

FLOWERS OF THE PRIMROSE DESTROYED  
BY BIRDS

WE have received a number of answers to Mr. Darwin's letter on this subject in NATURE, vol. ix., p. 482; these we have thought it advisable to bring together here. On the general question of the destruction of flowers by birds, Prof. Thiselton Dyer writes as follows:—

MR. DARWIN remarks that he has never heard of any bird in Europe feeding on nectar. There is perhaps one well-authenticated instance in Gilbert White's "Selborne" (illustrated edition, p. 186): "The pettichaps . . . runs up the stems of the crown imperials, and putting its head into the bells of those flowers, sips the liquor which stands in the nectarine of each petal." This is the more curious, because, according to Kirby and Spence ("Entomology," 7th edition, p. 384), this plant "tempts in vain the passing bee probably aware of some noxious quality that it possesses." I do not know how far this is true, but it has a peculiar odour which makes it rather unpopular as a garden plant.

I have, in my note-book, another instance, also from the *Liliaceæ*, of a plant visited for nectar in an extra-tropical country. Mrs. Barber relates that in South Africa "the long tubular flowers of the aloe are well supplied with nectar, and this provision affords during the winter season a continued store of food for our beautiful sun-birds," the numerous species of the genus *Nectarinia* (Journ. R. Hort. Soc., n.s., ii. 80).

Two other cases of the destruction of flowers by birds occur to me. I was assured this year that the flowers of the common crocus are persistently destroyed by sparrows, at least in the neighbourhood of Hammersmith. The base of the perianth tube, which is the usual seat of any secretion of nectar, is here beneath the surface of the ground; perhaps, however, the style and stigma are attractive to the birds. I did not investigate the matter at all closely, but my informant was an observant person, who I think would be likely to have satisfied himself that the sparrows really did the mischief, the effects of which were obvious enough. If so, we have a clear instance in crocus-eating of an acquired habit on their part.

The other case, that of the destruction of flower-buds of fruit-trees by bullfinches, is probably well known. The mischief is said to be out of all proportion to any benefit the birds can derive from it, as regards food. Such a visitation would obviously tell heavily against the plants in any country where they formed part of the indigenous flora, and had to take their chance with the rest.

Dr. J. H. Gladstone writes, that in his garden the flowers of the primroses have been similarly bitten off, and the crocuses also. He says—

ONE morning some weeks ago I especially remember seeing the beds and the gravel walks strewn with the yellow petals of the latter flower, which were severed from their stalks, and bore abundant marks of the sharp beaks which had torn them asunder. I cannot learn that anyone saw these London birds at their destructive work, which was probably done before any of us were stirring.

Mr. T. R. Archer Briggs, of Plymouth, writes—

I HAVE been familiar with the fact to which Mr. Darwin directs attention for as long a period as that during which he says it has engaged his own, without, however, my being able to point out the author of the mischief. In the neighbourhood of Plymouth it is no uncommon thing to find the flowers both of the primrose and polyanthus bitten off and lying around the plants exactly as Mr. Darwin has described; indeed, so often does this occur here, that I have known it a source of annoyance to cultivators of the latter plant. When residing some years ago at a house in the parish of Egg Buckland, about four miles from Plymouth, I remember to have repeatedly seen the polyanthus flowers in the grounds so destroyed, and to have heard it asserted that the redbreast was the culprit; but of this no proof was brought forward. The locality is a land of springs and streams, and it could not have been a want of water that led the destroyer to do the work there.

The tubular portion of the primrose is much infested by small insects (*thrips*?), and I have sometimes thought that a bird, for the sake of feeding on these, might be led to bite the flowers;

but, on the other hand, they are so minute that one can scarcely think they would attract its notice.

I would say, in reply to Mr. Darwin's queries, that primroses are in profusion about Plymouth (at least beyond the immediate neighbourhood of the town, whence they have been rooted out by wretched fern- and wild flower-grubbers), but I have never seen the flowers bitten off to such an extent as in the small Kentish wood he refers to, or in a sufficiently large quantity to materially affect the numbers of the species here.

The Rev. H. C. Key, of Stretton Rectory, Hertford, says that primroses being in great abundance in his neighbourhood, he was led by Mr. Darwin's letter to make a careful search for flowers bitten off in the way he describes, but he failed to find even one.

