

from near Wellington College. I have seen brighter meteors, but never one that remained so long in sight, and its course was marked for a long way by a streak of light, showing very clearly the route it had taken. When I first caught sight of it, it appeared to be rising in the sky, through the Camelopard, and it passed almost exactly over β and γ of the Little Bear, over η Draconis, between π and ρ Herculis, and over α Ophiuchi, vanishing perhaps 15 degrees further south in the Serpent. Rising and falling in its flight like a thrown cricket-ball, it seemed to be quite close at hand.

EDMUND J. WEBB.

Burghclere, Newbury, September 9.

MR. EDMUND J. WEBB'S highly interesting account of the fireball of September 2, in conjunction with other descriptions which have now come to hand, enable the real path to be well determined.

The radiant point of the meteor was near β Aurigæ, or at about $87^{\circ}+41'$, and the height of the object from about 98 to 44 miles from over the North Sea to S.S.W. coast of England. The meteor had an unusually long flight right across the country from N.N.E. to S.S.W., and its visible course of 352 miles was probably traversed at a velocity of 40 miles per second. It is only rarely that a fireball is seen in this country with such an extended trajectory. Most of the observers only saw a part of the path. The radiant was near the horizon in N.N.E.

The fireball was seen by the Rev. F. C. Lees, Sutton, Surrey; Rev. C. L. Tweedale, Otley, Yorks; Col. E. E. Markwick, Boscombe, Hants; and many other observers.

W. F. DENNING.

The Law of Definite Proportions.

PERHAPS a reader of NATURE will be good enough to solve the following question.

If an amount of heat is supplied to a volume of ice, water, and vapour at the triple point, and remaining at the triple point, and the same volume, while the heat is being supplied, are water and vapour formed in definite relative proportions from the ice? That is, is the ratio of vapour to water independent of the amount of heat supplied, or of the original proportions of the three phases?

C. E.

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FIRE TESTS WITH TEXTILES.¹

THE frequent accidents caused by the ignition of highly inflammable wearing apparel have directed wide attention to the possibility, by suitable treatment, of rendering materials like flannelette non-inflammable. The interest aroused by the subject is further increased by the fact that most of the fatal accidents occur to very young children, and apparently the number of such accidents is not diminishing.

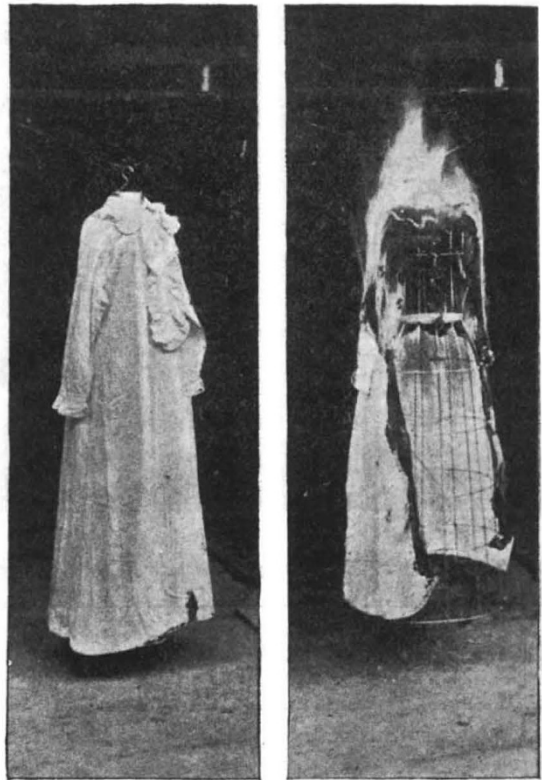
Thanks must be given to the British Fire Prevention Committee for the efforts being made to investigate the subject in a thoroughly scientific manner, and for the report before us, which contains the results of experiments on 456 samples of cloth. These were divided into the five following groups:—(a) Flannelette ("non-flam," commercial); (b) flannelette ("non-flam," special); (c) flannelette (ordinary); (d) "union" (a mixture of cotton and wool); (e) flannel; (f) flannelette (fine finish). The method of testing employed was briefly as follows:—A yard of the cloth was suspended from three hooks fixed in a beam, the lower edge was kindled by the flame of a wax taper or spirit lamp. At the end of sixty seconds any flame was extinguished, and the portion of material burned carefully measured. In many cases photographs were

¹ Fire Tests with Textiles. Flannelette known as "Non-Flam" Flannelette, Ordinary Flannelette, "Union" Flannelette submitted for test by Messrs. Whipp Bros. and Tod, Ltd., Manchester. The Committee's Report, pp. 48 ("Red Books" of the British Fire Prevention Committee, No. 148.) (London: The British Fire Prevention Committee, 1910.) Price 5s.

taken before and after the ignition, and these supply more vivid illustrations of the results than the pages of statistics which follow. In some cases made-up garments were suspended on wire frames and tested as before. The different samples were also tested before and after repeated washings. Manifestly this is a point of great importance, and it was proved that in the case of "non-flam" materials there was practically no difference as regards fire resistance between samples washed once and those washed twenty times.

The general nature of the results may be briefly stated. Unquestionably the flannelette known as "non-flam" justifies its name. Samples of this material are only charred where they have been in contact with the flame; they are non-inflammable.

Ordinary flannelette as received from the manufacturer burned up through the centre of the sample,



(a)

(b)

Demonstration Tests with Garments: (a) Flannelette ("Non-Flam Commercial") at 120 seconds. (b) Flannelette (Ordinary) at 60 seconds.—From "Fire Tests with Textiles."

and from 25 to 40 per cent. of the material was consumed, while after one washing from 92 to 100 per cent. was destroyed. The material known as "union," a mixture of cotton and wool, as might be expected, is less inflammable than flannelette; from 57 to 66 per cent. of the material, after one washing, was burnt.

In the case of flannel the charring only reached as far as the power of the flame extended. Lastly, the flannelette (fine surface) is shown to be very like the ordinary, and in many cases the sample was completely consumed. This investigation appears to have been carefully conducted, and the report should be widely circulated. The illustrations explain themselves: (a) a "non-flam," made-up garment, after 120 seconds; (b) a made-up garment, ordinary flannelette, after 60 seconds.