

SCIENCE NEWS

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THE CONTROL OF MALARIA

DDT may solve the problem of malaria control in rural areas of the South, it appears from a test conducted by the U. S. Public Health Service in Arkansas. Results of the test, called "striking," were reported by Dr. F. L. Knowles, senior bacteriologist of the office of malaria investigation, U. S. Public Health Service, at the meeting in New York of the American Association of Economic Entomologists.

A widespread federal campaign, to combat the threat of malarial flare-ups resulting from the return of service men who have contracted malaria overseas, is expected to get under way as soon as sufficient DDT becomes available.

DDT supplies "will remain very tight through March and possibly April," John A. R. Rodda, in charge of insecticide allocations in the War Production Board, told the entomologists. "We are still working on military needs, which are consuming practically the entire production. Besides, the raw materials for manufacturing DDT have become critical and are granted only because of the military needs for DDT."

Describing the Arkansas DDT tryout in malaria control, Dr. Knowles pointed out that malaria is an unsolved problem in the southern states because regular control methods are too expensive.

"Spraying the insides of the houses is more effective. The unique residual toxicity of DDT should make it still less expensive and more practical.

"We picked 36 square miles in Arkansas near Helena. This is cotton country. Ninety-five per cent. of the houses are of tenant or share-cropper type, shotgun-construction, newspaper-lined, inhabited by Negroes making only a marginal living. With two high-school boys we sprayed the insides of these last summer, leaving every twenty-fifth house unsprayed as a check.

"Daily inspections of the sprayed houses throughout two months after spraying showed that for that long a period, there was a 94 per cent. average reduction in the number of mosquitoes, resting, alive, on the indoor walls." What happened, he said, was that the mosquitoes came indoors at night, alighted on walls and ceilings bearing an invisible residue of DDT, and were fatally poisoned. This effect takes several hours, but is rapid enough so that "there was an average 80 per cent. reduction in number of living, resting mosquitoes from early morning to afternoon." This technique, it was added, hits the mosquitoes at the strategic time: the night, when they are lying in wait indoors to bite sleeping victims.

The job used an average of .82 of a gallon per house of five per cent. DDT solution. Per house it consumed 10 minutes, took .73 of a man-hour, and cost 74 cents for material and labor.

ITEMS

ACCORDING to statistics of the Metropolitan Life Insurance Company, men and women born in foreign countries, who in the past reared large families in America, now

have about the same number of children as native Americans. People who migrated to this country a generation or more ago gave birth, on the average, to 150 children for every 100 born to native parents. In 1940, however, foreign-born women had only about 99 children to every 101 born to native women. The decline in birth rates from 1920 to 1940 was, therefore, greater for the foreign born. For mothers in the twenties, the rate for native Americans fell by about one sixth during these twenty years, while the rate for the foreign-born fell by two fifths. One fact that must be taken into account in interpreting these figures is that the foreign-born dwell predominantly in urban areas, which have always been characterized by relatively low birth rates, while the native-born are more evenly distributed among cities and rural districts.

PRODUCER gas for motor vehicles may be extensively used in Canada during the remainder of the gasoline shortage period, if findings resulting from investigations of substitute fuels made in a report which has just been issued of the Canadian National Research Council are followed. Other promising substitutes studied by the council and found reasonably satisfactory are alcohol and methane or propane. A report by the council has been issued. Wood, wood waste and charcoal were studied by the committee. A variety of portable generators were tested, including eight made in Canada, three from England and two from Sweden. Eleven of these were charcoal equipment, the other two use wood. Two of the thirteen seem to give more satisfactory performance than the others and a considerable number of these two models will be given road tests on cars and trucks. The two given preference burn charcoal, a commodity that may be made available in Canada in sufficient quantities to meet all needs. The first is the cross-draft, dry-blast type, with a single water-cooled copper tuyere or pipe, and no grate. The second is a down-draft, dry-blast type with rotary shaking grates.

THE use of air-cooled steam condensers on mobile electric power plants where water cooling is impossible was described at the same meeting by R. A. Bowman, of the Westinghouse Electric and Manufacturing Company. In connection with the rehabilitation of wartorn areas of the world, he said, there is need for power plants that can be moved easily from one locality to another and put in operation in a short period of time. In some places where they will have to operate where water for cooling will not be available. To meet this condition a number of power trains have been built to use air as a cooling medium rather than water. "Tests on the air-cooled condenser for the power train indicate that such a condenser is entirely practical. Because of the poor heat transfer properties and the low specific heat of air, such a condenser in general requires higher auxiliary power, greater investment and higher back pressure on the turbine than would the usual water-cooled condenser." For these reasons its use will probably be confined to places where water is not available.