It is obvious that the abundance of other food for which birds have a preference—such as apple, pear, plum, and cherry blossoms afford—may possibly have saved our primrose flowers from destruction; but, taking into consideration the fact that animal food must necessarily be supplied to the young birds at this season, I should be disposed to suggest that the primroses Mr. Darwin speaks of have been mutilated by birds rather for the sake of procuring thrips and other beetles, which are attracted by the nectar, than for the nectar itself.

I find the untouched primrose flowers here swarmed with beetles and acari; but the great profusion of apple, and pear-blossom, &c., close at hand, may prove more attractive to the birds from the flowers being more open, and therefore more easily accessible.

Mr. G. M. Seabroke writes—

I HAVE observed the same thing as he relates in my small garden in this town. Nearly all the early buds from some twenty primrose plants were bitten off, and birds of some sort were undoubtedly the perpetrators of the mischief. I laid the blame on the sparrows, but did not see them in the act. This is the first year that I have noticed this form of depredation.

Mr. T. R. Stebbing, of Torquay, writes as follows:—

A FORTNIGHT ago the bank on either side of the road from Kingsbridge Road Station to Salcombe were covered, for many miles, with a brilliant profusion of primroses in bloom. In all this long range of country, eighteen miles in all, there was no appearance anywhere of that destruction of blossoms as to which Mr. Darwin makes inquiry. The attention of my companion and myself was especially directed to the primroses throughout our route, not merely by the lavish and unexpected beauty of the display, but by the look-out which we were keeping up for white or red varieties. Among the myriads of plants with the ordinary yellow blossom we noted five with white and two with pinkish flowers. On returning over a portion of the same road ten days later, we detected as many as seven plants with the pale-red or pink flowers, but none of these were blooming freely like the white and the yellow flowering-plants in the same district.

It may be worth noticing that this great stream of primroses flowed down from the rather bleak upland near the railway right into the fertile and sheltered valley of Salcombe, so that in one district or the other the birds might have been expected to seek the nectar, had they been to the manner born, in this part of the country.

A correspondent, E. T. S., says that—

IN the north-west corner of Hampshire the birds have the same taste as in Kent for the nectar of primroses and polyanthuses. A few weeks ago a correspondent wrote thence that this spring the blackbirds "were as bad as peacocks," whose well-known habit of cutting off the blossoms of polyanthuses, carnations, lilies, and any particularly choice tropical plant that they can get hold of, makes them a gardener's despair. A peacock who resided for a short time in the neighbourhood referred to, might possibly have taught the native birds the trick, but this is hardly probable, as he died three winters ago, and the present year, when all spring flowers have bloomed earlier and more abundantly than usual, is the first in which his example has been extensively followed. I should doubt the practice being limited to a single species. Sparrows certainly gather flowers very carefully; I have seen them almost strip a bed of the variegated arabis, though in this case the flower-stalks were carried away and used, not for food, but in nest-building. Does any other bird use fresh flowers for that purpose?

## JOHN PHILLIPS

BORN DECEMBER 25, 1800: DIED APRIL 24, 1874

THE daily press has already spread the sad tidings from Oxford that Prof. Phillip met with an accident which suddenly cut short his life while in good health and such full vigour that we still expected work from him. A few days ago he was here amongst us in London, bearing himself with form as erect and step as elastic as if the last ten years had but further mellowed though in no way lessened his energy. Now we learn that a stumble over a door-mat, on leaving a friend's rooms in All Souls, followed by a heavy fall, has deprived Oxford of one of her brightest ornaments, and men of science of a genial friend.

Another bond is broken which linked together by a living presence the geologists of to-day with those who watched the infancy of the science which, in place of wild phantasies of the imagination as to the origin of our planet, substituted a patient and careful investigation of its structure, as far as observation was possible. From the time when William Smith in 1792-3 surveyed the ground between High Littleton and Bath for the Somersetshire Coal Canal, and proved an unvarying sequence in the strata of England, and their identification by their fossil contents, every "cosmogony" and "theory of the earth" was doomed. Fact henceforth took the place of fancy.

Among the earliest of those trained in the new school was young John Phillips. Born at Marden, in Wiltshire, on Christmas-day (N.S.) 1800, he lost his father when he was but seven years old, and his mother dying soon after, his training fell into the hands of his mother's brother, the renowned William Smith, "Father of English Geology."

