

some occur from the shifting of the packing papers, and the faces of two plates then coming in contact :—

“H.M.S. *Challenger*, Yokohama, 15th June, 1875.

“Sir,—It gives me great pleasure to acquaint you that the dry plates supplied to this ship three years ago are working well, being *fully* sensitive, notwithstanding the great trial that they have been subjected to—extreme cold and heat. On some plates I found damp spots on the film, which stain the picture, and hence I discard them; but, on selecting plates, I travelled up 2,500 feet (where the wet process seemed impossible) and obtained *perfect* negatives. I would suggest that more substance be placed between the plates, as I have found them sticking together, and hence the same spots on each plate. I am using your new developer, which works well.

“I remain, yours obediently,

(Signed)

“JESSE LAY, Photographer.

“To Col. Stuart Wortley.”

If at any time any scientific worker may be contemplating an expedition where highly sensitive dry photographic films might be of use, I shall be glad to place my experience at his disposal, and give him formulæ on which he can thoroughly and implicitly rely.

H. STUART WORTLEY

Patent Office Museum, South Kensington, Nov. 8

Bees and Clover

IN NATURE, vol. xii. p. 527, it is stated that two nests of English humble-bees have been sent out to New Zealand, and that they are specially desired there for the purpose of fertilising the common clover. I suppose the red clover is meant, as the white is fertilised by the hive-bee, and the wonderful rapidity with which it has spread over the Australian colonies proves that it does not require any further assistance.

The species of *Bombus* sent out is not mentioned in the paragraph, and it is not likely that Mr. Frank Buckland would send the wrong one; but it is worth pointing out, as not being generally known, that the commonest of the humble-bees (*Bombus terrestris*) does much more harm than good to many of our flowers. I have for several years watched the humble-bees, and I never saw this species go to the mouth of the corolla of the red clover. As far as my experience goes, it invariably bites a hole at the base of the flower and extracts the nectar from that opening, so that it is of no use in carrying the pollen from one flower to another. All the other species of humble-bees that I have noticed go to the mouth of the flowers, and they alone are useful in their fertilisation.

The common scarlet-runner or pole-bean is entirely dependent on the visits of bees for the fertilisation of its flowers, and I have lately seen an instance where the attentions of *Bombus terrestris* were mischievous and hurtful. A friend of mine, living near Finchley, had a late sowing of scarlet-runners rendered barren by their operations. The smaller humble-bees did not visit his garden, and *Bombus terrestris* cut holes at the base of both the expanded flowers and the unopened buds. The hive-bee with some trouble, by pushing between the petals, can get at the nectar and sometimes fertilises the flowers, but as soon as the humble-bee commences to cut holes at the base it seeks for these perforations as a readier means of access.

At the beginning of the season some of the *Bombus terrestris* will be seen visiting the flowers of the scarlet-runner in a legitimate manner, but they soon learn that it is easier for them to get at the nectary by cutting holes at the base, and later on their acquired experience teaches them to attack the buds in the same manner. Large gaping flowers such as the Nasturtium and the Fox-glove are fertilised by this species, but to most of the narrow tubular ones its visits are injurious.

I hope therefore that it is not *Bombus terrestris* (the common large yellow-banded kind) but some other species of the genus that has been sent to New Zealand, and if so it will be a most valuable addition to the fauna of the country should it be successfully acclimatised.

In sending humble-bees to a distant country I believe the best plan would be to dig up the fertilised queens, in winter, out of the ground where they hibernate, and forward them in their dormant state packed in earth kept cool by ice.

Cornwall House, Ealing

THOMAS BELT

Cherry Blossoms destroyed by Squirrels

THE very general interest exhibited in your columns some time since in regard to the destruction of flowers by birds, leads me to report the following observation.

I have noticed repeatedly here in New England that the common red squirrel (*Sciurus Hudsonius*, Pall.) is extremely fond of flowers, and I am inclined to believe that in this immediate vicinity he destroys far more flowers than any bird. The squirrel in question, though smaller than the common squirrel of Europe (*S. vulgaris*, Linn.), bears a close resemblance to the latter. We have field-mice also whose habits so closely resemble those of the squirrel that it seems highly probable that mice as well as squirrels often aid in the destruction of flowers. For cherry blossoms in particular our squirrel has a well-nigh insatiable appetite.

Having lived for several years upon the edge of a considerable belt of woodland, I have been surprised to witness the extent of the devastations of the squirrel in this particular, and have watched their operations with no little interest. The flower is bitten from its stalk precisely as a nut would be, and held between the paws of the animal while the little ovary at the base of the blossom is eaten. All this is the work of but a moment, since the edible morsel is exceedingly minute. The flower is then dropped to the ground, seemingly in a perfect state, since the petals are untouched, and remain adhering to the calyx. I have noticed that one squirrel working by himself will destroy in this way two hundred blossoms or more in the early morning of a single day. On examining the discarded flowers it appeared that they were in no wise mutilated excepting that the ovary had been bitten from the pedicel in every instance. Freshly opened flowers seem to be preferred. At all events the very first blossoms of the spring are eaten, and the destruction of flowers is largest in the early days of the blossoming. As soon as the flowers have become somewhat mature, the squirrels leave them, and they neglect the immature cherries also until near the time of ripening, when they again attack them, both for the sake of the fleshy part of the fruit and of the kernel. With respect to the fruit, however, the squirrels are far less harmful than birds, since the latter descend upon it in overwhelming force. The red squirrel has long been detested by American gardeners because of his destruction of pears, the choicest of which he gnaws in two, for the sake of their seeds merely, but I am ignorant whether anyone has hitherto called attention to his fondness for the blossoms of fruit-trees.

I have occasionally noticed the rose-breasted grosbeak (*Cairaca ludoviciana*, Linn.) plucking cherry blossoms, or perhaps the unopened flower-buds, at the same time with the squirrels, but the birds ate leaf-buds from an adjacent ash tree as often as they ate the cherry flowers, and the number of blossoms destroyed by the birds was insignificant in comparison with the work of the squirrels.

F. H. STORER

Bussey Institution of Harvard University, Oct. 20

Plagiarism

A FRIEND has just called my attention to the letter of Mr. Boyd Dawkins in last week's NATURE under the head of "Plagiarism." Mr. Dawkins may have found out by this time that he has made a mistake to my detriment, but I am bound to reply to his letter.

The map accompanying the article "The Early Geography of the British Isles" (*Leisure Hour*, July 1874), which Mr. Boyd Dawkins says is a reproduction of one he published in 1871, is in reality the well-known map first issued by Sir Henry de la Beche more than forty years ago, with the addition of hypothetical river-courses (indicated in the first instance by Mr. Godwin-Austen) and submerged forests, the said river-courses having since been more completely and strikingly portrayed by Mr. Dawkins, whilst I have added to the submerged forests.

The *Leisure Hour* map is thus a composite production. Beneath it, so far from there being no reference to its various authors, are the words: "After Sir Henry de la Beche and Mr. Godwin-Austen, F.R.S." (I regret to find Mr. Dawkins's name is not placed on the map as well); whilst in the text of the article are the words: "See a paper by Mr. Boyd Dawkins, F.R.S., in 'Hardwicke's Popular Science Review' for October 1871."

I can only suppose Mr. Dawkins had not given due attention to the *Leisure Hour* map and its accompanying article when he wrote his letter off San Francisco. If he had, I disallow his exclusive claim to the one hundred fathom line of the British seas, the submerged forests, and (with the modification above mentioned) the hypothetical river-courses.

8, Walerton Road, W., Nov. 8

HENRY WALKER