

and *Stenobothrus*, etc., 'The Hares of Herts' (with Fuller and Hunt), 1855; 'Lodges' (Plains) illustrated with Frederick Stoddart, 1855, and 'The Deer Country, 1856, the volume of Patrick Murray's *Practical Works*, 1855, is ready; but as Mr. David Laing has promised to write an Introduction, it will be kept back till that is printed. The *Oxford list* is Lord Sturton's 'History of Chess,' 1859, 'The Mares when Charles Stuart,' 1861, and 'A Sacred Memoir,' 1870. The second of these volumes is unique; but, unfortunately, wants the whole of sheet B. This will be supplied from the second edition of 1850; failing it, from the third edition of 1859 in the last title. The Council is indebted to Dr. George Knapp for the loss of Lodge's 'Outline Sketches in his *Biographies*,' 1851, and 'The Friends of Christ's Way,' 1856, the volume of which are to appear shortly. It was supposed that the second part of the *Biographies*, 1857, would have been ready by the issue of this date, but the volume has proceeded so slowly that the requisite number of pages is not yet printed. It will probably be given with next issue.

Two papers concerned the death last week of Mr. John Hodgkin. He was a member of the bar, a brother of the late Dr. Hodgkin, and a leading writer on topics connected with the Society of Friends.

REVIEWS

Insectivorous Plants. By Charles Darwin, M.A. F.R.S. With Illustrations. (Morsey.)

It is now inclined to be supposed we should take exception to the title of this work. Mr. Darwin, as we shall presently show, presents a vast body of evidence to substantiate his opinion that insects, and animal matters generally, are not only captured by, but dissolved and absorbed by, certain plants. Further he, not only says this, but even proclaims that any plant actually devouring any insect. In the case of the higher animals, the first process in the act of dining is that of prehension—the prey next that is caught. The animal dies thus immediately, and by its effort of will. In the various insect-catching plants, prehension is a much more complicated process. Certain hares and certain plants make a sticky secretion, which, as we may presently see, adheres in some way to the insect. As a bait is caught with this stickiness, so the caterpillar, when he is seized a preyer by the secretion from the plant, never being removed the more is prepossessed by the fact that the hares, because the white had, or considerable portions of it, exhibits a kind of velvety surface, by means of which, when entangled by the last part of the insect, they move on the surface of the sticky plant &c. The velvety nature is then finally withdrawn, so that we are presented to the surface of the sticky and well-removing head of *Utricularia*. Not, to proceed, while prehension of food in the first may lead to the higher animals and in these the catching plants, the necessary stages are different. There is not prehension in the case of the plant, there is an swallowing process, and, therefore, we are immediately brought to depending to the term "insectivorous" as applied to this volume. It may be thought that this

is mere splitting, and so, in a sense, it is; but in another sense we hold it to be justified by the necessity of pointing some check on the old-fashioned style of writing which is fast giving its period scientific literature, a style which will describe rather than advance the real progress of science. We admit the temptation is great. The general public have in the many years, been so fed on scientific science, from the library that, that there is little chance of any expounding with much more appreciating the severely simple style in which scientific writers should express themselves.

