

PUBLIC HEALTH

Flyless Age Now in Sight

Many towns have waged successful campaigns against these enemies of man and animal with combined weapons of DDT and modern sanitation.

By GERTRUDE ELMSLIE ARUNDEL

► **BEELZEBUB**, prince of devils, was originally god of flies. His name, incised in cuneiform script on ancient clay tablets, is *Baal-Z'ubub*, which englishes as "lord of buzzing things." His reign has endured through centuries of filth-engendered pestilence, yet his kingdom is not an everlasting kingdom. Within the past three years, city after city in our land has risen in revolt against him; his subjects have been massacred by millions. We are within sight of a flyless age.

Here are the stories of some of man's successful uprisings against the tyranny of the flies:

In the university town of Moscow, Idaho, there's no market for fly swatters any more. Last year many residents left their windows unscreened all summer long; restaurants did away with flytraps and sticky flypaper and propped open their screen doors. Indeed, flies were so scarce that for two weeks in September entomologists at the University of Idaho were unable to trap a single fly for their research experiments.

Flies Can Be Abolished

From every town where people have rolled up their sleeves and sprayed alleys, stockyards, dwellings, farm buildings with DDT, comes the same good news: the fly, enemy of comfort and carrier of disease to man and beast, can be abolished.

On Mackinac Island, Michigan's famous summer resort, where automobiles are banned and horses are the chief means of transportation, flies were always a serious health menace. Each season hotels had to set out flytraps by the hundreds. Surrey drivers had their spray guns handy at all times, and new coachmen were warned not to take their teams into parts of the island where swarms of flies had maddened more than one horse into bolting. Then the State Health Department decided to take action. A fire-truck pump, rigged with tanks of DDT, sprayed hotels, restaurants, streets and every building in the business district. Such notorious fly hangouts as horse barns, manure piles and the public dump got extra doses.

The DDT wiped out flies so completely that coachmen stowed away their horse nets, and hotels burned their flytraps in a glorious good-riddance celebration on the Fourth of July.

For two years now the Health Department of Muscogee County, Georgia (which includes the city of Columbus), has been battling flies as part of an intensive clean-up campaign. Nearly 23,000 buildings—dairies, food establishments, business houses and private homes—have been blanketed with DDT. Muscogee citizens proudly announce a 90% reduction in the county's fly population—at a cost of 30 cents per inhabitant. And Columbus doctors report a sharp decline in cases of diarrhea and dysentery among children.

Breeding Places Cleaned Up

Evansville, Indiana, also slaughtered flies by the million last summer. When the breeding places had been cleaned up and DDT spread in strategic spots, a flytrap was baited and set outside the door of the college cafeteria. In two days the trap yielded one lonely fly. "Ordinarily," points out Dr. E. A. King, Evansville's Health Officer, "that trap would have been buzzing with hundreds of flies after only a few hours." Tests made at city dumps and other popular fly gathering places showed similar results. "I do not hesitate to estimate that 999 out of every 1000 flies in Evansville were killed in the campaign," says Dr. King. "And there's no way of telling how many million were pre-destroyed through the sudden demise of their ancestors."

Things like that are happening in progressive communities all over the country. Whole states, notably Idaho and Iowa, are putting DDT to work against this age-old pest—and getting phenomenal results.

Iowa is launching its third annual "No Flies in Iowa" campaign. Last summer, encouraged by the almost total elimination of flies in towns where fly control was tested in 1946, more than 400 communities armed themselves with DDT, and 83% of the state's farmers did their part by flyproofing their cattle or dairy barns. Twenty-seven demonstration

centers were set up to train local committees in fly-killing techniques. Residents were bombarded with pamphlets telling them how and when to use DDT, and emphasizing that they should clean up round the house so as to give the poison spray its maximum effectiveness. "Using DDT without proper sanitation is like boxing with one hand behind your back," says Dr. Harold Gunderson, Iowa State Extension entomologist. Dr. Gunderson swears that in the Iowa towns which cooperated, stores and restaurants were completely free from flies throughout the summer, and homeowners reported that they never took the swatter off the hook. In Mason City, the caretaker of the municipal dump, for the first time in his career, was able to eat lunch out of doors without being pestered by flies. "The amazing thing about this program," says M. W. Lackore of the Ames, Iowa, Chamber of Commerce, "is that it really works."

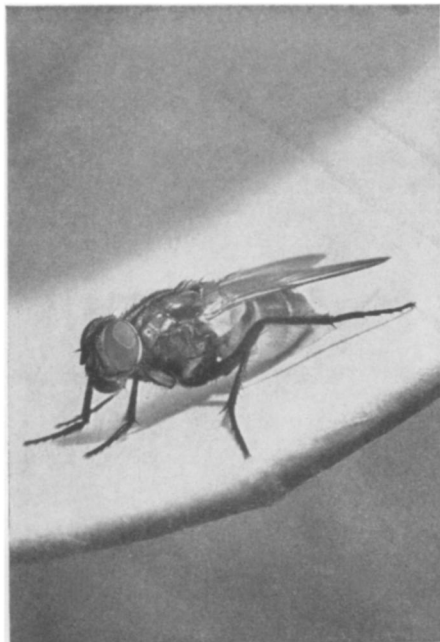
Not only does it work, but it is amazingly cheap. Mason City, with a population of 60,000, enjoyed a fly-free summer for about \$2500, raised by local citizens. Solicitors said that it was the easiest money they had ever tried to raise.

