England. A comparison of this kind made by the memory is no doubt not severely scientific, but those tourists in Switzerland who are in the habit of observing flowers will probably confirm the statement. Plants grown at high levels in the Alps are, as Mr. Dyer says, above a great screen of aqueous vapour, and I have in my own mind always put down the greater brilliance of Alpine flowers to their getting more sun than in our cloudier climate. It is not, however, solely any alteration in the actual effects of the solar rays, caused by this absence of aqueous vapour, that makes the colours of Swiss flowers so bright. The same, or, I should assert from memory, even greater, brilliancy, will be found in Arctic and sub-Arctic Norway by anyone who visits the Throndhjem district and the coast to Hammerfest in June. Western Norway notoriously is one of the moistest parts of Europe; but, on the other hand, it has, broadly speaking, no night at midsummer. It is thus apparently the quantity, and not the quality, of the sunlight that causes the peculiarly vivid colours of Swiss flowers, including those of the pastures from 2000 feet upwards. I have never been in Switzerland in spring, and I cannot therefore judge whether the colours of the flora in the lower districts are also more brilliant than ours; but it will be seen below that Swiss observers find that the high Alpine flora is much more brilliant than the same plants in the lowlands.

Our great national garden at Kew is peculiarly badly situated for the growth of Alpines. The situation is low and foggy, and mild muggy weather alternates with night frosts. Above all, the smoke pall of London is peculiarly destructive in connection with the other disadvantages of the site. Alpine plants, as Mr. Dyer shows, are, in their natural state, at rest under a cloak of snow during the winter. The least warmth, however, starts them into growth, and the marvellously rapid flowering of many kinds in the ooze on the melting of a snow-bed, is one of the most curious sights of the Alps. The Kew climate (and the general English one too, though to a lesser degree) keeps the plants in growth in winter. Then fogs, smoke, and damp collect on the young growth. These enemies are peculiarly liable to attach themselves to the numerous sorts with hairy or woolly leaves. Then follow night frosts, and the young growth perishes.

The application of these remarks is, that it does not follow that, because cold frames are necessities in the culture of Alpines at Kew, they should be used elsewhere in England. There has been a long discussion recently on this very point in the gardening papers, and the general belief appears to be, that given a fairly dry climate cold frames are *injurious*, because they excite and keep plants in growth when they should be at rest. A sheet of glass suspended over a plant in the open air, so as to shoot off our superfluous rain and to keep off some of our fog, appears to be much better, for premature growth is not stimulated. Alpines should so far as practicable be kept as dry as we can in winter, by drainage, light soil, &c. Then when growth commences, say in March, they should be well watered each day (unless it is raining), early in the morning. The plentiful moisture thus supplied to some degree takes the place of the melting snow, and it has dried off before the evening frosts seize upon the leaves. The plants thus can grow freely in the day because they are surrounded with a moist atmosphere, and they are kept "stocky" (in gardeners' phrase) by the cold at night, just as they are in fact on the Alps. This is the plan recommended by that great authority M. H. Corrévon, of the Jardin Alpin d'Acclimatation, Geneva. In the drier climate of that city, M. Corrévon replaces the snow blanket of the Alps by pine boughs fastened closely over his Alpines. In England this would, I fear, only make the plants rot. It does not follow that, because many plants in frames at Kew grow long and straggling and lose their natural habit, they do so in England generally in the open air. The changes in the habits of Alpines are largely due to changes in soil. For instance, the Edelweiss (*Gnaphalium leontopodium*) grows perfectly freely from seed anywhere about London, but the flowers lose their compactness. I am told, however, that if plenty of lime is added to the soil they become as compact and close as in Switzerland.