Let us at once hasten to say that the author of this book is guilty of no such fault of expression. If objections may be raised to the title, there can be made to the style. On the contrary, Mr. Darwin's book may be held up as a model of what a treatise should be that is addressed to intelligent readers, a majority of whom, if to be persuaded, have no special acquaintance with the matter under consideration. In style it is strongly marked with Darwinian characteristics. The opening passage, indeed, showing the difference of subject, is drawn up almost precisely in the same way as that which occurs in simpler one of the "Origin of Species." We have had before us the same evidence that led the author to present his researches in the first instance, at the least in 1859; then, step by step, we are brought to the history of those researches; that is added in that, inference to inference, till at length the body of evidence, direct and indirect, becomes so overwhelming, that there is no little chance of overlooking Mr. Darwin's conclusions on them in a day or so, when even one has been taught in the usual course of a student. The ordinary, as perhaps needless, the suggestions are to the knowledge the lessons of others, even in this as in the rest of Mr. Darwin's books. These theories are demonstrated, as we venture to call them, are only supported by the apparently unobtainable positions with which he has prepared the observations and experiments throughout many years. All this need be acknowledged even by those who refuse to accept the validity of Mr. Darwin's reasoning and conclusions. The statement of facts is himself put forward may always be confidently relied on. The statements of others which he cites may not in all cases be so trustworthy; and yet Mr. Darwin himself seems to attach no such importance to them as to the very researches. The ordinary reader will probably do so too, but the scientific reader must be more elastic in this regard, and, indeed, it would be to us, for he will soon find that the degree of perfection of Mr. Darwin's observations is, in many cases, considerably above the average of that of other papers.

The lower having been sought, say to the end of a number of flowers, the hares clearly but surely useful and doing the intended. The sticky secretion of the glands gives place to one of an acid nature, and of more solvent power. The other names of the contents are dissolved by the aid of the solvent and of a ferment like the pepsin found in animal stomachs. The evidence of this being it as yet seen a matter of inference than of actual demonstration. In any case, solution and subsequently absorption of nutritive matter takes place. The fact is that these two last perform the functions of the stomach,

and intestinal canal of animals. One difference, then, which need to be laid down between plants and animals, to the effect that the one had, and the other had not, a stomach, is shown to be only partially true. But the reader may perhaps inquire with the remark:—The nature of insects may be after all a merely mechanical or rather chemical process, and so on. No doubt in a sense it is, but it is something more, and for the reason that certain substances are more freely dissolved than others, and some are not at all acted on. It is a matter of fact, we find that while almost any substance may, by the irritation caused by its impact, cause the movements of the sensitive hairs to which we have alluded, it is substances into the composition of which nitrogen enters, such as meat, albumen, fibrin, cartilage, the pulps of livers, &c., that cause this motion more particularly, and it is almost exclusively such substances which are dissolved and absorbed by the plant. In this statement, altogether, the great solvent nature of hares, contribute one of the few exceptions.

We must leave the reader to consider for himself the evidence adduced by Mr. Darwin. All that we say of it is that it is direct and positive, that it is convincing, that it is based on actual eyes and ears again for a series of years in rigorous investigation, and, therefore, it comes before us with every claim for acceptance. A vast number of substances were experimented with, and always with similar results. Among them we may especially allude to the results of the experiments with salts of ammonia. These make great activity in the white hares, even to such an extent that small quantities that the contents of the stomachs of the hares seem to be less dilute than hares, for it is not to be considered we have here seen merely an indication of the existence of a particular substance, such as it given by the spectroscopy, but direct evidence of a certain effect produced by a certain substance. We have here a parallel case to the practically infinite availability of matter down in the case of bread, portion of which, we need to be contented of yet comprehend the whole a distinct impression on the ordinary person. This power of absorbing nitrogenous matter by means of the glandular hares, as illustrated by Mr. Darwin, is a certain point gained for vegetable life. With such a vast quantity of nitrogen in the atmosphere, it has always been a matter for surprise that it should not be absorbed by the lower life. Mr. Darwin's researches show that at least under certain conditions it may be done. Indeed, we would gladly repeat that these experiments and conclusions will prove the starting point of new lines of thought and investigation, and open up an entirely new chapter in physiology. The various opposite effects produced by some substances as contrasted with others will, we think not, also lead to important practical results in plant-cultivation as also in medicine.

The function of the glandular hares in plants, as we may gleaned from what we have before stated, seems considerable doubtless, though Mr. Darwin is careful not to commit himself to the statement that they are necessary, as in all cases, abundant as well as occurring again. The abundance of these glands, in other cases as the flowers, &c., or in the leaves themselves, as, for instance, in