

Tournefort's idea. Here follows the paragraph:—"Memoratu dignissimum est, quod refert in Itinerario suo Orientali *Tournefortius*: reperisse se nimirum apud radices Ararati montis plantas illas quæ in Armenia erant vulgares: aliquantum progressus illas invenit, quas in Italia ante viderat: altius scandenti offeriebantur Vegetabilia circa Lutetiam Parisiorum crescentia: Plantæ Suecicæ erant superiori loco positæ. Sed summum montis locum proxime ad culmen, nive obtectum, plantæ illæ occupant, quæ sunt alpinis Helveticis et Lapponicis domesticæ."

Humboldt, writing in 1816, "Sur les lois que l'on observe dans la distribution des formes végétales," p. 2, attributes the idea to Tournefort, and its development to Linnæus. Schouw ("Grundzüge einer allgemeinen Pflanzengeographie" (1823), p. 21), almost repeats Linnæus, but uses fewer and somewhat different geographical names. Edward Forbes ("Memoirs of the Geological Survey," i. p. 351) also attributes the idea to Tournefort; yet, as Sir Joseph Hooker states (NATURE, xxiv. p. 444), I also have been unable to find any such idea expressed in Tournefort's works. Indeed, his account of his ascent of Mount Ararat, as given in the English edition of his travels, and verified for me by Mr. Daydon Jackson as being essentially the same in the French edition, is about as weak and silly a piece of writing as one could well find, and quite unworthy of a man of his reputation. True, he mentions a few plants; but not a word on their distribution, except that some of them were common and familiar. No Alpine plant is included in his meagre list. Instead of being a sober narrative of the journey, it is an attempt to be serio-comic with witless allusions to Noah's ignorance of the French language, &c.; and how the travellers filled themselves with water before starting, because none was to be had on the mountain, and their inability to climb in consequence; how they descended on their backs by the hour, and when they were tired of that they turned over face downwards, and other equally senseless and improbable things. It is only fair to add, however, that Tournefort's travels were published after his death, and probably contain matter that he would have expunged.

So far, then, as the evidence goes as between Tournefort and Linnæus, the latter originated the idea, and on very slender materials, if taken from Tournefort, of parallelism in latitudinal and altitudinal distribution of plants. Considering, too, that Linnæus was born only a year before Tournefort's death, it is difficult to find any other explanation.

Kew.

W. BOTTING HEMSLEY.

The Work of Local Societies.

MAY we beg a small portion of your space to give publicity to the accompanying circular, which is being issued to all the local scientific societies in the United Kingdom? An abstract of Mr. Abbott's scheme was published in NATURE of October 29 (vol. liv. p. 636). A separate copy of the paper will be sent to the Secretary of any local society on application to the Secretary of the Corresponding Societies Committee, British Association, Burlington House.

To the Secretary of the Local Society.

SIR,—We are requested by the Corresponding Societies Committee to call your attention to a scheme drawn up by Mr. George Abbott (General Secretary of the South-Eastern Union of Scientific Societies), for promoting District Unions of Natural History Societies, a copy of which is enclosed. This scheme was discussed at the conference of delegates of the Corresponding Societies of the British Association, held at the Liverpool meeting of the Association last September, when the great advantages of federation were generally admitted, and some examples of it were explained. At a meeting of the Corresponding Societies Committee on October 29, the report of the conference of delegates was considered, and it was decided that, as the circumstances in which the local societies are placed are extremely varied, it is desirable that each society shall be asked its opinion on Mr. Abbott's scheme, and as to what kind of federation it considers to be the best. We have, therefore, to state that the Corresponding Societies Committee will be greatly obliged if your Society will be good enough to favour them with its views on the subject at any date not later than December 20, 1896.

We are, Sir, yours faithfully,

R. MELDOLA, *Chairman*,T. V. HOLMES, *Secretary*,

Corresponding Societies Committee, British Association.

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Floating Mercury on Water.

IN your review of Dr. Hertz' works you mention his investigations into the question of the flotation of thin metal plates, in connection with which I may mention that I have made mercury float on water on a somewhat similar principle. A few drops of mercury, half an ounce of water, and a pinch of some red powder, red lead, red oxide or vermilion were put into a small cylindrical bottle and shaken. A few small globules of mercury were then found floating together at the centre of the water surface. The shaking was frequently repeated until a small dish consisting of a large number of mercury globules was formed, which floated on the water and at the centre of its surface. Its diameter would be about $\frac{3}{8}$ inch, and its depth about $\frac{1}{16}$ inch. It did not disappear if allowed to rest, and though it must have been broken up each time that the bottle was shaken, it always reformed. I am unable to say whether the mercury was pure or not, or whether an acid, alkali, or salt had been added to the water, for this little experiment was made many years ago.