To city dwellers flies are a menace and a nuisance. But to farmers, their extermination means more beef, more milk, cleaner, healthier animals. Hornflies, those tiny insects which you can see by the thousands sucking the blood from the back of a cow, have been eating up the American farmer's profits at the rate of millions of dollars every year. When hornflies are bad, which is for 14 weeks in most parts of the country, beef cattle will not put on weight and dairy cows will not give their full quota of milk.

Cattle Sprayed with DDT

Spectacular results—checked by state agricultural experts—have been obtained by spraying cattle with DDT. Dairymen report increases in milk production up to 25%; treated herds gained 32% more weight than unprotected herds; cattle growers in Kansas got 50 pounds of extra beef per animal for every five cents' worth of DDT. Three applications of DDT during the summer will protect cattle for the season. Stockmen say: "DDT is so effective that cows don't need tails any more. Might as well use them for oxtail soup."

Last year more than half the cattle in Kansas and South Dakota and nearly



SPREADER OF FILTH AND PESTILENCE—Perched on the edge of a saucer, the fly carries filth to food, and is believed to spread such diseases as tuberculosis, cholera, dysentery, infantile diarrhea and typhoid, among others.

all the cattle in Oklahoma were sprayed with DDT—because it pays!

Dr. Ellsworth Fisher, University of Wisconsin entomologist who directed last year's dairy fly control operations, gives the 1000-odd "custom sprayers" in his state credit for making the program a success. Many of these operators are ex-GIs, others are experienced exterminators who have added DDT to a long list of insect-killing weapons.

Business of Killing Insects

In Princeton, Illinois, two former Air Force pilots, Robert Kirkpatrick and Donald Rickard, have built up a profitable business killing insects by land and by air. With a Navy-surplus plane they shower corn with DDT for protection against the corn borer; with a jeep and power sprayer they douse cattle and farm buildings with DDT for fly control. They charge \$40 for a season's spraying of animals and buildings on an average farm—one visit in June, another in August. "Many farmers were skeptical at first," Kirkpatrick says, "but took the gamble. Now they're enthusiastic. One day we sprayed a farm and its herd of 32 cows. The next day milk production went up ten gallons, and stayed up." Last year Kirkpatrick and Rickard had

about 90 customers for fly control, all of whom signed up for service again this spring. One of their biggest jobs was the spraying of the county fair grounds and its buildings, which they did so effectively that even the picnic area, strewn with sandwich crusts and watermelon rinds, was free from flies.

Three years ago George Hockenoyos, custom sprayer of Springfield, Illinois, added fly control to the many services of his Sentinel Pest Control Company. Hockenoyos sprays homes three times a year, charging about \$10 for each treatment. Last summer he sprayed the 25 buildings of a state institution. One time around took him four days, but when he got through there were "99.44% fewer flies." Hockenoyos is confident that some day flies will be a rare sight round all homes and barnyards. An old timer in pest control, he advises newcomers to work for a while with an experienced outfit before going out on their own. It isn't just a matter of killing flies, he points out. "You have to kill them in the right places. In a restaurant, for example, DDT should not be used near open food. Flies would walk through the poison, then die in the food. After a few dead flies in the soup," he says, "the restaurant has lost its business—and you've lost yours."

Caution Against DDT Poisoning

While harmless to people and to most animals in the weak dilutions prepared for these campaigns, DDT should be used with caution, for it is after all a poison. Promiscuous treatment of crops and fields may result in the poisoning of birds and honey bees, and upsets in the balance of nature. When spraying is done on the farm, drinking bowls and feed troughs should be covered, and DDT in oil solution should never be used on cattle, for it will penetrate the skin. And cats should never be sprayed with it, because of their cleanly habit of licking themselves.

Ever since flies were sent to plague the Pharaohs, we've been shooing, swatting and swearing at them. And they've been hopping around from filth to food, carrying some 20 diseases—including tuberculosis, cholera, dysentery, infantile diarrhea and typhoid. It takes years to gather final evidence, but present indications are that the incidence of many of these diseases will drop along with the fly population. Yet now there seems no doubt that with the combined weapons of DDT and modern sanitation we can make the fly a rare museum specimen.

There's no reason why your com-

munity cannot be made flyproof this summer. If you live on a farm, write to your county agent or to your agricultural experiment station for advice and further details. If you are a town or city dweller, get your local newspaper or service clubs to start a campaign, or call up your health commissioner and keep buzzing until he does something.

Science Service took a prominent part in the anti-fly campaign of 1947, through a series of illustrated articles written by Dr. Frank Thone, and is preparing to participate similarly in the 1948 drive. The foregoing article was prepared for the Science News Letter in cooperation with The Reader's Digest; it will appear in the June issue of that magazine.

Science News Letter, April 17, 1948

MEDICINE

New Chemical Improves Blood Test for Syphilis

► BLOOD tests for syphilis are becoming more reliable, thanks to a new testing chemical discovered by Dr. Mary C. Pangborn of the New York State Department of Health. Details of the chemical and its use were reported by Dr. Pangborn at the venereal disease symposium held in Washington under the auspices of the National Institute of Health.

When a blood test for syphilis is done on a patient with malaria or a vaccinated person, the report often is positive even when the person does not have syphilis. Such tests are called "false positives." They have long been a source of worry to doctors and patients.

Many of these false positive tests will be eliminated when the new testing chemical is used, it appears from results with it so far.

The chemical is named cardiolipin. It is a phosphorus containing fatty substance obtained from beef heart. For

SCIENCE SINCE 1500

By H. T. PLEDGE

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