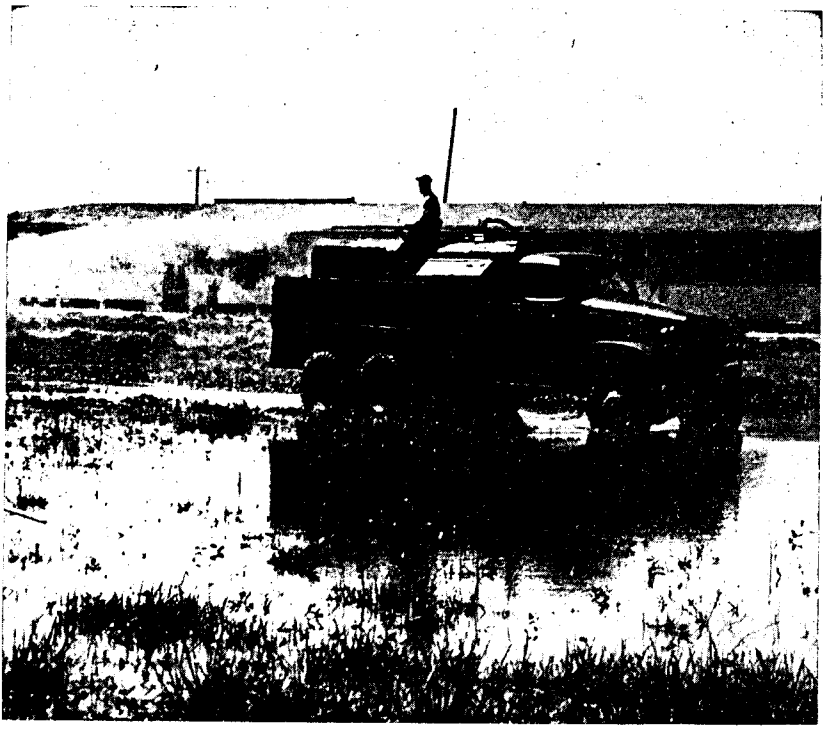

MOSQUITO CONTROL

and will deliver 35 gallons of liquid per minute with a normal speed of 150 strokes per minute. Thus, one-half hour to one hour is all that is required to discharge a complete tank of oil when the unit is in operation. The motor has four cylinders and will deliver 16-22 horsepower. The unit also contains a continuous pressure reel which holds the 200 feet of ½ inch rubber hose, along with an assortment of nozzles. When the unit is operating at a 400 pound pressure, a stream of oil can be sprayed for over 150 feet. The entire unit is mounted on sled runners and transported by means of 6-wheel drive Tandem truck.

DITCHING WITH DYNAMITE FOR MOSQUITO CONTROL

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Individuals and organizations whose duties involve the control of pestiferous and disease-inflicting mosquitoes are confronted with many problems in making new ditches and/or deepening, widening, and cleaning existing ditches. The Government has had to commandeer practically all new and used excavating equipment for use in military construction projects. The manpower situation is such that hand labor is almost unobtainable. It is highly probable that these two conditions will exist for some time after the war is over.

It has been proved time and again that dynamite, which is available in wartime, will do cheaper and faster work in digging open ditches in wet or marshy ground than can be done with labor, and picks, and shovels. Not only have landowners learned the economy and speed of dynamite for dig-

ging open ditches; the Government also has used it in military cantonment and airfield construction work. County engineers, drainage engineers, the United States Public Health Service, county health commissions, railroad companies, state and county highway departments, and contractors, have employed explosives successfully in ditching through marsh, swamp, and woodland.

In reporting on ditching work in Public Health Bulletin No. 104, Mr. W. D. Tiederman summarizes his experiences in ditching with dynamite as follows:

"1. It is possible to dig a ditch through land filled with roots and stumps, removing stumps at the same time the ditch is opened.

2. It is possible to open a ditch in ground that is too boggy to be shoveled.

3. There are no large spoil banks along the line of ditch, as the dirt is scattered broadcast.

4. A ditch of almost any size desired may be opened.

5. The work is done very quickly.

6. Little labor is required, which is a big item today.

7. The work is more agreeable to laborers, and they can be held much longer.

8. The cost is much less than handwork."

When a ditch is dug by hand or machine, the earth is piled up along the sides, forming spoil banks. These prevent the easy flow of water from the fields into the ditch, and the banks cover land which cannot be tilled. Dynamite, instead, scatters the earth on each side of the ditch, leaving no spoil banks.

A blasted ditch is usually two to three times as wide as it is deep and side slopes are one to one. The action of the explosive force is in a cone shape; when a series of charges is detonated for ditch blasting a V-shape ditch is expected. However, it is possible to blast a ditch of desired bottom width by placing the charges at certain depths.

Some people think it is neoessary to clean the ditch by machinery or hand after the blast. If the charge is of the correct size and is placed properly, in most instances, there is no extra work required after the blast. The few clods of earth that fall back into the ditch will soon be broken up and washed away by the flow of the water.

Blasting may be done with satisfactory results through ground so soft that there is no footing for horses and no support for wheels. It can be accomplished when the surface of the ground is under water.

The size of the charge and the method of blasting will vary with the moisture content of the soil. Dynamite has often finished ditches that were too wet and rough for a drag line and too small for a floating dredge.

REFERENCES TO LITERATURE ON MOSQUITOES AND THEIR CONTROL

H. H. STAGE

Bureau of Entomology and Plant Quarantine
Agricultural Research Administration
United States Department of Agriculture

Anonymous. 1943. Control of mosquitoes in Britain. Brit. Med. Jour. No. 4293: 482, 1 ref.

———— 1943. D. C. Fights malaria. Sci. News Letter 43: 349.

———— 1943. The work against yellow fever in Brazil. Amer. Med. Assoc. Jour. 121: 963.

Aitken, T. H. G. 1942. Contributions toward a knowledge of the insect fauna of Lower California. No. 6. Diptera: Culicidae. Calif. Acad. Sci. Proc. 24: 161-170.

Andrews, J. 1942. Malaria in Georgia in 1941. Ga. Malaria Bul. 5: 9-19, 7 tables, 4 figs.

Alameda County Mosquito Abatement District. 1943. Alameda County