NEWS AND VIEWS

DEATHS OF PROMINENT ENTOMOLOGISTS

It has been with considerable regret that the death notices have been recently noted of several outstanding workers in the field of entomology. On September 24th, 1936, *Dr. J. W. Folsom,* entomologist in the Division of Cotton Insect Investigations, Bureau of Entomology, United States Department of Agriculture, at Tallulah, Louisiana, died at Vicksburg, Mississippi, after an illness following heart attacks. Dr. Folsom was 65 years old. On January 11th, 1937, *Professor Cyrus R. Crosby,* professor of entomology at Cornell University, died on his arrival in Rochester for the annual meeting of the New York State Horticultural Society. He was 58 years old. *Professor Robin Tillyard,* an honorary fellow of Queen's College, Cambridge, was killed in an automobile accident, on January 13th, 1937. Dr. Tillyard was 55 years old and from 1928 to 1934 was chief entomologist of the Commonwealth of Australia.

ANOTHER BIG GRASSHOPPER YEAR INDICATED BY SURVEYS IN WESTERN UNITED STATES

Officials of the U. S. Department of Agriculture state. in a recent press release, that grasshopper activity for 1937 is less predictable than for any other season since they started making annual surveys of this pest. Delayed and erratic egg laying—the result of the abnormal weather of 1936—and lack of time for thorough scouting for eggs in the ground last fall—because winter closed in so soon—have made it difficult to forecast the numbers of hoppers likely to hatch next year, according to Lee A. Strong, Chief of the Bureau of Entomology and Plant Quarantine. Present indications, however, point to serious outbreaks in Illinois, Missouri, Iowa, Nebraska, Kansas, North Dakota, Montana, Wyoming, and Colorado and to less serious infestations in Michigan, Wisconsin, South Dakota, and Oklahoma.

NEW CHEMICALS PROMISE AID IN INSECT CONTROL

Out of the thousand or so potential insecticides that have come from the chemists' test tubes in the last few years, three or four now show definite promise as valuable aids to the farmer in his never-ending war on insect pests of crops, particularly fruit. None of them, however, can yet be recommended for general use. Further work must be done to iron out certain difficulties in the economical manufacture or practical application of each, according to Lee A. Strong, Chief of the Bureau of Entomology and Plant Quarantine, U. S. Department of Agriculture.

The most promising of the department's newest insecticide discoveries, Mr. Strong says, is phenothiazine, a compound of carbon, hydrogen, nitrogen, and sulphur that is easily prepared by combining diphenylamine—a common aniline derivative—and sulphur. After preliminary tests in the laboratory had shown that it killed the larvae of mosquitoes and of the codling moth exposed to it, phenothiazine was taken out into the field for a limited trial. When it gave promise in these small-scale tests, it was put through a course of large-scale field tests. The results of these tests, though in the main highly encouraging in the Northwest, show the need for more study.

In the Northwest phenothiazine controls the codling moth—Number 1 apple insect pest—much better than lead arsenate, for many years the apple grower's main standby, but now generally considered far short of the ideal insecticide. Chief advantages of phenothiazine are that it keeps down the number of stings made on fruit by the worms, and that the residue it leaves is less likely than lead or arsenic to injure human consumers of the treated food products.

The main obstacle to the widespread use of phenothiazine in northwestern orchards is its effect on the skin of those who handle it. Many orchard men, particularly sprayers, using it are afflicted with what looks—and feels—like a severe sun burn. Sometimes also apples treated with phenothiazine are paler than untreated fruit. The department is making every effort to discover ways for overcoming the few objectionable features in spraying or dusting with phenothiazine.

Another possible substitute for lead arsenate suggested by the chemists is nicotine in a form that will stick on fruit and foliage long enough to accomplish its purpose. Bentonite—a natural clay of volcanic origin, found in Wyoming, California, and other nearby States—can be made to unite with nicotine by mixing it with a salt of nicotine, such as the sulphate, dissolved in water. Sprayed on foliage, this suspension of nicotine—containing clay eventually dries to a fine dust that kills the larvae of the codling moth feeding there. Nicotine-bentonite combinations, Mr. Strong says, would seem to be particularly useful in spraying early apples, which do not call for a very large number of applications of an insecticide and do not stand washing for spray residue removal as well as the firmer winter varieties.

Combinations of nicotine with peat also are being tested. Mixing free nicotine with peat in water produces a chemical reaction, consisting of the combination of the acid constituents of the peat with the nicotine, which is alkaline, to form two products—nicotine peat, which is insoluble in water, and nicotine humate, which is soluble in water. Nicotine peat contains up to 13 percent of nicotine in a form that will not wash off sprayed apples and foliage. What this material will do under practical orchard conditions remains to be seen.

Results with mixtures of nicotine sulphate in oil emulsions have been highly encouraging in the apple-growing regions of the Pacific Northwest and fairly encouraging in the Middle West and East. In the regular spray schedule, however, these mixtures are open to objection on several points. Sulphur fungicides—necessary to combat fungous diseases in many northeastern orchards—can not be used with them; too many applications may injure foliage; lead arsenate residues can not be as readily removed if nicotine and oil have been used in part of the season; and last, but perhaps not least, nicotine treatments are expensive.

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