What has caused this profound change in our mosquito larvae is not a cataclysmic lowering of our topography to near sea level, but the accumulation of thousands of tons of salt stockpiled in our county in preparation for its application upon our thoroughfares during the winters. Other writers have recorded the discovery of larvae in pools which are situated near salt hay (brought in to stabilize newly-graded embankments). This situation is unique, however, in that the area found breeding in the Gillette section of Passaic Township has probably had an increased saline content in the breeding areas near a highway storage yard for some time before it was discovered to be a suitable spot for egg deposition by one of our fairly rare visiting *sollicitans*.

Our crews have paid particular attention to this area and expect to have this situation under control in the future. However, the control of *sollicitans*' breeding brings a new dimension to mosquito control in upland areas as this present situation is likely to be repeated in the vicinity of many of our salt sheds. In the future, as the salt actually spread upon our roads is washed into ditches and collects in low pockets, similar breeding sites may appear along many of our highways and arterial roads.

CULISETA INORNATA IN THE METROPOLITAN MOSQUITO CONTROL DISTRICT, MINNESOTA

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In the Metropolitan Mosquito Control District we have found some interesting entomological information about *Culiseta inornata* Williston. We wonder if other areas similar to ours might show a different picture.

Ten species of mosquitoes constitute 98+% of all mosquitoes taken in bite collections. *Cs. inornata* is never among this top ten list of species. Yet, we collect many specimens in both larval and light trap collections.

This information tells us that even though *Cs. inornata* is present, it does not cause a problem. The univoltine spring *Aedes* species and *Cs. inornata* start breeding in early April. Over the years we have found the first identifiable (3rd instar or larger) *Cs. inornata* larvae in the latter half of April. Prior to this time we treat sites with larvae without checking on the species. Once the *Cs. inornata* are big enough to identify, we check to be sure there are *Aedes* larvae in the site before applying insecticide. We do not waste time and insecticide treating sites with a pure culture of the non-problem *Cs. inornata*.

We consider this information to be valuable. Using it we can keep from using insecticide unwisely. *Cs. inornata* is a part of the food chain for beneficial forms of life. Unless it proves to be a vector of disease or becomes a major problem species, we can continue to let it go untreated.

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A COMPACT MAP-PANEL SYSTEM FOR LARGE ACREAGE[1]

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Maps are an integral part of a program for the surveillance of a mosquito problem and the solution of that problem by insecticide application or other means. For many years the New Jersey State Airspray Program has used United States Geologic Survey Maps (U. S. Geological Survey, Washington, D. C.) for the purposes of denoting areas which have been, or will be, aerially treated with insecticide. These maps are valuable in that they offer the amount of acreage concerned, the type of geologic environment, and the relationship of these areas to other physical features. Using such detailed maps, however, can be a problem. The scale of these maps (1:24,000) is such that more than one map may be necessary for an airspray area. This results in having to refer to perhaps 12 or 13 maps at a time in order to orient oneself to an airspray area and its surroundings. To gain a total perspective of the area, one must lay out the maps side by side on the floor, or other horizontal surface. The wide borders on the

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maps, however, interfere in viewing such a "composite" map.

Some mosquito control agencies have solved this problem by trimming off the borders of these maps and gluing adjoining maps together onto a large wallspace. This results in a large permanent composite geologic map of an area, and may cover the entire mosquito abatement district or county. However, when the district is large, wall space may not be sufficient. To solve the problem of dealing with maps covering approximately 2,660 square miles, we have designed and constructed the following compact map-panel system.

One wall of the office, approximately 14 ft across and 10 ft high, was cleared for use. Three 8-ft long and three 6-ft long double channel aluminum tracks were mounted parallel on the ceiling, close to the 14 ft wall. These tracks are available in building-supply stores and are referred to as sliding door hardware (OT-400 reversible) for 6 or 8 ft openings (MacKlanburg-Duncan, Oklahoma City, Oklahoma). Mounting with ⅛" diameter, #3005 toggle bolts gave extra strength to the track mount. This series of tracks provided 6 independent 14-ft long channels on which could be hung 4 ft × 8 ft panels. Satisfactory panel materials include Upson board, tempered masonite, exterior plywood, or any other material which may be drilled, glued, and will not warp. For hanging the panels, the sliding door hangers

