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In 1781, Dr Erasmus Darwin, by the publication of his too little known poem, "The Botanic Garden," made popular many phenomena of plant life which had previously attracted but little attention from even the scientific men of his day. The charming way in which he described such operations as those required for fertilisation in Valisneria spiralis and other plants, and the curious sensitiveness of others, awakened in thousands an interest in vegetable physiology which no amount of scientific writing would have done; and since his time, investigation has shown that there are very numerous marvels in the vegetable kingdom even surpassing those of which he sung so sweetly. Poetry, however, can only tempt the unscientific. The true scientist must be supported by undisguised facts; for he is the pioneer who quarries the materials, which, having been realised, he leaves it to others to apply them to the diffusion of knowledge. The poet did his work, and did it well. 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The greater part of this most interesting book is devoted to a minute and exhaustive examination of one of the most common of the insectivorous plants—*Drosera rotundifolia*: every point in its structure is described, and the peculiar method of capturing its insect prey, when touched, by the inflection of its tentacle-like hairs, together with the nature of this apparently animal motion, are first placed before the reader, who, if one of the old school, will be quite convinced that the idea once universal amongst botanists, that the insect prey was simply captured by the viscid secretion on the glandular terminations of the hairs with which the blades of the leaves are fringed, is now no longer tenable. These hairs, with their glandular terminations, are now seen to resemble the tentacles of many of the lower invertebrate animals, and the plant itself appears gifted with a power of volition, selecting only such materials for the exercise of its extraordinary powers as will conduce to its wants; and it is still further proved to us that the viscid secretion has an effect analogous to the gastric juice of animals, producing solution of the nitrogenous matters in the prey which the glands themselves ultimately absorb for the nutrition of the plant—in fact, every leaf of a Drosera seems gifted with the same functions as the decidedly animal organisms which, like *Amœba*, absorb their food through their external membranes. The extreme sensitiveness of the leaves of Drosera is most wonderful. M. Darwin says—"It is an extraordinary fact that a little bit of soft thread one-fiftieth of an inch in length and weighing one eight thousandths of a grain, or of a human hair, eight thousandths of an inch in length, and weighing only one seventy-eight thousandths of a grain, or particles of precipitated chalk, after resting for a short time on a gland, should induce some change in its cells, exciting them to transmit a motor impulse throughout the whole length of the pedicel, consisting of about twenty cells, to near its base, causing this part to bend, and the tentacle to sweep through an angle of above one hundred and eighty degrees." "A bit of hair one-fiftieth of an inch in length, and therefore much larger than those used in the above experiments, was not perceived when placed on my tongue; and it is extremely doubtful whether any nerve in the human body, even if in an inflamed condition, would be in any way affected by such a particle supported in a dense fluid, and slowly brought into contact with the nerve. Yet the cells of the glands of Drosera are thus excited to transmit a motor impulse to a distant part, inducing movement. It appears to me that hardly any more remarkable fact than this has been observed in the vegetable kingdom." The author is certainly right in this inference, but he has further proved its truth by the clear details which he has given throughout his book of very numerous experiments on the living plants, every one of which only increases our wonder at the subtle nature of the actions of the plant and the sagacity with which Mr Darwin has pursued his inquiries regarding them. It is especially satisfactory that Mr Darwin has especially chosen our own beautiful little Sun-Dew Drosera rotundifolia for chief part of his investigations, because it can be found abundantly on most of our moors and boggy heaths, and therefore is to be had easily by all who choose to examine for themselves; whereas had he chosen its at first sight more strikingly curious ally, the Venus fly-trap (Dionæa muscipula), it being a rare stove plant difficult of cultivation, few could have followed him in his investigations. Whilst, however, choosing the typical plant of the order for his

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There is no branch of natural history which has had more ardent students and more competent exponents than ornithology; nor is there any which is more popular in Great Britain. Under these circumstances, there will be no lack of appreciation of the contribution which Mr J. E. Harting—already favourably known to naturalists by his excellent "Handbook of British Birds"—has made to the literature of the science in *Our Summer Migrants* (3). The book is a description of the migratory birds which pass the summer in the British Islands. It contains a mass of information which cannot fail to be of value to students of the science, while this information is presented in such a way as to interest the general reader. Mr Harting's knowledge is not limited to an acquaintance with the literature of his subject, as to the study of museum specimens; he is an acute and persevering original investigator and observer. Abundant evidence of this is to be found throughout the volume, but especially in the papers on "The Cuckoo" and "The Golden Oriole." Mr Harting describes more than fifty birds which are summer visitors to Great Britain; and the practical worth of his descriptions is enhanced by figures of the birds, carefully reproduced from the admirable designs of that king of wood-engravers, Jewick. As a sample of the style in which Mr Harting treats his subject, take these few notes on the nightingale:—

"It is curious how widespread is the belief that the nightingale warbles only at eve. The reason, no doubt, is that amidst the general chorus by day its song is not noticed or attended to. But that it sings constantly by day is a fact of which we have satisfied ourselves repeatedly. Moreover, it is by no means the only bird to sing at night. The sedge warbler, grasshopper warbler, woodlark, skylark, and thrush may often be heard long after sunset; while the cuckoo is frequently

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The Scotsman
July 1875

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