

Letters to the Editor.

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Knowledge and Power.

THE question raised in the leading article on "Knowledge and Power" in NATURE of March 25 is of great interest and importance. It is nothing more nor less than the question of using experience as a guide to action, which is the whole purpose of education. The suggestion that its solution requires a fundamental change in the organisation of the Civil Services in order that the best advantage may be obtained for the country from the special knowledge and training of the expert brings to a focus the essential difficulty of the subject. I suppose that the real function of any Department of the Services, civil or military, is to carry out the policy of the Government as formulated or approved by the responsible Minister; and the staff of the Department is recruited in such a way as to secure that object. The knowledge in the light of which the Minister's policy is formed is another matter. It may be taken for granted that if it is well advised, the Government will utilise all the best technical knowledge available. A Minister may find it in special sections of his own Department, or he may try to acquire it from outside. No doubt he is largely guided by his chief permanent officers, and they in turn must use their own knowledge and that of their subordinates or obtain what they can get from outside. How effectively to provide a Minister with all the pertinent experience about technical problems is not an easy question. It is made still harder by the fact that even for experts the recognition of the value of new knowledge is not necessarily automatic. The reception that was given to Thomas Young's theory of light is a reminder for all time that new ideas require favourable environment for assimilation. Consequently, some knowledge of what the world is made of is necessary for all executive authorities. But that, as Kipling says, is another story.

Suppose we picture to ourselves the difference between a youth's progress in the Civil Service and in the career of an expert in science. The Civil Servant is selected by open competition in subjects which may include literature or science; but from the time of his joining the Service the pursuit of either ceases to be a part of his working life, though either may be followed as a hobby. He must leave even his political opinions at home and begin to learn the art of giving expression to the policy of the Department which he joins. He learns from his immediate superiors how things are done. Why they are done does not concern him. He learns also the discipline of a public office and the art of formulating documents for his superior to sign. His opportunity is to make himself so loyal and so efficient in carrying out the policy that any chance of promotion that comes his way is not lost. If he has lofty ambitions beyond his own steps in the Service, he must postpone them until he reaches a position in which he can gain the Minister's ear. Up to that time his life is a life of self-effacement.

The history of the expert is altogether different. His training leads him to begin his career in research, and if he is successful he attains the unspeakable satisfaction of having discovered for himself something of real importance. Thereafter he has always

ideas of his own which he strives to realise, and as his experience grows he forms lines of policy for himself, and is not very tolerant of others. His career is one of continuous self-assertion from the beginning. He may derive his ideas from instruction or inspiration, but the expression of them is his own; and what may be only the natural expression of his genius may look like disloyalty to his superiors in the world of red tape.

The positions of the two types with regard to finance are equally diverse. The Civil Servant has no difficulty in establishing the position that as the Minister wants things done he will, of course, be prepared to provide adequate remuneration for those who carry out his wishes. Money is therefore forthcoming. But the expert has to convince the Minister, or persuade someone else to do so, that his projects are worth trying in the public interest and can be justified in Parliament. He has to ask for permission and facilities for research, the results of which are, *ex hypothesi*, unknown; to ask for pay in addition is to invite refusal of everything.

Moreover, the discipline of a body of experts is quite different from that of a public office. What is wanted from an expert is his own spontaneous opinion as a guide to action—a something which a Civil Servant is not expected to possess. It seems to follow that experts and Civil Servants are as different as oil and vinegar, and the endeavour to mix them promiscuously in one organisation will not work. They belong to different atmospheres; what stifles one gives buoyancy to the other.

Somehow or other an advisory side for formulating policy ought to be organised on different lines from those of the administrative side which carries out the policy. But if there is a separate organisation on the technical side it ought to have direct access to the Minister finally responsible, and not be fenced off from him by a secretariat trained on different lines. There are sure to be misunderstandings and ultimate despair if all the work of a professional technical staff has to pass upwards and downwards through the refracting and distorting medium of an inexpert secretariat. The scheme of organisation must be in sectors reaching continuously from the Ministerial centre to the circle of recruitment. The technical staff itself will want the assistance of "civil servants" content to follow out the policy which is indicated. The mischief begins when the Civil Service forms a complete belt in the inner regions of the organisation. In that case an inexpert Minister is completely surrounded by inexpert advisers, and then power is cut off from knowledge.

F.O.I.

THE vast conflagration of the late war rendered conspicuous many truths that were little suspected by the majority, and not the least of these was the importance, the necessity, of organised and accurate scientific knowledge and research for national success. Unfortunately, this is already in danger of being forgotten while we are engaged in the strenuous task of preserving for our country its due and fitting place in the industries and activities of the world, and the leading article in NATURE of March 25 has sounded a very necessary note of warning. It rightly emphasises the need that the ultimate administrative authority should be vested in men with technical knowledge and experience, and not in Civil Service officials appointed originally, for the most part, on the basis of purely literary attainments. This authority will, however, never be conceded to the man of science until the scale of his remuneration corresponds to the importance of his work. It was repeatedly