

ANALYSIS OF A TIDAL DITCH AND ITS CROSSINGS

LEON DALENCOUR, Civil and Sanitary Engineer
Port-au-Prince, Haiti

The observation here reported was made in Aquin, Haiti, a town located 85 miles southwest of Port-au-Prince, the capital of Haiti.

In the low and flat ground of surrounding salt marshes earthen tidal ditches are used extensively.

Pipes are installed in the bottoms of ditches and covered with earth-fill to allow crossing.

These pipes are laid at varying depths, and no particular care has been taken concerning their level with reference to the outlet pipe "A" as shown in Fig. 1.

During an extreme low-tide period, when the highest water level reaches the line W.S. in Fig. 1, which coincides with the *bottom* level of pipe "A," ditch breeding occurred.

Silting took place between pipes A and C, and so on up ditch from every pipe that was higher than the ditch above it. See Fig. 1.

Breeding took place in pools thus formed by the high points in the ditch.

During an extreme high-tide period the

water surface may reach the line W.S. and above as shown in Fig. 3.

The silting which may occur rapidly in a rainy season can become as important as indicated by the black area of Fig. 3.

The ditch ceases to function as a result of the complete obstruction of the pipe, producing a prolific breeding basin above this point.

Pipe B is almost completely filled, causing the lowering of the salinity of the water between pipe B and the pass-over at D.

Maintenance expenses are high in such a ditch when the enormous volume of mud has to be removed by means of pails.

The following conclusion may be drawn:

1. The bottom line of all pipes laid in a tidal ditch should be level with the outlet.
2. A pipe of which the bottom level is higher than the bottom of the ditch above, or lower than the outlet, is a failure from the standpoint of eradicating mosquito breeding places.

