

will, therefore, be those who will look to nature for art, science, or mechanics." This conviction the author tries to enforce by pointing out what he regards as instances in which nature is superior to art, or has suggested appliances in use. These convictions are illustrated by some 750 woodcuts showing supposed parallelisms between nature and human constructions, which are always curious, sometimes amusing, and occasionally so far-fetched as to be ludicrous. Thus the inverted sea-anemone swimming boat-like is taken as one of the prototypes of a boat; comparison is made between the claws of carnivorous animals and a fish-rake; between a lobster or armadillo and a suit of plate armour; the cocoon of the silkworm and a fire-proof safe; a lobster's claw and sugar-tongs. The subject is treated under headings such as "Nautical," which treats of rafts, oars, paddles, screws, masts, sails, cables, and anchors. Under the heading "War and Hunting," Captain Hall's amusing account of an Esquimaux story as to the way in which a bear gets on a cliff and rolls great stones down so as to crush in the skull of a walrus underneath, is repeated in good faith as a natural prototype of the defence of a pass by hurling stones on the advancing enemy. Other sections relate to architecture, tools, optics, the useful arts, and acoustics. If the quaint purpose of the book is forgotten, it will be found amusing and gossipy, grouping interesting natural history facts in new and sometimes suggestive ways. It is rather a book for young people and for general reading than a scientific treatise properly so called, or a rational account of nature's teachings.

In 1862 Mr. Darwin showed by his book on the fertilisation of orchids how admirably the structures of those plants are formed to necessitate, favour, or permit cross fertilisation by means of insects. The author has since followed the subject out experimentally in other groups of plants, and gives his investigations and their results in the present memoir on "The Effects of Cross and Self-Fertilisation in the Vegetable Kingdom."²⁹ It is found that plants which are fertilised from another plant, or crossed, grow higher in most cases than plants which are fertilised each from its own male organs or flowers. The plants experimented upon were grown in parallel strips or on two sides of the same pot, and as far as possible under the same conditions, except that the self-fertilised plants were covered with a stretched net, with meshes a tenth of an inch square, which keeps out all the insects except Thrips. But the results do not seem attributable to the influence of the net, which obviously must materially affect the heat and light reaching the plant, because some of the crossed plants also have had a net stretched over them in several of the experiments, which have been carried on for eleven years. The book consists of an introduction, five chapters of experiments on convolvulacæ, labiatæ, cruciferæ, leguminosæ, solenacæ, and various other natural orders; three chapters showing the results of these experiments on height, weight, constitutional vigour, and sterility, in all of which the evidence is in favour of

²⁹ "The Effects of Cross and Self-Fertilisation in the Vegetable Kingdom." By Charles Darwin, M.A., F.R.S., &c. London: John Murray. 1876.

cross fertilisation. Then follow two chapters on the means by which fertilisation of flowers is carried on, while the twelfth chapter gives the general results. The book is so full of detailed facts, valuable to original observers, that it more resembles memoirs issued by scientific societies than works published in the ordinary way; and it is not impossible that it would have been more read had the author shown more consideration for those of his readers who do not find it necessary to follow his every experiment. There surely can have been no need to present the whole of this evidence, since, by its nature, it is capable of being greatly added to. The subject, however, is a small one, and has been amply worked out to establish the points which are thought to be important. The practical bearings of the investigation would appear to be of the greatest value, since self-fertilised cabbages, for instance, had only a quarter of the weight of those crossed with a fresh stock; while in many cases the fertility of plants which are crossed is twice as great as in the self-fertilised, a single cross often being sufficient to remove the influence of continued self-fertilisation when that has been bad. In concluding, Mr. Darwin speculates on the reason for the separation of sexes, and for the existence of males, and seems to see some light thrown on the problem by the deterioration of the race under self-fertilisation, this deterioration appearing to result from the conditions of existence remaining unchanged. Since males often have different ways of life from females, they are supposed thereby to counteract evils which have usually been attributed to breeding in and in.

One more treatise on the whole science and art of medicine, specially so called, has appeared to contest the field with its many predecessors. Dr. Bristowe's treatise³⁰ has been long expected, and from the well-known ability and judgment of the author a favourable reception was assured for it. Nor can we say that anticipations so raised are without their fulfilment. Dr. Bristowe's treatise is in many respects an admirable one. The matter is arranged more in accordance with philosophical method than in preceding treatises, and we think that this has been done without any loss of practical usefulness. Moreover, the work is one which has evidently been written by a full man—by a man indeed more full than ready, we should say. We have turned the volume over a good deal, and referred to many important chapters, and we have rarely or never failed to find adequate teaching and argument in all that relates to pathology and clinical observation. The author presents us not merely with sufficient facts, but he treats his facts broadly and simply, and treats them not as a scribe, but as an experienced and ripe observer who has definite views of his own. We certainly advise those of our readers who are concerned directly with the subject to buy the work; but, at the same time, they must not suppose that it is in all respects attractive or valuable. Its chief defects are two—the style is wearisome and verbose, and the sections on therapeutics are perfunctory and uninteresting. As regards the style, it is not that the writer is

³⁰ "Treatise on the Theory and Practice of Medicine." By J. S. Bristowe, M.D. London: Smith, Elder, & Co. 1876.