Some of the portions of the leaves and stems clipped from the plants dropped upon the soil of the pots and were allowed to remain there. Some days later it was found that a number of these fragments had put out roots from the cut surfaces and were developing into healthy shoots. As the plant under consideration is of great economic importance, a further experiment was tried in order to see if the regeneration of shoots from cut fragments of alfalfa is easily induced. A handful of fragments cut from an entirely different group of alfalfa plants was scattered loosely over the surface of a pot of well-watered soil. The fragments were watered from day to day, care being taken to avoid altering their positions. After a week it was found that fragments of several descriptions had rooted firmly and were developing into healthy shoots. The regenerating fragments included portions of stems, portions of petioles, petioles with blades attached, leaflets without petioles attached, and even small portions of the leaf blade.

So far as the writer has been able to learn, multiplication by this vegetative method has not been reported of alfalfa previous to this time. Under favorable conditions, such regeneration might assume considerable importance in the field. Especially suggestive is the possibility of strengthening a stand in an irrigated district by an early cutting followed by free watering. The cut portions might be left where they fall, or collected and scattered over areas where the stand is thin.

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QUOTATIONS

THE ORGANIZATION OF SCIENCE IN GREAT BRITAIN

AT last, on all sides, it is being recognized that we should organize our scientific resources. Had the suggestion which I made to this effect on January 20 been acted on—that is to say, if the Royal Society had grouped the whole body of its fellows (mainly according to subjects) in grand committees and set these to work—we should have been many months in advance of our present position, and not a little might have been done to apply science to the numerous problems which are only now being hinted at in public. In view of our scientific conservatism, it is impossible to blame the uninstructed masses and difficult to find much fault even with our rulers.

It is well known that the men who are versed in the chemistry and properties of explosive materials and who might, during all these months, have rendered the greatest service in perfecting their production and in improving them have not been consulted. One of the two men to whom the service ammunition of all the armies of to-day is due is still with us and an active scientific worker; in no other country would it have been possible that such a man should not have been called into consultation. Many of us might have been of assistance if only as foremen in works—technical foremen have been badly needed.

It is imperative that the strongest body of technical opinion that we can bring together should be behind the War Office and the authority that is charged with the supply of explosives. It is to be hoped that Mr. Lloyd George is now alive to this need and of the deadly peril in which we stand if it be neglected. The suggestion has been made that Lord Haldane should be invited to preside over a committee of concentrated scientific intellect to deal with war problems. But Lord Haldane, as a lawyer, would be entirely out of place as chairman of such a body; it must be in expert hands to be of service. The government is not competent to select the members of such a commission. I believe the Royal Society to be the only competent advisory body under the circumstances—it is our scientific House of Peers, and if it can not either itself furnish sufficient competent men or provide them from the junior ranks of science, the sooner it is declared defunct the better.

I would again urge that the society be organized forthwith as a whole; not only is this the only way of eliminating personal differences, but it is the only way of getting at the ideas latent in our scientific community. No half-dozen or so persons, at the present time, have the right to assume that they can do all that is required in any branch of science; no

small number have the right to push their colleagues aside and say we alone will serve the country.

Mr. Wells asks for inventions; but inventions are only made by those who are aware of the requirements; it is often possible to devise a means to an end when the end is known; but those who might be of use are kept in the dark, very many of us are not allowed to know and to help. Professor Fleming has stated his experience, in the all-important letter which you have published; his authority on matters of wireless telegraphy and electrical engineering generally is indeed properly described, in Lord Curzon's words, as "high, not only in the estimation of this country, but in that of the whole world." I am in the same position as he is. Though I have fifty years' experience as a chemist, particularly in connection with the materials now being used in the manufacture of explosives and of natural and artificial organic products, I have never once been consulted; the only request for my assistance that I have received, since the outbreak of the war, came from a German gentleman long naturalized as a British subject. No doubt, I am properly regarded as merely a retired professor, but I know highly competent younger men among those trained by me who are equally unutilized.

Sir Joseph Larmor pointed out in your issue of March 29 that the country has no use for chemists. Yet we read daily in the papers that the chemist is now the people's darling in Germany, and that the war is a war of chemists; we know that it will be in industry when fighting is over. But in a country which is dominated by the lawyer-politician, in which, to use Matthew Arnold's expression, "the idea of science" is unknown, it can not well be otherwise. We shall continue to muddle along until, having reformed Oxford, we have changed our schoolmasters and the idea of science is abroad; it is perhaps fortunate that it is fast being hammered into us by high explosive shell.

As a fellow of all but forty years' standing, let me say in conclusion that, in my opinion, unless the Royal Society be organized as a whole forthwith in the service of the state, as well as provided with an efficient active executive in full sympathy with the situation, we shall deservedly sink into insignificance, because the peers of science will have shown themselves to be collectively impotent and without due sense of their public responsibilities.—*Henry E. Armstrong, in the London Times.*

SCIENTIFIC BOOKS

Modern Instruments and Methods of Calculation. A hand-book of the Napier Tercentenary Exhibition. Edited by E. M. Horsburgh, with the cooperation of others. The Macmillan Company, New York, 1914. Pp. viii + 344. Price $1.90 net.

It is very seldom that an international congress or a celebration on the occasion of any kind of academic anniversary offers the opportunity for the publication of anything more elaborate than a volume of memoirs. Such volumes are generally well worth the effort, but there is rarely anything unique in the plan, and the publications often serve as a tomb in which various worthy articles are consigned to oblivion. The Napier Tercentenary, however, offered an opportunity for something radically different in the way of memorial volumes. To be sure there is the collection of essays, soon to appear; but the committee in charge of the work hit upon the idea of an exhibition of all sorts of tables and calculating machines, and fortunately found a man well trained in the field of calculation, sympathetic with the historical development of the subject, and skilful in setting forth the description of material, and to this man they entrusted the task of preparing a volume that is quite unique in the history of such congresses.

Mr. Horsburgh had in charge the arrangement of the interesting exhibition in the university, and to some extent this work is a catalogue of the material displayed at that time. It is much more than this, however, since it includes a series of valuable essays describing the tables, the calculating machines of various types, and those instruments which, together with models and other material, enter into the equipment of a modern mathematical laboratory.