

LETTERS TO THE EDITOR.

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The Mobilisation of Science.

THE article in NATURE of June 17 expresses forcibly what many men of science are thinking. The strange part of the matter is that the Government and the country generally do not share in these thoughts and do not take action by insisting on scientific men taking on themselves their share of the common burden. The general disregard of science is, of course, the fault of scientific men, and particularly of the Royal Society, but limitations of space do not permit me to enter upon that fascinating theme here and now. The point to be dealt with is: What is to be done now? NATURE says, on p. 419, that what is required is "the appointment of a National Committee with a free hand and ample funds for experimental work"; and that "we should possess a scientific corps, with men investigating at the Front as well as at home, instead of one or two committees advising officials as to possible means of offence or defence."

Mr. H. G. Wells, in his letters to the *Times*, seems to show that he holds the same views. Now, with all due respect to NATURE and to Mr. Wells, those methods are not in accord with our national characteristics, and are not suited to the needs of the moment. To be plain, they are counsels of perfection with the practical defects usually associated with such counsels.

Progress in our country, if not throughout the world, comes mainly, not from scientific discovery, but from its application. It is beside the mark to point out that without the researches of scientific men, the results could not be applied in practice. The advance of science is a blindfold march. No man knows whither it will lead, or what landmark may be reached even by the next step. This is not to say that each step is not carefully considered beforehand and its probable landing-place made the subject of the most earnest and profound thought. But it is to say that each step is only the preliminary to another step, and that science cares little about landmarks. The good scientific investigator is not concerned as to the immediate value of his work. He is in pursuit of truth. Let the world benefit by the way he has opened out if it is sufficiently wise. The imprisoned splendour has blazed forth. Let others work by its light.

This is precisely what the inventor does. He is not greatly interested in the splendour, but he is very much interested if he can see his way to making use of it in something "practical." He is often not particularly scientific, or at any rate has little scientific reputation. Yet a man who can apply science in his way as useful to science as science is to him. Just now it is the applications of science we want, not the underlying science itself. We want to stimulate invention, to get hold of the men with a "practical" turn, and induce them to do their best. How is it to be done?

To find the answer, the question must be considered a little further. The main thing with an inventor—the applier of science—is to know for certain of some competent person who will listen to what he has to say, who can judge of the value of what is said, and will not rob him of his ideas. The inventor wants the credit for his own work, and if he often positively prefers something more tangible, he may perhaps be forgiven in a world where success is nearly always

measured in one way. But does an inventor like to approach the Government? Of course, the man with superb self-confidence will do the most unlikely things. I will content myself with saying that many inventors would not do so. At this juncture some men at least are convinced, rightly or wrongly, that they would not receive a patient and intelligent hearing. It is impossible for the average Briton to get into his head that an official can be anything but stupid, incapable, and lazy, with a rooted objection to new ideas, especially if, as is probable, he does not fully understand them.

The method for the Government to adopt is to let it be known that the hearing will be patient and intelligent, and the adoption of new ideas immediate, if they are to be adopted at all. It is useless to set up Advisory Committees if they do not command the confidence of the men who have the knack of applying science. Possibly—I say it with bated breath—even the council of the Royal Society might not be the best Advisory Committee. Perhaps an admixture of more mundane material, even men from works who live by applying science, might be to the good. But at least it must be made clear to all by the widest publicity that the Committee is not one of officials, whose attainments are chiefly in directions other than science.

To me it seems that the various scientific and technical societies are enough, that any electrician would trust the council of the Institution of Electrical Engineers, that any chemist would trust the councils of the Chemical Society and the Society of Chemical Industry, that any metallurgist would trust the councils of the Iron and Steel Institute, the Institution of Mining and Metallurgy, and the Institute of Metals, and so on. These organisations are already in existence and consist of the mixture of men of the laboratory and of the works which would possibly give the best results.

The setting of men to work, whether at the Front or at home, in directions specified by the Committees is a matter which I have not touched, but this letter is already too long.

T. K. ROSE
(President).

Institution of Mining and Metallurgy, June 19.

The Magnetic Storm and Solar Disturbance of June 17, 1915.

THE greatest magnetic disturbance of the present cycle of sun-spot activity, which commenced in March, 1914, and the most violent since that of September 25, 1909, occurred on June 17, 1915. It commenced G.M.T. 1.50 a.m. with a sudden increase of H.F., and a corresponding sharp, though slight, movement of the declination needle towards the west. The greatest angular range in declination was $91.5'$ of arc, which occurred at 6 p.m. The spot of light on the recording drum of the H.F. gradually swung downwards with decreasing force, until at 7.35 a.m. it passed beyond the limits of record, and remained off for thirty-seven minutes. It then returned for a moment, when a further sharp decrease took it beyond the limits of record until 11.30 a.m. Then with a succession of oscillations it increased, attaining a maximum of angular displacement of $100'$ at 4.15 p.m. ($1' = 0.44 \times 10^{-5}$ C.G.S. units). The total range exceeded $130'$. The V.F. also attained its maximum value of increasing force at 4.15 p.m. In all the elements the disturbance was most intense between 4 and 6 p.m., although it did not exhibit any of the very rapid oscillations sometimes characteristic of such movements. A second phase, or repetition of the storm, consisted, as so often happens, of a few isolated well-marked swings in the form of peaks on the photo-