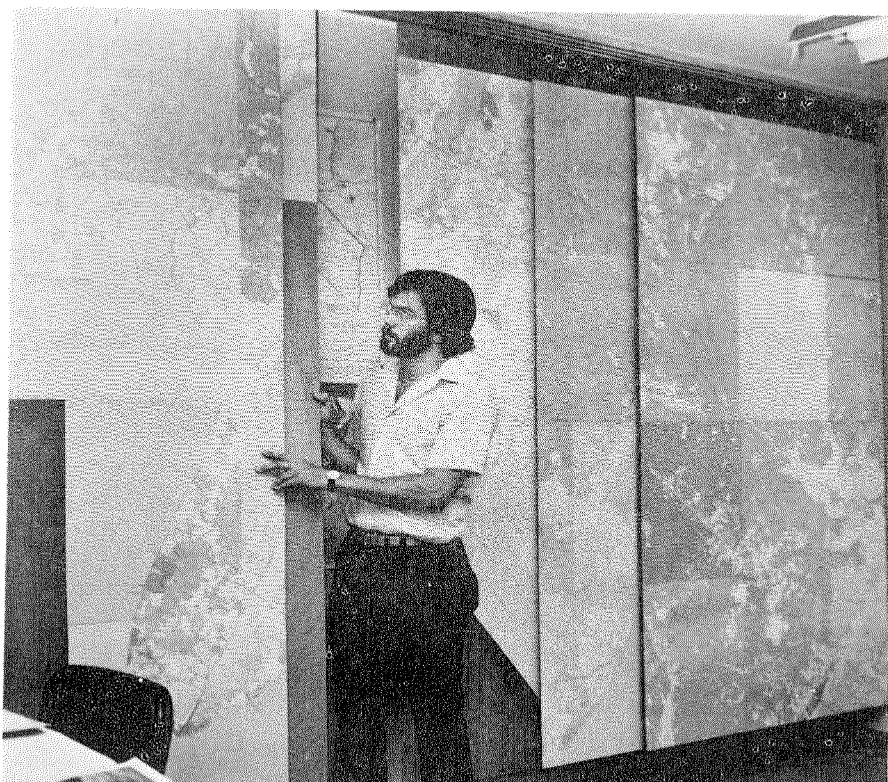

Fig. 1. Compact map-panel system.

(two types, offset and flat, part of the hardware package) were attached at the panel top. By pairing panels with offset and flat hangers in each track, a pair of panels can be moved to a position side by side and present an 8 ft × 8 ft "wall" surface. This pair can be rolled to the left or right for storage and other pairs of panels moved into position for view. The total complement of 6 panels per 3 tracks can be moved aside for storage, leaving the original wall space for other use.

For mounting the maps to the panels, the borders of the geologic survey maps were carefully trimmed. Pairs of panels were laid on a flat dust-free horizontal surface and the maps were oriented correctly on each pair of panels. Any map situated on the centerline, where 2 panels met, was cut accordingly. When the maps were aligned and appropriately marked as to location, they were removed and rubber cement smoothed onto the panel surface with a spatula or paint scraper. Only 1 map was glued at a time and smoothed with a wallpaper roller. Each panel was allowed to dry horizontally 24 hr before hanging.

This mapping system (Fig. 1) has been in use for approximately 6 months and allows for immediate viewing of areas as large as 985 square miles. Since the tracks we employ are 14 ft long, 2 panels can share the same channel, and an area of 1320 square miles on 3 panels can be moved into view. Additional panels can be added to serve as a bulletin board for aerial photographs, data and other information.

To protect the maps and yet allow temporary marking of areas, several clear coatings for the maps were tested. Liquid coatings such as urethane and liquid plastic darkened the maps, and marks from wax crayons and marking pens could not be completely removed by solvents. Therefore, we are employing clear acetate sheeting, which can be replaced as needed. In constructing the system, one should be selective in the quality of panels and avoid a panel with slight warping. However, if warping does occur, reinforcement with angled metal will minimize its effect. The mapping system as described cost $140 including tracks, hardware, panels, but not the maps. While it was designed for the airspray program, its reputation for ease of use and fine geographic detail has spread, and the map-panel system now is referred to by specialists in surveillance, water management, and pest management of insect species other than mosquitoes.

A SURVEY OF MOSQUITOES IN WOOD COUNTY, OHIO

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Vernard and Mead (1953) published an annotated list of Ohio mosquitoes which included a brief history of the mosquito work done in Ohio prior to that time. Parsons, et al (1972) updated this list to include 52 species of mosquitoes known to be present in Ohio. A survey was conducted from April 8 to October 30, 1976 to determine which species of mosquitoes are present in Wood County, Ohio.

Twenty-one species of mosquitoes were collected utilizing a variety of traps. New Jersey light traps, using a 60 watt light bulb as an attractant and 20% alcohol as a killing agent in the collecting jar, were used every night throughout the survey. CDC miniature light traps (Sudia and Chamberlain 1962) supplemented with dry ice (Newhouse et al. 1966) were used at least once a week. Their mobility enabled samples to be collected throughout the county. A modified version of the stable trap (Magoon 1935) also was used throughout the survey using a live rabbit as bait. All mosquitoes collected were brought back to the lab and identified to species. The numbers and species of mosquitoes collected in the various traps are presented in Table 1.

Four species constituted 89.8% of all mosquitoes collected. *Aedes vexans* was the most abundant, accounting for 55.5% of all mosquitoes collected. *Culex pipiens, Ae. stimulans* and