

REVIEWS AND ABSTRACTS

THE INACTIVATION OF DDT USED IN ANOPHELINE MOSQUITO LARVICIDES. By W. M. Upholt (U. S. P. H. S., Communicable Disease Center, Technical Development Division, Savannah, Ga.). Public Health Reports 62(9):302-309, 1 fig. 1947. (Abstract.)

In contrast to DDT used as a wall spray or as a larvicide for *Aedes aegypti* (L.), DDT used as an anopheline larvicide in dosages that are effective but reasonably safe to other aquatic life show little or no residual toxicity. Several factors may contribute to this. The two most important appear to be redistribution of the DDT due to wind and wave action, and precipitation of suspended DDT followed by adsorption of the DDT by some part of the bottom-mud complex. Adsorption is relatively slow on mud and appears to be on the organic components of the mud only, sandy soils with a minimum of organic material being rather poor adsorbents.—Author's Abstract.

THE COMPARATIVE RESIDUAL TOXICITY OF DDT TO *Anopheles quadrimaculatus* WHEN APPLIED ON DIFFERENT SURFACES. By J. M. Clapp, R. W. Fay, and S. W. Simmons (U. S. P. H. S., Communicable Disease Center, Technical Development Division, Savannah, Ga.). Public Health Reports 62(5):158-170. 1947. (Abstract.)

The comparative residual toxicity of DDT sprayed on different materials, the effects of the spray application on different surfaces, and the effect of surface on the final residue distribution were investigated. Test panels of 17 types of surfaces including fabrics, paints, varnishes, wallpaper, whitewash, plastics, linoleum, and mud were prepared to duplicate field conditions as accurately as possible. These panels fitted into a wooden framework to form an exposure chamber in which insectary-reared adult female *Anopheles quadrimaculatus* mosquitoes were exposed for 60 minutes to 200 mg. DDT per sq. ft. residues. A 5 per cent DDT-xylene emulsion and a pine plywood surface, adopted as comparison standards, gave the following 48 hr. mortalities: 1 month—95 per cent, 2 months—90 per cent, 3 months—70 per cent, and 6 months—60 per cent. Results from other surfaces compared to the standard were: equal for fabrics and wallpaper, $\frac{1}{2}$ to $\frac{3}{4}$ as good for varnishes, paints, fiberboard, and plastics, less than $\frac{1}{2}$ as good for whitewash, fresh paints, linoleum and mud. Mud showed poor results even with 600 mg. DDT per sq. ft. Surface discoloration was not encountered except on over-application to blue wallpaper and dark gloss enamels. Kerosene substituted for xylene as the DDT solvent was a remedy for this discoloration. Experiments demonstrated that some DDT was lost below the surface from spray penetration on absorbent materials. Salt

(NaCl) incorporated in whitewash increased the residual toxicity of subsequent DDT applications. Exposure to grease deposits lowered the toxicity of DDT residues.—R. W. Fay.

THE TECHNIQUES OF APPLICATION, AND THE CONTROL OF ROACHES AND BEDBUGS WITH DDT. By Robert L. Stenborg (U. S. P. H. S., Communicable Disease Center, Technical Development Division, Savannah, Ga.). Public Health Reports. (Abstract.)

Investigations were made using DDT for the control of the German roach, *Blattella germanica* (Linn.), the American roach, *Periplaneta americana* (Linn.), and the bedbug, *Cimex lectularius* (Linn.). Trapping methods for sampling roach infestations were unsatisfactory and populations were divided by premise inspections into 4 classes: (A) No roaches evident; (B) 1-5 roaches per room in evidence; (C) 6-50 roaches per room in evidence; (D) Roaches too numerous to count. Combinations of DDT-xylene emulsion sprays and DDT-pyrophyllite dusts were used in 5 general type treatments: (1) Over-all application with $2\frac{1}{2}$ per cent DDT spray, (2) over-all application with 5- and 10 per cent DDT spray, (3) 10 per cent DDT dust to obvious resting places, (4) combined use of 5 per cent DDT spray and 10 per cent DDT dust, and (5) multiple DDT spray applications. Private homes, food stores, restaurants, hotels, and hospitals were treated and details of each type treatment are given. Methods (1), (2) and (3) gave good initial mortality but later were not entirely satisfactory. Method (4) reduced class D infestations to class A or B within 1 week and to class A within 4 weeks. Method (5) gave good results but required more work.

DDT toxicity to bedbugs was tested by applications of various solvent sprays containing $2\frac{1}{2}$ to 35 per cent DDT to (1) mattress only, (2) mattress and springs only, (3) entire bedstead, (4) bedstead and adjacent walls, (5) walls and ceiling of room and all furnishings. All methods gave complete control of bedbugs during the 4 month study.—R. W. Fay.

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A NEW TECHNIQUE FOR SAMPLING THE DENSITY OF HOUSEFLY POPULATIONS. By H. I. Scudder (U. S. Public Health Service, Savannah, Ga.). Public Health Rpts. 62, 4 figs. 1947. (Abstract.)

Previous methods of sampling such mobile insects as houseflies (*Musca domestica*) have been unsatisfactory. A new technique is suggested involving the use of a "fly grill" which consists of narrow strips of wood tacked together to form an open structure with a great length of exposed edges. Flies are found to rest freely on such a surface. When placed conveniently to centers of congregation the numbers of flies resting thereon