

consequence being that the molecules cannot possibly fit together into a compact mass, as, for example, the rhombohedra of calcite do; for ice really resembles compact snow.

GEORGE HENSLOW

Sunrise-Glows

ON the morning of the 7th inst. a curious form of sunrise-glow was observed on Ben Nevis. The sky at the time was covered by a uniform thin sheet of stratus-cloud lying just a little above the hill-tops all round. About 7 a.m., shortly after sunrise, the sun was shining downwards through this cloud, and the valleys to the eastward of Ben Nevis were filled with a "glow" exactly similar in colour and general appearance to the upper glow so often observed before sunrise and after sunset. The temperature at the time was very low—9°.2 F.—and at 7.16 a portion of a vertical halo passing through the sun's disk was seen. This "under-glow" would seem therefore to have been due to the presence in the air of ice-crystals, rather than of dust, whether cosmic or otherwise.

R. T. OMOND

Ben Nevis Observatory, March 8

A Horrified Cat

LAST week, in connection with a study of Carnivora, I obtained a cat from an acquaintance at a distance, and carefully dissected it in a room above our stable. When I had finished, the cat was, as may be supposed, hardly to be recognised. I cleaned the scalpels, placed them in the case, and took them to the house. No sooner had I put them down than I observed our own cat go and sniff all around the case with a peculiar look of intense wonder. I took the instruments away, and thought no more about it; but a short time after I returned to the remains of the dissected cat in order to prepare the skeleton, when I saw our cat standing at a distance of about a foot from the dissection, and presenting an appearance of most helpless terror. She was trembling from head to foot, and in such a condition of evident horror that my presence had no effect upon her. After some moments she noticed me, and then darted away with a scared look such as I have never before seen. She did not return to the house that day—a thing quite unusual; but on the next day she returned and entered the house with a fearful caution, as though realising the probability that she herself might become a victim to science, and her whole conduct has changed.

This suggests that the country custom of using dead birds, weasels, &c., as a scare to the like is not entirely unreasonable, and it would be interesting to know whether others have noticed similar effects.

E. J. DUNGATE

Horton Kirby, Dartford, March 23

Nocturnal Hymenopteræ of the Genus *Bombus*

AS no one has replied to Mr. Doria's letter in NATURE for February 25 (p. 392), I may say, in response to his inquiry, that I have heard in England a number of bees on a species of *Tilia*, at dusk, when it was probably much darker than the "very bright moonlight" referred to by Mr. Doria. It was too dark to watch them, but their "hum" was very audible, and on my dragging down a bough of the tree I saw one bee fly away. In Herman Müller's "Fertilisation of Flowers," English translation, p. 67, it is stated that a social wasp (*Apoica pallida*) in Brazil seeks honey "only by night," sitting still in its nest by day.

Query. Might not the "very bright moonlight," and not habit, be the cause of the bees appearing at night, as described by Mr. Doria? I should hardly think a bee could discern between moonlight and twilight. I have several times seen bees rapidly on the wing, and apparently making for home in the twilight.

JNO. C. WILSON

Fairfield, near Manchester, March 13

A LINGUISTIC REVOLUTION¹

JAPAN, in modern days, is the land of revolution and of change. The systems and habits of centuries are rapidly disappearing; the old order is being dissolved by contact with the West, and every year produces some

¹ "A Short Statement of the Aim and Method of the *Romajie Kai*" (Roman Alphabet Association of Japan). (Tokio, 1885.)

reform which brings the country more and more into line with Europe and America. There may sometimes be haste, but there is no rest, in Japanese movements; there is little swerving to the right or left, and now for about sixteen years the country has been, on the whole, steadily moving along towards one goal, viz. equality with Western nations, politically, socially, and intellectually. But of all the wonderful changes which the present generation has witnessed in that country, perhaps not one has been so strange or widely beneficial as that the commencement of which is described in the pamphlet before us. And as the first who will profit by it, should it prove ultimately successful, will be the rising generation which has to study Western science in all its branches, it deserves special description in these columns.

It will be known to many of our readers that the Japanese language, which, in its genius and structure, is wholly different from that of China, is nevertheless written by means of the Chinese ideographic or pictorial signs, aided by two alphabets or syllabaries, themselves based on Chinese characters. The object of the new movement, shortly stated, is to sweep away these signs altogether, so far as Japan is concerned, and to use Roman letters only in writing the language. The Association, which has been formed to carry out, as far as a private body can, this reform, has issued the present pamphlet by the advice of Her Majesty's Minister in Tokio, with the view of making known abroad a movement "which its authors believe to be an important step in the intellectual progress of their country." We cannot do better than follow this official statement of the evils of the present system, which is an incubus on the intellect of the nation, and which adds incalculably to the mental toil, more especially of its scientific youth, at the most important stage of their lives. It may be well, however, to say at the outset that the reform is no mere craze of a few misguided enthusiasts. The Society numbers amongst its most active and sympathetic members not only Japanese scholars of eminence who have studied their own as well as Western languages, but also Europeans and Americans who have devoted their lives to the study of the Japanese language and literature, and Western diplomatists who are most unlikely to participate in any visionary movement of large nature. When men drawn from these various classes join together with the object of carrying the reform in practice, we, who have not the same opportunities of becoming acquainted with the local circumstances, may be excused from discussing its practicability any further. We may take that for granted, or we should not find the names supporting the reform that we do. Another point to be noticed is, that hitherto the Government has officially held aloof from the Association, preferring, no doubt, to allow private effort to prepare the soil beforehand. To return, however, to the pamphlet issued by the Society.

The object of the *Romajie Kai*, it states in the first sentence, is to introduce the use of Roman letters, instead of Chinese ideographs, for writing the Japanese language; when a language can be adequately represented to the eye by twenty-two signs indicating sounds, why (it asks) waste time and effort by continuing to represent it by many thousands of symbols pictorially representing objects and ideas? It is a labour of years to learn to write the Japanese language as at present written, viz. with Chinese characters supplemented by syllabaries invented by Japanese scholars a thousand years ago. The number of Chinese characters is not their only disadvantage. Upon their introduction (we here employ for the most part the exact words of the pamphlet) into Japan, it was early found impossible to restrict the employment of them to the expression of purely Japanese words of corresponding signification. The Chinese sounds, or, rather, a more or less inaccurate approximation to the Chinese