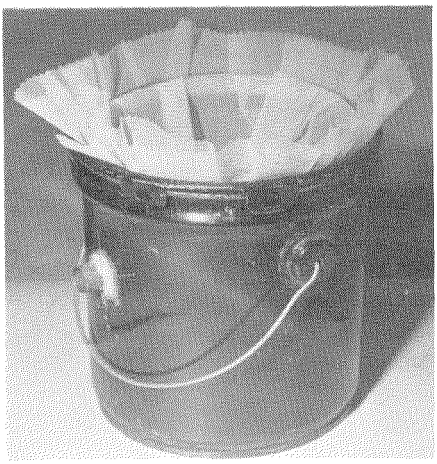

FIG. 1.—Mosquito larvae concentrator (T. D. Mulhern photograph).

One type of bucket and lid found to be satisfactory is available from the General Biological Supply House, Inc. (1963 catalog No. 310A801, Size A), but any plastic or rustproofed metal pail will do.—Don J. Womeldorf, Patricia A. Gillies and James R. Holten, California State Department of Public Health, Bureau of Vector Control.

ADAPTING THE THIOKOL SPRYTE TRACKED VECHICLE FOR LARVICIDING

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For many years the Monmouth County (New Jersey) Mosquito Extermination Commission was confronted with the increasing problem of controlling larval production on salt marshes altered by man's activities. Such changes as hydraulic fills, dry fills, and roadways intersecting existing drainage ditches were effected in order to develop marginal lands. The result, however, was a patch-work of small segments of marsh which could no longer be drained by conventional methods, and which were too large to larvicide by hand. Also, the softness of the ground excluded the use of wheeled vehicles, but did not warant the use of floating equipment. Obviously, something that could operate in conditions between these extremes was needed.

After much review and comparison of tracked vehicles that might be used in this work, it was decided to purchase a Thiokol Spryte. The decision was based on the performance of this machine on all types of work areas on which it was to be used, and upon the load space, and carrying capacity.

More detailed specification of the vehicle would be beyond the scope of this review inasmuch as how it was modified for larviciding is the main objective.

The first requirement was to fabricate larvicide tanks which could hold enough material to do an adequate area and not be so large so that the vehicle became cumbersome. Other tank requirements were: baffle-plates to prevent sloshing, an interconnecting pipe to equalize the load on either side of the vehicle, and clean-out ports and drains. The finished tanks are illustrated in the accompanying photograph (Fig. 1).

FIG. 1.—Thiokol Spryte with pump and tank, adapted for larviciding.

They are each of 44 gallons capacity and are easily removed so that the Spryte can be used for inspection or other purposes. For example, the cracks on hydraulic fills were eliminated in several locations during the winter by the Spryte pulling a conventional farming disk harrow.

The second requirement for the modification was to fabricate a system which applied the larvicide, and this was designed so that the entire operation could be performed by one man.

A Briggs and Stratton Model 6 BS four cycle motor was joined to a Sherwood gear pump (complete with pressure gauge, filter, and lanyard type shut-off valve). This assembly was shock-mounted on a plate which was affixed atop the right larvicide saddle tank (see photograph). Other small motor-pump combinations available in commercial models would be as satisfactory. However, the above were salvaged from worn-out equipment.

In order to mount the spraying head, a plate was bolted to the rear of the vehicle to which a 1" galvanized pipe elbow had been brazed (Fig. 2). To this is attached a 20" pipe nipple at the end of which is a boomless sprayer with a five orifice nozzle cluster. Another 13" nipple

FIG. 2.—Spraying head attached to rear of Thiokol Spryte.

leads upward from the elbow, and the hose from the pump is attached at this point. A hose is used rather than a fixed pipe system, so that other manually operated guns may be quickly attached in situations where spraying from the side of the vehicle is required. Since the photographs were taken, quick couples have replaced all fittings which are regularly switched from one operation to the other.

In operation, the vehicle is moved over the marsh, hydraulic fill, or other breeding area at a rate of five to ten miles per hour, and the single operator pulls the lanyard whenever larvicide is required. On salt marshes, this is a continuous swath of about 25–30 feet. However, where chain-pools are encountered, a short burst is applied to each spot. Since the larvicide contains a spreader, the swath width is, of course, much greater than the actual spray pattern.

The pump is operated at approximately 25 psi, and this exhausts the tanks in from 45–60 minutes of continuous operation.

The Spryte is transported to the work areas on a tilt-top trailer pulled by a 2-ton flat bed truck equipped with tanks for additional larvicide.

ELABORATION OF THE MOSQUITO-COLLECTING ASPIRATOR. Collecting adults of *Anopheles sergenti* with the aid of the regular sucking equipment, composed of a mouth-piece, rubber tube and a glass tube, in the caves of the Dead Sea area, our men suffered from inhaling dust and small particles from the limestone walls.

Therefore we modified this equipment by a simple mechanical sucking procedure. The modification consists of a system of two rubber bulbs instead of the mouthpiece—both connected with the rubber pipe in close but different places. One of the bulbs served only for sucking purposes and the second for blowing out the sucked mosquitoes into the retainer. Both bulbs are easily operated by one hand, as shown in photograph No. 1.—Z. Saliternik, Jerusalem, Israel.

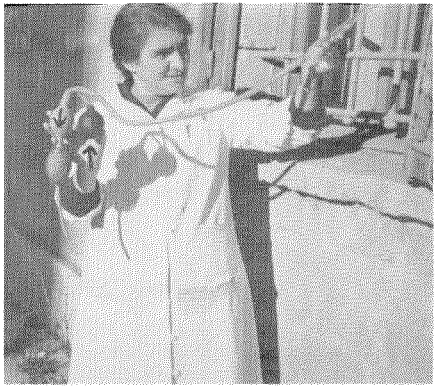

FIG. 1.—Mosquito-collecting apirator in use.