

way: The field was first turned over to a depth of 5 to 6 inches and then treated with the solution of the herbicide. When 2 N chlorate solution was applied this way at a rate of one liter per square meter, only 16 plants (*i.e.*, 4 per cent. of the control) were seen per square meter after 20 days. In analogous experiments with one liter of 2 N thiocyanate per square meter the number of plants was reduced to 1 per cent. or less of the control within 90 days, so that the eradication was virtually complete. Two to three months after these experiments the plots have been used again for the cultivation of corn, tomatoes and cayenne pepper without any damage to the crops. In the two following years of cultivation no new infestation with nut grass has been observed in these fields.

Hence, the simultaneous application of tillage and a 2 N thiocyanate solution seems an equally effective and cheaper way of controlling nut grass than the frequent plowing, as recommended by Smith and Mayton.

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THE DUTY OF THE ENTOMOLOGIST¹

It has been customary in France to designate certain scientific societies, organized without reference to commercial profit, as societies of public utility. Now, in the midst of war, we have to ask, Is the work of entomologist of public utility, and if so, in what respects? To-day I received from the Royal Entomological Society of London a large package of highly technical papers, just published, with many excellent illustrations. It would, I am afraid, have proved difficult to get those papers published in the United States, or if they were, the authors would have been expected to pay for the figures. For some time, Professor Ferris of Stanford University has been bringing out a fully illustrated treatment of the scale insects or Coccidae. Although this group of insects has great economic importance, Ferris had to put up a large sum of money to get the last part published and he states that he can not continue the work on that basis. It appears probable that we shall be deprived of a work which would be of very great value, not only now, but in the years to come.

In wartime the standard of values changes. The

¹ In 1927, my wife and I were in central Siberia, working under the auspices of the Geological Committee of the U.S.S.R. At that time there were, I believe, about 200 trained geologists exploring all parts of the vast Russian dominions, mapping the country and recording the deposits of coal, iron and various minerals. If I had suggested at that time that the work of these geologists would, fifteen years later, be of vital importance to the United States, the idea would have seemed too fantastic to be worth discussing.

ordinary scientific worker, such as the present writer, has been accustomed to carry on researches looking toward a more or less remote monograph, which we may never live to see. We have regarded our work much as a mother regards her child: always interesting, very dear to us, always growing, and we hope, destined to mature and do things in the course of years. But in wartime we need results to-morrow, something which can be applied without delay to the existing situation. It is not altogether easy to adjust our minds to the new conditions, but we must do it. Just now I am much interested in the appointment, by both army and navy, of numerous entomologists who will accompany the various units to different parts of the world, and will have to ascertain the presence of any insects or other arthropods which may convey disease organisms to the troops. I am sure they will save many lives and reduce the incidence of malaria in particular. When things have become more stabilized, it is proposed that the entomologists who have to stay at home shall nevertheless have an important service to give, that of supplying information and getting species identified. Already it is possible to give some advice of consequence. Thus in New Caledonia they have neither *Anopheles* nor malaria. In the New Hebrides, not far away, they have both. Under war conditions it might be possible to accidentally carry *Anopheles* to New Caledonia, and the results might be disastrous. There are various other similar cases.

Now it will be noticed that the rapid work of the war-time entomologist is only possible because of the patient labors of earlier workers, extending through many years. This work would be more efficient if more such work had been done, but since it was clearly recognized that insects were connected with disease, the amount of study given to such insects is tremendous, and is published in many splendid memoirs. So, also, the insects affecting the crops have been intensively studied, though not yet sufficiently.

One thus comes to the conclusion that although we must largely concentrate on matters which are of immediate urgency, the relatively slow march of science should not be halted. It is quite right to urge, as a war policy, that we should reduce the use of luxuries, but it does not seem right to classify scientific work under this head. The research work of entomologists, in any country, involves only a small number of workers, and the publication facilities which they need are, as compared with other types of publication, exceedingly small. There should, indeed, be a stepping-up of research, with increased rather than diminished facilities. This not only for economic reasons, but as promoting a sane outlook on life.

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