whole surface of the earth, and the value of an attemp at such a task would now be extremely doubtful. But for limited districts, like this country, the case is very different. It would indeed be difficult to over-estimate the value of a seismic record which can claim any approach to completeness for a definite earthquake area, however feeble the shocks which visit it may be.

I may add that I hope shortly to publish some notes or directions for the study of earthquakes, with special reference to those which occur in this country. CHARLES DAVISON.

38 Charlotte Road, Birmingham, October 10.

Effects of Lightning.

I HAVE known of the following case since July last, but owing to absence from this place have only been able to get particulars during the last few days.

During the terrific storm of the 12th of July last, a labourer's cottage was struck by lightning at Leagrave, near here. The lightning descended, according to an eye-witness's report, like a "spout of fire," and struck and descended the chimney, which it destroyed. In the room below there was an old shepherd, an invalid woman, a child, and a shepherd's dog. The shepherd was sitting in a chair leaning on a stick, a kettle was boiling on the fire, and the door was open. The lightning entered the room simultaneously by the chimney and an adjoining window. The window was utterly destroyed, and the kettle was thrown from the fire across the room, the stick on which the shepherd was leaning was torn from his hand and also thrown across the room, the lightning entered a cupboard containing glass and crockery and destroyed every article, and plaster was torn from the walls. The man and woman remained unhurt, but the child was thrown down and its knees stiffened. The dog was struck perfectly stiff, "like a log of wood," and was considered dead. The room seemed full of fire, water, and sulphur, and the occupants said the smell of sulphur was so strong that they would certainly have been suffocated had it not been for the open door. After the storm had abated, the dog, with all its limbs stiff, was laid in a barn, where it very slowly and partially recovered. It long remained both deaf and blind, and was entirely dependent upon smell for its recognition of persons and things. To the present day it has not entirely recovered its injured senses.

Dunstable. W. G. S.

Electrical Cloud Phenomenon.

A SHORT description of a curious cloud appearance observed by me this summer may be of interest to your readers. It was noticed in Kiushu, the southernmost of the three great islands of Japan, early in July, at a distance of ten or twelve miles from the sea.

The season had been, and was, after the time of the observation, an exceptionally rainy one, severe floods being produced in almost all parts of the country, but it was not raining in the place where I made the observation at that particular time. Time shortly after midday, thermometer about 85° F.

The sky was clear overhead, but there was a great bank of heavy "thunderous" looking clouds to the south. It is most difficult to judge even approximately of the distance of clouds, but these might be from one to two miles off; the lower edge was represented by a very nearly straight line, and there was an amount of blue sky visible under the clouds that would perhaps subtend from 10° to 15°.

My attention was attracted to a sort of "tail" of cloud stretching itself downwards from the straight under side of the cloud-bank. It gradually extended till it reached some two-thirds of the distance from the cloud to the earth. It remained of about constant length for a little over ten minutes, the lower end continually waving about in a most curious way, giving the impression almost that it was feeling for something.

Quite suddenly the filament of cloud straightened itself out, and extended itself towards the earth. The lower end became so very thin that, from the distance, it was impossible to see whether it actually made contact with the earth or not, but I have not the smallest doubt that it did, and that a silent discharge took place at the time. There was certainly no sound heard. Immediately after the contact the filament rapidly drew itself up to the cloud, and was incorporated with it. Almost immediately after this, whether as a mere coincidence or not I cannot tell, the cloud discharged a great amount of rain. W. K. BURTON.

Imperial University, Tokio, Japan.

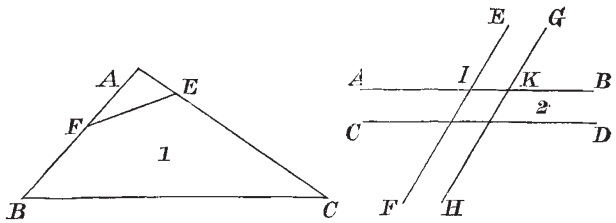
P.S.—The appearance was not unlike the illustrations of "water-spouts" that I have seen, but there was no whirling motion such as is always described as accompanying these, nor, indeed, was there any evidence of violent disturbance of any kind at all.

The Use of the Word Antiparallel.

THE following note on the use of the word antiparallel may prove of interest to the readers of NATURE.

In the second edition of "A New Mathematical Dictionary" by E. Stone, F.R.S. (London, 1743), appears a short article on antiparallels, the whole of which I will quote:—

"Antiparallels, are those lines, as FE, BC, that make the same angles AFE, ACB, with the two lines AB, AC, cutting them, but contrary ways, as parallel lines that cut them. But Mr. Leibnitz, in the *Acta Erudit.*, An. 1691, p. 279, calls antiparallels those lines (see Fig. 2) as EF, GH, which cut two parallels AB, CD; so that the outward angle AIF, together with the inward one AKH, is equal to a right angle. When



the sides AB, AC, of a triangle, as ABC (Fig. 1), are cut by a line EF antiparallel to the base BC, the said sides are cut reciprocally proportional by the said line EF; that is, AF : BF :: EC : AE, the triangles AFE, ABC being similar or equiangular."

The error in regard to the ratios of the segments of the sides is the same as the one noted in Hutton's "Miscellanea Mathematica," as quoted by Mr. Langley. I have no doubt that earlier instances of the use of this word can be found, and I would like to know whether the word is used in the first edition of "Stone's Dictionary." W. J. JAMES.

Wesleyan University, Middletown,
Conn. U.S.A., October 15.

Fossil Rhizocarps.

IN Bennet and Murray's "Cryptogamic Botany," at p. 115, I am surprised to find in a reference to my paper on "Fossil Rhizocarps" (in *Bull. Ac. Sciences, Chicago*) the statement, with reference to the macrospores of *Protosalvinia*, that "inasmuch as they are borne on Lepidodendron scales this reference is inadmissible." Now no such fact has come to my knowledge, and on the contrary these bodies are found inclosed in cellular sporocarps like those of Salvinia, and are so described in the paper in question. If anyone has found them on "scales of Lepidodendron," the authority should have been stated.

Montreal, October 15. J. WM. DAWSON.

Specific Inductive Capacity.

ON p. 669 of Ganot's "Physics" (eleventh edition) the following statement is found:—"At a fixed distance above a gold-leaf electroscope, let an electrified sphere be placed, by which a certain divergence of the leaves is produced. If now, the charges remaining the same, a disk of sulphur or of shellac be interposed, the divergence increases, showing that inductive action takes place through the sulphur to a greater extent than through a layer of air of the same thickness."

If this statement were correct, there should be less electric action on the side of the ball furthest from the electroscope when the dielectric is interposed. To test this I arranged an experiment as follows:—

The knob of a charged Leyden jar was placed midway between two insulated plates of metal, each plate being in connection with an electroscope. The leaves of each electroscope now diverged to an equal extent.

A plate of ebonite was now placed between the knob of the jar and one of the plates. If the statement above quoted is