

An Englishman's Castle

The jaundiced views of a free born Englishman from behind the barbed wire of a Wiltshire farm - blasting the Bogusmongers and other assorted pondlife.

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DDT - the view from 1945, still valid today!

Browsing The Castle Library I came across this 1945 article on DDT - I have cut out the most interesting parts and tried to OCR them - the scan is below the fold.

The conclusion is as valid today as it was then..

JOURNAL OF THE ROYAL AGRICULTURAL SOCIETY OF ENGLAND
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VOLUME 106, 1945.

THE NEW INSECTICIDES D.D.T. AND BENZENE HEXACHLORIDE AND THEIR SIGNIFICANCE IN AGRICULTURE

INTRODUCTION.

It one of those coincidences that seem unaccountable in terms of pure chance, two of the most remarkable insecticides ever to be discovered came to light about the beginning of the present decade, these were the materials now widely known as D.D.T. and as benzene hexachloride, 666, or Gammexane. The coincidence extends further in that each substance was discovered very many years before its insecticidal properties became apparent. Nor does the resemblance end there, for the two substances share the distinction of being the first examples of a new class of insecticides. All insecticides act either by contact with the external surfaces of the insect or by being ingested. Until the new discoveries, the former group—the contact poisons—comprised more or less evanescent materials like nicotine, which is volatile, and pyrethrum, which is chemically unstable. Conversely the permanent ' insecticides like lead arsenate and Paris green were all stomach poisons with little or no contact activity. The unique characteristic of D.D.T. and benzene hexachloride is that they combine contact activity with a stability and persistence that confer protective properties. They are, moreover powerful stomach poisons as well, and benzene hexachloride can act also as a fumigant. Because they embody this novel combination, the introduction of two new insecticides has opened up entirely new possibilities in pest control; The conjunction of outstanding properties with the mystery in which official policy shrouded these products has provided an opportunity for sensational accounts rarely equaled in pseudo-scientific journalism. D.D.T., in particular, has had thrust upon it a publicity as unwelcome as it has been, in the main, inaccurate, with the inevitable result that 'the man in the street,' according to the measure of his cynicism or credulity, has come to regard it either as just one more quack remedy or as a near-miracle that will solve most of the world's outstanding problems. '.....

In normal times the new insecticide would no doubt have come slowly to general acceptance by the usual stages of trial, development, and large scale use. But 1939-40 saw the closing of all the normal channels of communication with the Continent and no intimation of these discoveries reached this country for several years. By the time D.D.T. was brought to the notice of the British and American authorities late in 1942, the insecticide position had become one of acute difficulty, for supplies of derris and pyrethrum were very low and quite inadequate to meet service requirements. In consequence D.D.T. was taken up and its potentialities in relation to military needs explored with unexampled speed and energy. The resulting unqualified success against disease-carrying insects, especially mosquitoes and body lice, is an often told story that need not be repeated here. It is sufficient to quote the view that D.D.T. has probably been a major factor in the success of several allied military campaigns. While it is no part of the purpose of this review to deal with non-agricultural applications of D.D.T., it may be said in passing that striking success has been achieved against such diverse pests as house-flies, cockroaches, lice, bed bugs, mosquitoes, tsetse flies, and locusts.

In the United States, where the treatment of very large areas by spraying or dusting' from aeroplanes is contemplated, concern has been expressed about the possible long-term effect upon wildlife in general. Although Weismann stated that Gesarol was harmless to fishes, it has since been shown that D.D.T. preparations are highly toxic to many cold-blooded vertebrates including frogs and snakes, as well as fishes. It is alleged too, that large numbers of birds have been killed, possibly by eating poisoned insects. Again this is a problem whose answer is to be found only in

practical experience on a large scale.

All these unanswered questions should stand as no more than warning signposts. They are evidence that neither the reckless enthusiasm nor the unqualified condemnation that sonic popular writers have displayed is justified.

Yet another of the problems associated with the use of D.D.T. is that of its effect on warm-blooded animals and especially humans. There has been a deep cleavage of opinion among American toxicologists, but the majority seem now to be convinced that there need be no misgivings arising from normal use. There is also the evidence that millions of service and civilian personnel have been in prolonged contact with D.D.T. in treated garments without a single known case of ill-effect. Cameron and Burgess are of the opinion that sprays containing upto 0.1 per cent. could have serious effects only as a result of grossly careless handling. On the other hand, they are insistent that precautions are essential in handling higher concentrations, especially oily solutions. Wigglesworth has reported a case of nervous derangement following drastic and deliberate exposure, but even here the effect was transitory. There are, perhaps, two directions in which present information is inadequate. These are on the cumulative effect of small doses such as might arise in spray residues, and the effect of exposure to solutions of D.D.T. in oil, such as might be encountered in certain spray combinations. Excluding gross negligence neither of these is likely to prove serious, but the United States Department of Agriculture has provisionally fixed 7 mg. per kg. (0.01 grain per pound) as the level beyond which D.D.T. residues should not rise,

CONCLUSION

Much work still remains to be done with both D.D.T. and benzene hexachloride, especially in the direction of devising the most suitable formulations for particular purposes, of determining minimum concentrations for effective control, and of observing their cumulative effect upon the general fauna of treated areas.

The two materials have opened up entirely new possibilities in insect control, but with their bright promise they have brought also potential dangers. To meet this situation it is essential that the first few years of the commercial use of these insecticides should be regarded as all extension of the experimental phase. This period of extended trial should be entered upon with open minds free from prejudices in either direction, and with a willingness to accept and act upon the findings of careful and reliable observations. There is little doubt that if such a rational outlook is maintained towards the development of these materials, they are capable of facilitating perhaps the greatest single step forward that man has ever made in his unending contest against the insect world.

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