

ENTOMOLOGY-PUBLIC HEALTH

DDT War on African Flies

Vast new areas may be opened for living and food growing if the new insecticide can conquer the responsible agent of the dread African sleeping sickness.

► PILOT plant experiments that may bring more food and more living space for the hungry, fast-growing population of the world are attracting the interest of scientists at the U. S. Department of Agriculture.

The experiments are testing DDT as a conqueror of the tsetse fly and the dreaded disease, African sleeping sickness, or trypanosomiasis. If successful, they may open for food production and settlement vast, now uninhabitable areas of Africa.

Tsetse flies spread the germs of this wasting disease that dulls the mind and slows physical activity, causes protracted drowsiness and, if not treated, kills. It is an entirely different ailment from the virus-caused disease we call sleeping sickness in this country and which has the medical name, encephalitis.

The germs of the African sleeping sickness are blood parasites that feed on the blood of wild and domestic animals as well as man. The wild, or game, animals do not get sick from the germs in their blood, however. Instead they serve as a reservoir of germs for the flies to spread.

Interferes with Development

The disease has dominated and seriously interfered with the development of about one-fourth of the continent of Africa, authorities state.

The number of disease-carrying tsetse flies in one area of bush country in Zululand dropped significantly following airplane spraying of DDT, Dr. P. J. du Toit, director of veterinary services, Union of South Africa, reports.

The test area was 100 square miles. Flying across wind at 120 miles per hour at a height of about 50 feet, South African Air Force pilots laid down a dense white smoke of DDT across a swath 70 yards wide. About 50 acres per minute were sprayed. Up to six aircraft were used at a time, succeeding ones following the leader at intervals and taking alignment at the edge of the visible spray left in front.

Cost of spraying the 100 square miles was about 40 cents an acre for the DDT and 20 cents per acre for the aircraft services. The area was treated this way

six times. Elaborate tests were made of the actual spread of the DDT in the bush country. Where there were breaks in the ground because of small ravines, the spread was uneven. DDT grenades placed by hand were used to supplement the spraying at such places. Previous trials of entirely hand-operated spraying from the ground, however, had proved unsuitable because there was not enough penetration of the foliage. The time and number of workers needed also were so great as to make the hand ground spraying impractical.

Survival of Flies Small

The flies were not entirely wiped out by the combined ground and air spraying, but the numbers that survived were exceedingly small. The tsetse fly reproduces slowly and there have been instances of it disappearing from a heavily infested area when its animal food supply was greatly reduced. So presumably there is hope that if DDT can reduce the number of flies drastically, the remaining ones may gradually die out.

This Zululand spraying was a pilot experiment, and an enormous amount of work will be needed before the relative value of this or any other method of control can be assessed, Dr. du Toit stated in a report to the London School of Hygiene and Tropical Medicine.

The experiment has, he said, "provided certain definite and significant results."

"Where the fly was a nuisance to individuals working in or passing through the area, they are now rarely noticed.

"Sufficient has been done in Africa to justify a tremendously increased scale of operations against the tsetse fly. The amount of money spent on research on methods of controlling the fly since Africa has been developed by the white race has been pitifully small in comparison with the harm it causes and the extent to which it limits the utilization of land potentially valuable for husbandry and other purposes. Here is a problem which requires costly and large-scale research. If very large tracts could be made available as a result of experimentation, the money would be well spent.

"It is of course to be understood," Dr. du Toit added, "that hand in hand with successful tsetse fly control in tropical Africa measures for dealing with prevalent social and agricultural systems that lead to over-stocking and consequent soil erosion would require attention. Not one of the least important problems would be the provision of adequate water supplies for livestock and efficient use of such water."

Details of the experiment have just reached scientists through the English scientific journal, *Nature* (Oct. 11). Other, unpublished reports of the work have come directly to the U. S. Department of Agriculture from government agriculture officials in England, and they have also heard that the Belgians were undertaking similar DDT anti-tsetse fly work in the Belgian Congo.

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