Glasgow, November 9.

C. E. STROMEYER.

The Swallows.

I SAW martins, three or four stragglers at a time, hawking on our cliffs, on the 2nd, 3rd, and 7th of this month, and again a single bird in the gardens this morning.

May I suggest as to Lord Hobbhouse's gatherings, that those which apparently returned were not the same birds, but new comers from the north. All our own sand-martins cleared out here in August.

By far the vastest, and I think the latest, great congregation I ever myself saw, was one October 12, at Wentworth House, Earl Fitzwilliam's Yorkshire seat. Almost every tree in the richly-wooded park was alive with their incalculable multitude. That was close upon 1850.

If, as has been recently said, temperature is the sole key to the times of migration, it seems strange that all our varieties of the swallow tribe should leave so much earlier in the south than in the north. This town being so recent, we have very few swallows or house-martins; but our swifts and sand-martins all disappeared this year in August.

Bournemouth, November 9.

HENRY CECIL.

AFRICAN RINDERPEST.

WITH reference to Prof. Koch's present mission, I would venture to observe that the German Government does not deserve the praise given in your last issue. The German Government, like our own, has been guilty of gross negligence in not studying the nature of the rinderpest in 1891 and in subsequent years, when it killed off the cattle and the wild game in the British and German possessions in East and Central Africa.

Up to the time that the epidemic reached the Zambesi, much might have been done, had the nature of the disease been then understood, to limit its progress from the South, while the German possessions in South-west Africa might have been further protected had steps been taken to avert its progress at the Kalahavi.

The attention of the British Government was, as you say, called to the danger in ample time, but it is doubtful if in Germany the danger was even realised. It is now too late for either the British Colonies, the South African Republic, or the Germans in the South-west to do anything to stop the progress of a scourge of the nature of which we are ignorant. Prof. Koch has been engaged by the Cape Government to investigate the nature of the disease, and in his hands we may be sure that this will be thoroughly done. The practical result may be to prevent the disease from being carried to Europe by means of hides, &c.; but it is too late to save South Africa, where all ordinary means of transport have been paralysed.

I have just received a letter from Major Lugard, C.B., who is now at Lake Nyami, not far from the German frontier, which may be of interest to some. Writing on September 3 from his camp, near the Botletle River, he

says: "I am glad the Royal Society is likely to take up the question of the cattle plague. It is strange that the natives here insist that the crocodiles and hippopotami are dying of it. I cannot believe it true, but we came upon a dead hippopotamus; an unusual thing, since the people are such keen hunters, and its hide so valuable here. I shall, however, try and verify these reports, and let you know. The plague has now reached Sekome's town (near Lake Nyami), and will presently be in Damaraland and German South-west Africa. It ought to have been most easy to prevent its progress westwards, for there is but little communication between Nyamiland and the rest of the Protectorate, since the Kalahari Desert, with its sand and thirst, intervenes. But nothing whatever has been done. Beddoe tells me the natives are dying of eating too much 'rinderpest' beef. I do not know if this is true; all the natives eat it, and convert it into 'Biltong' for future use. I see that Mr. Long pooh-poohed the idea of imported hides bringing the disease into England. Probably tanned hides would not, but surely raw hides would bring it for certain? There is nothing more extraordinary in the course of this plague than the different classes of animals it has attacked in different localities. In East Africa, the buffalo, eland, and giraffe, I believe, suffered most. The common water-buck, all harte-beests, and zebra were, I think, exempt. The smaller sort of water-buck (*Kobus Kobæ*) suffered to a great extent, but nothing like the other game. Yet Mr. Sharpe, now acting Commissioner in Nyasaland, reported that round Lake Moero, two years later, the animals that suffered most after the buffalo were zebra and lechive. Now here, on the Botletle River, they say crocodiles and hippopotami, and also, I have heard, elephants, donkeys, and dogs are affected. Animals are here said to go mad before death, and become very dangerous. I am delighted to hear the matter has been taken up, and is likely to be referred to a Committee of the Royal Society."

