented by duly diminishing the proportion of the protecting metal, so as to prevent the excess of negative power in the copper, which then remains bright and clean.