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OPERATIONAL AND SCIENTIFIC NOTES

GOOD DRAINAGE is one of the fundamentals of mosquito prevention. Thousands of miles of drainage ditches have been dug by the numerous mosquito control districts in this country and elsewhere. A lot of the ditching was done by hand and probably a lot more will be done that way. Power machinery and dynamite are widely used and have lightened the burden of the laborer. Another valuable aid is the light-weight servi-portable compressor with tools for breaking up clay and hardpan formations. This equipment can eliminate much of the pick, crowbar and mattock work so often required of labor.

The machine pictured here (fig. 1) can be wheeled out into swamps and marshes by two or three men. It has capacity to operate a 35 lb. clay spade, pavement breaker or rock drill. In clay and hardpan digging it does the work of two or three men.—R. L. Armstrong, Supt., E. Middlesex Mosquito Control Project, Cambridge, Mass.

FIGURE 1. Light weight compressor used to facilitate ditch digging.

THE SKEETER, organ of the Virginia Mosquito Control Association, recently put forward two thoughtful suggestions which may be of use to others. One was that, in addition to the usual idea of trying to control borrow pits by persuading their builders to make them evenly sloped for good drainage, it is also possible to make them *deeper* and thus at least create an easily-controlled lake where one might otherwise have a difficult-to-control, trash-filled swamp.

The other idea in The Skeeter was for a most useful piece of equipment. Instead of carrying 55-gallon drums of insecticide, the Norfolk City Commission has made up two long, rectangular tanks, welded together out of 10 gauge steel, with baffle plates which also act as interior braces, and with flanges by which they are bolted snugly inside the body of a truck so that they run lengthwise. With dimensions of 84 x 17 x 10 inches, each holds approximately 60 gallons. They are fitted with filler caps on top and at the outer end have a 1¼ inch, quick-action, tank-truck valve which practically does away with leaks and drips and enables the men to fill their cans in less than one quarter of the former time. The 10 inch width of the tanks allows plenty of room in the middle of the truck for equipment and for the feet of the men who use the tanks for seats.

WITH REGARD TO YOUR ARTICLE "AN APPLICATOR FOR ADDING CHEMICALS TO FLOWING WATER AT UNIFORM RATES" by Gahan, Labrecque and Bowen in your Volume 15/3 of September last, it seems to me that there is a much simpler procedure available based upon a common laboratory device.

The tap and escape nozzle for the insecticide can be continuous in one piece. Into the vent at the side of the drum, which should be uppermost, is introduced a rubber bung through which passes a length of glass tubing sufficient to reach to within a few inches of the bottom of the drum. As the contents of the drum then flow out through the tap and orifice, a partial vacuum is formed in the air space above the liquid which is relieved from time to time by bubbles of air passing down the glass dip tube against the liquid pressure.

So long as the air which is entering the drum has to bubble through the liquid in this manner, the effective pressure of liquid at the orifice remains constant and is proportional to the difference in height between the bottom of the glass dip tube and the escape orifice. The principle is illustrated in the attached sketch.

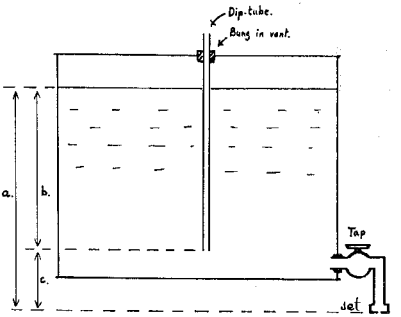

FIG. 1. a=actual height of liquid above jet.
b=head of liquid against which air must be drawn into air space.
c=effective head of liquid. This may be varied by raising or lowering the dip-tube in its bung.

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