As Major Lugard has been in contact with the advance of the disease in East Africa in 1891-92, and is now brought face to face with it under most trying circumstances in South-west Africa, the account given of how differently it affects the various animals in different localities may be of interest; as also the impression left on his mind that, under proper care, the advance of the epidemic might have been averted had the British and German Governments a few years ago taken the step now adopted by the Cape Government, and examined the nature of the disease when it attacked their possessions in East Africa as in Nyasaland.

JOHN KIRK.

THE LEONID METEOR SHOWER, 1896.

THE expected display does not appear to have been a brilliant one. It may have offered a more attractive spectacle to American observers, for it seems to have been very probable that the richest part of the stream was encountered by the earth during daylight of the 14th in England. At stations far west an opportunity might have been afforded of witnessing a tolerably active return of the phenomenon; but of this we have not yet received definite information.

From my own observations at Bristol, and from others secured by Mr. Blakeley at Dewsbury, it appears that the shower was a very ordinary one, both on the mornings of the 14th and 15th. Mr. Blakeley watched the sky from midnight on the 13th to 4h. 15m. a.m. on the 14th, and during this long interval only recorded twelve Leonids. He says: "Meteors of all kinds were scarce, and the Leonid shower was especially disappointing, fewer of its meteors being seen than last year during a shorter watch of the sky. Twelve in a period extending over a period of $4\frac{1}{4}$ hours is a very poor result."

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A dense fog obscured the stars at Bristol on the night of the 13th, and observations were not possible. On the 14th the sky cleared late at night, and the morning hours of the 15th were beautifully clear. From a position having a somewhat restricted view of the firmament, I counted nineteen meteors between 4 and 6 a.m., and of these eleven were Leonids. The display was, therefore, more active on the morning of the 15th than on that of the 14th, if we compare my figures with those obtained by Mr. Blakeley at Dewsbury. But the shower was of minor importance as regards numbers, and fell below the strength of that observed by me in 1879 and 1888, when certainly there was little reason to expect any pronounced activity.

Of the eleven Leonids observed by me on the morning of the 15th, three were pretty bright, and left streaks for about 5 seconds. The paths were as follows, and it would be interesting to hear of duplicate observations of either of these:—

Date.	G.M.T. h. m.	Mag.	From	To
Nov. 15	4 49 a.m.	2	200 + 18	208 + 16
"	5 1 "	> 1	203 + 20	210 + 18
"	5 27 "	< 2	149½ + 31	149½ + 33

I carefully pencilled the tracks of these and eight other Leonids on an 18-inch globe, and found the radiant point sharply defined at

$$150^{\circ} + 22\frac{1}{2}^{\circ},$$

and this agrees very closely with the position determined in previous years.

Among the meteors I recorded, there were two Taurids, and two very swift flights from Gemini at about $108^{\circ} + 25^{\circ}$.

A correspondent at South Croydon informs me that his attempted observations of the Leonids failed owing to overcast sky and rain. I fear, therefore, that reports generally from the London district will be very unfavourable.

Attempts to photograph the meteors, and to derive an accurate radiant by this means, will probably have met with little success anywhere in consequence of the poorness of the display. I believe that only during a very rich shower, will this method prove successful. Even then the limits of error will be larger than many people anticipate, as the meteor flights are not emanations from a point, but an area the actual centre of which is not defined with great precision. Still it is well the photographic method should be fully and fairly tried, as naked-eye observations are often more than 1° in error in fixing the radiant.

Since the above was written, several accounts have been received which show that the display of Leonids was pretty active in the early part of the night following November 14. One observer states that there was quite a rich shower of meteors at about 11h. 30m. Mr. Corder at Bridgwater watched the sky from 14h. to 18h. 30m. on November 14, and counted about seventy meteors. He saw eleven Leonids in the first thirty-five minutes of the period named, but the shower fell off rapidly afterwards. Mr. Corder determined the radiant at $146^{\circ} + 25^{\circ}$ on November 13, and thinks it shifted to $150^{\circ} + 23^{\circ}$ on November 14. On the nights of November 12 and 13 he saw fewer Leonids than on November 14, and there is little doubt that the maximum of the shower occurred early in the night of November 14, and before the moon had set.

W. F. DENNING.

For the observance of these meteors a watch was kept by me, commencing on the evening of the 12th, but the weather was such that only two nights were suitable for observation, namely the 12th and 14th. Arrangements had been previously made to keep a photographic record of the region about the radiant point, by fixing a