expression, we find that they are respectively $+0.016$ and $+0.022$, so that the theoretical value of k becomes $6.451+0.038$, that is, 0.489. This even is in worse agreement with the experimental value 0.434 than the value 0.451 usually given, but a consideration of the experimental conditions shows that the value to be deduced is in reality 0.492, which is in excellent agreement. The argument will shortly be published in full.

E. CUNNINGHAM.

St. John's College, Cambridge, October 14.

Flint Fracture.

IT is to be regretted that the letter of Mr. Reid Moir in NATURE of September 24 has received no reply. If chemists, mineralogists, petrologists, and physicists could have been made to realise the fruitful fields for profitable and far-reaching research opened to them by this subject, our knowledge would be in a very different state to-day, and many of the contentions and mysteries would be replaced by demonstrable facts.

In all text-books we see descriptions, or references, to lydite, the touchstone of the goldsmith, and in museums and collections we see specimens bearing this name; all kinds of origins are claimed for it; sedimentary, volcanic, metamorphic, and one has even seen meteoric. In text-books we see descriptions of the pebbles in the Blackheath beds; we are told they are pebbles of flint still retaining their original black colour. As a matter of fact, they are not black flint; they are now of various colours. It is their surface that is black; the metamorphosed portion may not be thicker than tissue paper, but other examples can be found upon a sea-beach where it is an eighth of an inch thick, and from this onward until the whole is metamorphosed, and we have the jet-black mineral, which does duty under the name of lydite!

Just one more example. The same text-books describe the beautiful "Egyptian jasper"; some say the locality from which this has been derived is unknown; others venture to suggest one. One of the many metamorphoses of flint is jasperisation. We see this commence on the surface of flints (one of the things called patination); this proceeds in intensity and centrewards until the whole substance is altered, and we have the rich mottlings of yellows and browns, quite equal to those of Egypt. The so-called Egyptian jasper may be a metamorphosed British flint.

Mr. Reid Moir refers to lines radiating from the point of percussion on the fractured face of a flint; here is something for the physicist; they certainly are not "fissures," but rather lines of force (closely connected with facetted cones and stellate fracture). The best place to see these, and study them, is in asphalt or pitch. So long as the "fracture-" or "flaking-plane" maintains itself constant, *i.e.* in relation to the striking-plane, they remain fairly simple. If, however, the fracture-plane resolves, or even undulates very deeply, then a very remarkable phenomenon obtains, and the lines end in a row of cones just over the escarpment, looking like a row of pointed tents with a rope passing from the centre pole of each to the point of percussion!

The last weeks of Sir John Evans, before he took to his final bed, were spent in studying a large collection brought together to put the whole subject of lithoclasiology on a scientific footing. His last words to the collector were: "Promise me that if I do not pull through this operation, you will lose no time in publishing all this. I am certain that this is where we ought to have started sixty years ago, and no real progress will be made until we start here."

If we take half a dozen pieces of flint of exactly the same shape and size, and apply exactly the same force, administered in exactly the same manner, and of exactly the same intensity, the results may be very different in each case. Before we can argue from the effect to the cause, we must know something about the nature of the object acted upon. We must start with the origin and nature and varieties of silica, the various metamorphoses and molecular rearranging to which each variety is subject, and how each variety, in each state, responds to dynamic agency, whether administered by nature or man.

So also when we come to dynamics we must study every mechanical possibility, single them out, and name them, so that every observer may know what the other is speaking about. There must be no "peculiarities known only to the student," and "no features known only to myself." Each phenomenon must be capable of separate study, and receive a special name, so that all understand what they are talking about.

There are few who appreciate the splendid work which Mr. Reid Moir has been doing more than myself, but I am quite sure that if he were to restart the subject, on the lines here indicated, in a very short time he would regard the points he raises with very different eyes.

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Filtering Power of Sand.

THE letter of Mr. C. J. Watson in NATURE for October 15, recommending that "Nachtblau" (night-blue) should be used for experiments on adsorption by sand, leads us to point out that so far back as 1909 we demonstrated before the International Congress of Applied Chemistry (Section IV.B, p. 7) the striking experiment in which a solution of this dye issues perfectly colourless after passing through a column of purified sand. Since this date the experiment has been frequently used for demonstration purposes at lectures on adsorption by ourselves and others.

We showed in 1909 the remarkable quantitative relations existing between the weight of sand and the weight of dye absorbed; each degree of fineness of the sand is characterised by a remarkably sharp coefficient of adsorption, the value $\frac{\text{weight of dye adsorbed}}{\text{weight of sand}}$ being constant for the same sand to the sixth decimal place (in one series, for example, values 0.000147 to 0.000148 being obtained). The relation of these experiments to the general theory of dyeing was dealt with in the paper cited, and also in a later communication to the Society of Chemical Industry (1912, vol. xxxi.).

W. P. DREAPER.
W. A. DAVIS.

Scientific Societies and the War.

SUGGESTIONS have recently been made that certain of our scientific societies should suspend their meetings for the present, on the ground that "it is difficult to take an interest in such things just now." To those who share this feeling, it may be worth while to point out that, as already recorded in NATURE, the Académie des Sciences held its usual meeting Paris on September 7. Under that very date, in the *Times* review of the war for September, we find the entry, "Germans reach the extreme point of their advance." Among our gallant Allies, at all events, "le tour d'ivoire ne se rend pas."

W. T. CALMAN.

British Museum (Natural History), October 16.