can in a horizontal position. Narrow strips of wood were nailed to the edges of the board to form a shallow ridge. One of these strips C was made adjustable. The blotting paper was moistened with water, and this was evaporated by blowing steam through the water in the can. The water vapour at a temperature of about 80° will stream steadily upwards from the surface of the can and flow over the board in an undulating cloud, separated from the surface of the board by a thin transparent layer of uncondensed vapour. On illuminating the cloud with a nearly horizontal beam of sunlight S, large patches of gradually changing colour appear when the eye E is directed slightly upwards towards the lower surface of the board. The beam of sunlight should be adjusted so that it just fails to illuminate the surface of the board, and the colours are best seen when this surface is blackened. The air around the board should also be quite undisturbed. These colours rival in brilliancy those to be seen on soap films, and present the features of sunset colours. It appears, then, that some of the brilliancy and extensiveness of sunset colours is due to a quiescent state or regular motion of the clouds or mist at sunset, and also to a distribution into layers of droplets of nearly uniform size.

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Non-Poisonous Character of Nitroglycerin.

WITH regard to the dose of nitroglycerin referred to in the notice of a book in NATURE of July 22 (p. 560), it may be useful to have the facts correctly stated. The reference was clearly to a passage in the "Extra Pharmacopœia" (sixteenth edition, vol. i., p. 527), in which I say:—"An employé in the author's laboratory (1905) ate a piece of the nitroglycerin mass weighing about 2 oz., mistaking it for ordinary chocolate. A bad headache supervened, necessitating his lying down, but he was at work again on the following day."

The "mass" in question is composed of nitroglycerin with chocolate in the proportion of 1/100 grain in 2½ grains; the amount of nitroglycerin consumed therefore by the predatory individual on that occasion was approximately 3½ grains.

May I add that the young man was a German apprentice of mine, and that his exclamations in half-broken English, to the effect, "Mein Gott, I shall die, I shall die!" as he gavotted round the laboratory waving his arms about, were the cause of some mirth to bystanders. As things have turned out he possibly *has* died by now from the effects of nitroglycerin employed in another way.

Considering the powerful vasodilator action of this and allied drugs (the late Prof. Leech determined that the circulation is distinctly affected by even 1/1000 grain of nitroglycerin), it is of interest to realise to what a remarkable extent they are tolerated. Single doses of 5 grains and daily doses of 20 grains have been administered medicinally with safety, according to the *Brit. Med. Jl.*, Epitome ii., 1905, p. 52. Has any one of your readers any knowledge of higher amounts having been taken?

W. H. MARTINDALE.

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MR. MARTINDALE'S extremely interesting letter supplies the clue as to how anyone could mistake nitroglycerin for chocolate, but as the book referred to gives no reference and omits the word "mass" after nitroglycerin, the ordinary reader will gain a somewhat confused idea as to the toxic action and characteristics of nitroglycerin. THE REVIEWER.

The Principle of Similitude.

IN NATURE of March 18, Lord Rayleigh gives this formula, $h=\kappa a\theta.F(avc/\kappa)$, considering heat, temperature, length, and time as four "independent" units.

If we suppose that only three of these quantities are "really independent," we obtain a different result. For example, if the temperature is defined as the mean kinetic energy of the molecules, the principle of similitude allows us only to affirm that $h=\kappa a\theta.F(v/\kappa a^2, ca^3)$.

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Structure of Hailstones.

WITH reference to the particularly violent hailstorm which passed over S.E. London on Saturday afternoon, July 24, I observed at Woolwich that the hailstones, apart from being very large, had a common shape and structure which may perhaps be worth recording. All the stones examined were either oval or pear-shaped, but not of uniform size; the broad half consisted of clear ice, while the other half was uniformly opaque or closely stratified with alternate layers of clear and opaque ice. S. L. ELBORNE.

77 West Park, Eltham, S.E., July 26.

COTTON AS A HIGH EXPLOSIVE.

AT the recent meeting of the Society of Chemical Industry held at Manchester, Mr. W. F. Reid is reported to have made the statement that nitrated cotton is not a high explosive, though every chemist knows that it is the typical high explosive. The fact that certain newspaper writers have differentiated between nitrated cotton and nitrated benzene or toluene, or any other coal-tar derivative, has nothing to do with the differentiation of a high explosive (which is of itself nitrated, and contains within itself sufficient oxygen to allow of its explosion) and those mechanical mixtures, such as gunpowder, which have been now superseded. A letter from Sir William Ramsay published in the *Times* of July 19 makes all these matters perfectly plain, and no responsible person would dispute them. I was present in the House of Lords when Lord Charnwood brought his statement before that House, and I also heard the rest of the debate, including the answer of the Marquess of Crewe. The House, consisting of those who are necessarily laymen so far as their chemical knowledge is concerned, found some difficulty in following the arguments as to whether any substitute for cotton could be effectively used.

To the chemist the matter is perfectly plain, and it has been stated with some degree of precision in an article which appeared in NATURE of July 1. It is true, and has been admitted from the very start of what is now known as the "Cotton Campaign," that some form of nitrated cellulose can be made from anything which contains cellulose. There is not the slightest difference of scientific opinion on this matter, and every competent chemist will concur with what I say, but in practical matters things stand on a totally different footing. There must not only be a regularity of the supply of material, but there must be uniformity of quality; and, in the article already referred to, this point has been made tolerably