In "Les Plantes des Alpes" (Geneva, Jules-Carey) M. Corrévon very fully explains his views, formed, after great practical experience, on the conditions of the Alpine flora. Your space will not allow me to make many quotations from a work of the utmost interest both theoretical and practical, but the following bears on my point as to the brilliant colours of Alpine flowers:—

"Ces végétaux sont 'reine Kinder des Lichtes,' comme les a appelés un poète allemand; on ne trouve pas de champignons dans les Alpes, ni aucune plante qui n'appartienne franchement au domaine de la lumière. Aussi les espèces de nos plaines qui se trouvent transportés là-haut sont-elles parées de couleur bien plus vives, bien plus pures qu'elles ne sont chez nous."

M. Corrévon gives a number of instances in support of this, which I will not quote here. In conclusion, is Mr. Dyer correct in thinking that the soil in the high Alps is permanently frozen with the exception of a slight film on the top? I am aware that when you get to considerable elevations the subsoil is frozen. For instance, I was told that the reason for the well-known mortuary on the Great St. Bernard was that bodies could not be buried there. But a great many of the flowers generally called Alpines grow below the tree limit of 6000 or 6500 feet, and few are to be found above 8000 feet. If the subsoil on the higher Alps is frozen, it would not apparently be so where trees grow, and it would be interesting to know the line of subterranean frost, and at what depths below the surface it is permanent at various elevations. J. INNES ROGERS.

Chislehurst, April 27.

Co-adaptation.

I DO not propose to extend the discussion on this subject beyond the present communication, but I cannot refrain from calling attention to the remarkable discrepancy in the position taken by Dr. Romanes in his last letter (April 23, p. 582), and that in his former communication (March 26, p. 489), in which he says:—"I do not . . . hold myself responsible for enunciating Mr. Herbert Spencer's argument, which the quotation sets forth. I merely reproduced it from him as an argument which appeared to me valid on the side of 'use inheritance.' For not only did Darwin himself invoke the aid of such inheritance in regard to this identical case . . . &c." If words have any meaning, this implies that Dr. Romanes agrees with Darwin in regarding this case as one in which "use inheritance" played a part. Now, after I have endeavoured to show that this supposed case of co-adaptation can be explained without the aid of "use inheritance" at all, Dr. Romanes says that there is no difference of opinion on this point between us. I can only say that I am very glad to learn this admission on his part, but why did he quote the argument from Herbert Spencer as "valid on the side of 'use inheritance,'" if he did not believe it to be a case of true co-adaptation? R. MELDOLA.

High and Low Level Meteorological Observatories.

I HAVE read with much interest your article of the 11th inst. on the results obtained by simultaneous observations in the meteorological observatories at the base and at the summit of Ben Nevis. Ben Nevis rises to a height of only 4370 feet above the sea, and yet we find that the comparison of these observations gives results of a kind that could not be obtained from any number of stations all on the same level. Might we not hope for still more valuable results from similar observatories placed at the base and the summit of Etna and Teneriffe? Etna is 10,870 feet high, and Teneriffe 12,200. These would be better than any Alpine stations, because of their perfect isolation.

Belfast, April 25. JOSEPH JOHN MURPHY.

An "International Society."

AN institution with the grandiloquent title of "The International Society of Literature, Science, and Art," which appears now to be largely touting for subscriptions, publishes in its prospectus a list of the "Honorary Council," among whom appears "Professor Flower." As I am the only person in this country to whom such a description could be applicable, and as many of my friends have inquired of me whether I have really given my support to the institution, I wrote to the secretary to inquire by what authority the name appeared, and received the following reply, which needs no comment:—

"Sir,—We beg to acknowledge the receipt of your favour of Saturday. The gentleman to whom you refer is the well-known Professor Ogilby Flower, of New York. I am sorry the coincidence should have caused you any annoyance. In future printings of our prospectus the Christian name shall be inserted, so that no misunderstanding may exist."

Although this letter was dated March 9 last, I find that the prospectus continues to be issued unchanged, otherwise I should not have cared to trouble you with what may appear a small personal matter. I may mention that there are other names upon the list which present as great or even greater difficulties of identification. W. H. FLOWER.

British Museum (Natural History), May 2, 1891.