water. The odd circumstance about the damage was that it occurred on a simple grass slope, about half way between a tall boat-house on the one side and a drinking fountain standing on more elevated ground on the other. Small trees also were in the neighbourhood, and there was no apparent cause why the flash should have selected this particular spot; though indeed it was not within any of the ordinarily accepted "areas of protection." A gentleman—Mr. Hewitt—proposed digging for the meteor, and although fairly convinced that it was nothing but an ordinary flash, we thought it just possible that an accidental meteorite might have fallen during the thunderstorm; in which event a flash down the rarefied air of its trail would be a natural consequence. It may be just possible that the popular belief in thunderbolts has some such foundation.

At any rate the excavation was made, with the result of proving that it was an ordinary flash and that the lightning made use of a surface drain-pipe, about four feet deep, to get at the water of the lake.

I enclose Mr. Hewitt's report. OLIVER J. LODGE.

DURING a thunderstorm on the afternoon of Sunday, July 3, 1892, what is described as a "ball of fire" was seen by several persons to descend to the ground, near the south end of the lake in Sefton Park; and immediately afterwards a column of water, about sixty feet high, was shot up from the lake. On examining the spot where the ball of fire was seen to descend, several clean-cut holes were observed, and a sod was also found at a little distance from the spot.

A few days afterwards an excavation was carefully made. The sod being removed, the holes were traced down to a surface drain pipe four feet below the surface. At this drain the holes terminated, and the pipe was found shattered. The important holes were found to be six, the largest being seven inches in diameter, the others about two inches. No meteoric matter was found, but it seems curious that this effect was brought about by a flash of lightning only, in an open space of sloping grass, when there were trees and houses close by.

Aigburth, Liverpool. GEORGE H. HEWITT.

Peripatus Re-discovered in Jamaica.

MRS. E. M. SWAINSON has been so fortunate as to find on Beacon Hill, near Bath, three specimens of *Peripatus*, which she has sent to the Institute of Jamaica. The species is doubtless identical with that found by Gosse many years ago at the other end of the island. Of the two specimens which we have studied, one has 36 pairs of legs, and is dark pinkish-brown, with the ends of the antennæ pure white, in striking contrast; the other is smaller and darker, without white ends to the antennæ, and with only 29 pairs of legs. The third example, which we have still alive, is larger, but dark in colour. Full details will be given elsewhere later on, and it may suffice for the present to state that the species is very closely allied to *P. Edwardsii* from Venezuela, as described by Sedgwick, but differs in the greater number of legs and the white-tipped antennæ of certain individuals (probably the females), in the only slightly curved (not hooked) claws, in the differentiation of the papillæ into two distinct kinds on the dorsal surface, and apparently in other minor matters. There is no dark dorsal line. The genital orifice is between the penultimate pair of legs; and the jaws are almost precisely as in *Edwardsii*. The Jamaican species being evidently new, it is proposed to call it *Peripatus jamaicensis*.

M. GRABHAM.

September 5. T. D. A. COCKERELL.

Reflection on Valley Fog.

A LETTER from an observer at the Lick Observatory appeared in NATURE on August 25, reporting the reflection of mountains in a valley fog. I was therefore much interested to note the following in the *Yorkshire Herald* of September 7:—

"SIR,—Possibly it may interest your readers to hear of a natural phenomenon I noticed this morning before 6 a.m. Overlooking, from Leyburn, the valley of Wensleydale, it appeared as though more than half of the dale was filled with water, like a great lake with rising hills on either side, and these hill-sides, above the level of the (apparent) flood, were distinctly reflected in it. The sun was shining brightly at the time, but almost immediately the mist began to disperse, and the mirage faded away. What struck me as unusual was the extraordinary distinctness of the reflection. Yours, AN EARLY RISER. September 5, 1892."

In both cases the reflecting film seems to have been near its vanishing point. J. EDMUND CLARK.

Impure Water in Bread.

SOME accurate answers to the following questions would be desirable, in view of public health.

(1) What bacilli—if any—can survive in the amount and duration of the heat of baking in the interior of unfermented bread?

(2) What is the further effect of the carbonic acid of fermentation?

(3) What is the effect of the water being highly carbonated without fermentation, as in aerated bread?

W. M. F. P.

The Comets of Brorsen (1846 VII.) and Brooks (1892 "*d*").

THE elements of Brooks's comet "1892 *d*," as computed by Berberich from four observations made between August 31 and September 5, bear a strong resemblance to those of Brorsen's comet of 1846, calculated by Oudemans, the figures being—

		Comet Brorsen (1846 VII.)		Comet Brooks (1892 *d*)
T	...	1846 June 5·479	...	1892 Dec. 19·727
ω	...	260° 12′ 50″	...	269° 24′ 27″
Ω	...	261 53 12	...	261 2 55
i	...	29 18 47	...	27 57 8
Log q	...	9·80188	...	9·84455

Brorsen's comet of 1846 was visible to the naked eye on May 14 of that year. It was supposed to be revolving in an elliptical orbit, with a period of about 400 years. W. F. DENNING.

Bristol, September 22.

NOTE ON THE PROGRESS OF THE DIOPTRIC LENS AS USED IN LIGHTHOUSE ILLUMINATION.

FRESNEL, in 1820, devised and constructed a lens for first order lights of 920 mm. radius. It was composed of a plano-convex lens, with five refracting prisms concentric with it, and four segments of rings in the corners all gradually decreasing in breadth as they receded from the centre. The separate pieces of which these lenses were made up were cemented together and mounted in metallic frames 30 inches square.

In 1835, the late Mr. Alan Stevenson introduced the French apparatus into Great Britain. In doing so he made several improvements, one of which was that he increased the height of the lens from 30 to 39 inches, at the same time diminishing the thickness of the glass. This refractor had eight prisms above and eight prisms below the central lens. From that time Alan Stevenson's lens was almost universally used until a comparatively recent date, when a revolution in the size of lenses took place.

A few years ago inventors were trying to obtain greater power by increasing the diameter and volume of the flames; but Messrs. Stevenson pointed out, in 1869, that after a certain point an increase of diameter of the luminary not accompanied by a corresponding increase of the radius of the apparatus was a mistake, as the light became ex-focal and divergent, and that the proper way to secure greater power was to enlarge the *diameter* of the apparatus. In 1885 they had a lens made to their design of 1330 mm. radius, and having a height of 5 feet. This lens, which was named "Hyper-radiant," was tried at the South Foreland against other lenses, and with a large 10-ring gas burner it was found to give a light from one and a half to twice as intense as the ordinary lenses which were pitted against it, with the same large burners in their foci, thus proving conclusively that to get the power out of large burners it was imperatively necessary