

## LETTERS TO THE EDITOR.

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## Research and Service.

THERE appeared in NATURE for February 13 last a criticism from the pen of Prof. F. Soddy of an attitude expressed by me in my book entitled "The Twin Ideals." As there seems to be some possibility of misunderstanding, owing to the form of the work, may I briefly express the position I endeavoured to indicate? Those who indulge in the monastic attitude, who withdraw from the world and prosecute research of a recondite character, are outside reasonable criticism provided the work is done at their own expense. If, however, this work is to be supported from public funds, justification is necessary, and the justification has appeared to me to be twofold. In the first place, few people have the inclination or capacity for research, and it is therefore an attitude that should be encouraged. In the second place, practical discoveries of value are at times made incidentally to research of the kind. It appears to me, however, that much damage is done by the assumption on the part of such researchers that their efforts are the only line of research worth considering. I have never been able to satisfy myself that research conducted with a definitely practical end in view would not be equal to, if not more valuable than, the monastic form. I have, therefore, simply asked that in their attitude to the world at large those who prefer the life of the scientific recluse should recognise the equal value of the work of those whose inclinations take them in a practical direction, and that they should not seek to divert bright young intelligences into their own channel of activities when they tend to develop in the opposite direction.

Furthermore, there seems to me to be a moral obligation on all men of science to take practical steps for the diffusion of the knowledge gained, so that anything of practical value may be utilised by humanity in general. It has seemed to me that the monastic habit in researchers, together with indifference to the immediate requirements of the world and with the disposition to regard their own set of activities as paramount, is apt to produce results that are beneficial neither to the individuals concerned nor to the nation.

JAMES W. BARRETT.

SIR JAMES BARRETT reiterates in his letter the views he has expressed in his book "The Twin Ideals," which I reviewed in NATURE, but I fail to see how they have been or can be misunderstood. He says that at times practical discoveries of value are made incidentally to researches pursued for their own sake, apart from practical ends, and that such investigators assume their efforts to be the only kind of research worth considering. It would be more generally agreed, I think, that all the great practical advances of the present scientific era owe their origin to purely theoretical investigations pursued for their own sake, and that such work is as different from the pursuit of practical discoveries of value as scientific exploration is from prospecting for gold, minerals, or specific commodities. To ask whether researches conducted with a definite practical end are not equal, if not superior, to those concerned with the advancement of the boundaries of knowledge seems like asking whether the fruit of a tree is not of equal or superior value to its root. To suggest that those pursuing

researches of a recondite and academic character, who find it necessary for their work to withdraw largely from the practical world of affairs and politics, are only outside reasonable criticism if their work is pursued at their own expense seems as unreasonable as to deny nourishment to the roots of a tree because of their recluseness, their indifference to the immediate requirements of the world and inability to survive being hauled out into it. FREDERICK SODDY.

## Wild Birds and Distasteful Insect Larvæ.

IN the literature on mimicry and protective colouring, many writers have claimed that both the larva and imago of the currant moth (*Abraxas grossulariata*, Steph.) are protected by colouring and an acrid flavour, in consequence of which they are usually rejected by wild birds. That the larvæ of certain moths are distasteful to birds has been proved by actual experiment, but I have considerable doubts as to the inclusion of the currant moth in this category.

In my work on the food of wild birds I have found the imagines, and more often the larvæ, of *Abraxas* in the stomach of the song thrush, missel thrush, blackbird, great tit, whitethroat, house sparrow, yellow bunting, and cuckoo; and in 1918 large numbers of the larvæ were found in the stomachs of the song thrush and missel thrush over a period of seven consecutive days.

In the case of the song thrush, the parent birds were observed collecting these larvæ during the first five or six days after the young were hatched, and were seen to bring the same to the nest, where they were readily devoured by the young birds. Indeed, a very large proportion of the food fed to the nestlings during this period consisted of the larvæ of *Abraxas*. Then the parent birds suddenly ceased to feed upon them.

Knowing that the supply was by no means exhausted, the currant bushes were examined and numerous larvæ observed. Forty-one specimens were collected and placed on fresh leaves in large glass dishes, but not one of the larvæ reached the pupa stage. From this collection we hatched out fourteen masses of cocoons of *Microgaster* and twenty-seven specimens of *Exorista*.

Although the currant bushes were very badly infested with the larvæ, we failed to find any pupæ in the soil beneath them, although it was collected and most carefully searched; moreover, during the present season not a single larva of *Abraxas* has been found on these bushes, and there must have been thousands of them during 1918.

Here, I think, we have an explanation of why the thrushes ceased to feed upon the larvæ, viz. because they were parasitised, and also an excellent example of two natural agencies—wild birds and insect parasites—practically exterminating what would undoubtedly have been a plague this year.

It is well known that the larvæ of *Abraxas* are frequently parasitised by the two above-mentioned insects. Is it not possible that the parasitised larvæ alone are rejected by wild birds, and only the non-parasitised specimens fed from?

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## Science and Salaries.

THE issue of NATURE for July 11 contains a large number of advertisements of vacant posts of which details as to salary are stated in seventy-five cases. A few advertisements, which have been omitted from the following calculation, made no mention of salary.