We have never heard that there was anything to be recorded of his father beyond that he was the youngest son in a Welsh family, settled for many generations on their own property at Blaen-y-ddol, in Caermarthenshire, who was destined for the Church, but became an officer of the Excise, and that he married the sister of William Smith. Mr. F. Galton, a few weeks ago, read a paper at the Royal Institution, in which he gave statistics about eminent scientific men, showing the number of cases in which the greatness was due to the father, and the number of cases in which it was due to the mother. Whether Prof. Phillips was included we do not know, but he most certainly was an instance in which the influence of the mother preponderated. The mould of the features were distinctly those of the Smith family, and the likeness between Prof. Phillips and the busts and pictures of William Smith has often been remarked. His habit of thought was so much due to the direct training of his uncle that we cannot trace how much of it was hereditary. No particular school could have much influenced him, for he passed through four schools before he was ten, and then for a short time went to the excellent old school at Holt Spa, in Wiltshire. It is said that Latin, French, and Mathematics were his favourite studies, and the enjoyment of Latin authors seems to have grown on him, for in the writings of no other geologist will be found so many quotations from the Latin classics. The Rev. Benjamin Richardson, Rector of Farley Hungerford, near Bath, was one of his earliest instructors in natural history. Very little, indeed, is known of Mr. Richardson; he had the reputation of being in his time the best naturalist in the west of England, and the obituary notices at the time of his death mention that he was a member of Christ Church, Oxford. One fact about him which has an historical interest is certain, and that is that it was his hand which, from the dictation of William Smith, "first reduced to writing at the house of the Rev. Joseph Townsend, Pultenay Street, Bath, 1799" the table of "the order of

the strata and their imbedded organic remains in the vicinity of Bath." The original document is in the keeping of the Geological Society, and is regarded as a memorial of the first step towards the examination of strata on a definite plan, the first step in the science of geology as contrasted with cosmogony. During the year that young Phillips spent at the pleasant rectory of Farley, he heard continually of the importance attached to the discoveries of his uncle and of the results which, in the estimation of Richardson and Townsend, were to flow from it. Under Mr. Richardson's direction he spent a large portion of his time in searching for fossils through the valleys around Farley, and in making drawings of the fossils he found and of the recent forms that were most nearly allied to them in Mr. Richardson's extensive collections. Prof. Phillips always spoke with pleasure of his recollections of Mr. Richardson, and attributed to him both his early taste for natural history and the ready use of his pencil, which so often not only reproduced faithfully a geological section but artistically included the foliage and background recording the pleasant accompaniments of the work which principally engaged his attention. Mr. Richardson though a kind was not a flattering guide to the young man, for a frequent remark on being shown the drawing of a fossil was, "Very good John, now put that in the fire and try and do even better."

At the end of the happy year at Farley, young Phillips went to live with his uncle in London, to share with him his labour, his hopes, and his disappointments. William Smith had then just removed to Buckingham Street, after the fire in Craven Street, which had so disarranged his work. Here, however, he rearranged his collection of fossils, the first collection in which fossils were placed in their stratigraphical sequence. Made first at Cottage Crescent, Bath, removed to Trim Street, then to Craven Street, and Buckingham Street, this historical collection finally found a resting-place in the British Museum. Each separate stratum recognised by Smith had one or more shelves sloping to represent the dip as he knew them in the typical ground of the Dunkerton Valley, near Bath, where he first studied them. This was the collection from which young Phillips first derived his ideas of a geological museum for teaching purposes, and which he saw so often referred to by his uncle in explaining to his many visitors his new ideas, when urging upon them the national importance of his discovery as regarded agriculture and mining. William Smith was then working at his map of England, and to this his best energies were given and all his money devoted. In the "Memoirs" of his uncle, published in 1844, Prof. Phillips has described all the delays and trials that attended the production of this, the first geological map of England ever produced. The indomitable courage shown by Mr. Smith in the face of every discouragement could not fail to impress young Phillips with the importance of his uncle's work, and to win respect for him. How he was attached to him, and how he valued his teaching, is apparent in many places in his writings. In the preface to the "Memoirs" he speaks of himself as "an orphan who benefited by his goodness, a pupil who was trained up under his care." The map was issued in 1815, and Mr. Smith's professional engagements rapidly increased, requiring him to visit all parts of the county. He conceived the plan of producing county geological maps on a scale considerably larger than that of the map of England, and on almost every journey his nephew was his glad companion, "haud passibus æquis;" and according to an established custom on all such tours, was employed in sketching parts of the road and recording on maps the geological features of the country. In 1821, the map of Yorkshire, in four sheets, was published, which were prepared and coloured by his own hands. Throughout the "Memoirs" we have indications of the way in which he worked under his uncle's direction. Here is one which