

The seeder as purchased also threw some granules in a full circle, thereby striking the abdomen of the operator and trickling down into his boots.

Several modifications to correct these defects were made over a period of time and were tested by the field staff of the MMCD. The best of these designs was mass produced, mounted on 90 seeders and used during the 1965 mosquito control season. The device consists of a circular plate 12 inches in diameter, along the circumference of which is welded at right angles a metal strip 2 inches high by 12 inches where it joins the plate. The metal strip is centered to the rear and acts as a deflector to keep granules from striking the operator. A hole $5/16$ inches in diameter is drilled in the exact center of the circular plate and centered directly below the slinger plate shaft. The leading edge of the circular plate is $7/8$ inches ahead of the slinger plate and acts as a protective bumper or weed deflector. The plate is made of 20 gauge mild steel which is sufficiently heavy to withstand considerable rough use. The circular plate is attached to the bottom rear of the seeder by two $3/16$ by 1 inch bolts to the fan assembly bracket and to the front bottom of the seeder by one $3/16$ by $5-1/4$ inch adjustable bolt. (Fig. 1 and Fig. 2).

The plate with deflector will last many years

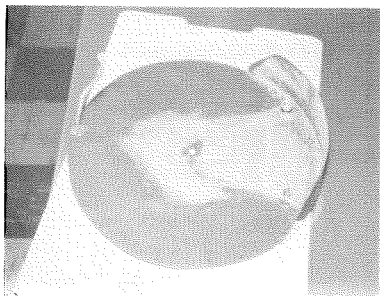


FIG. 1.—Dismounted plate showing attachment bolts.

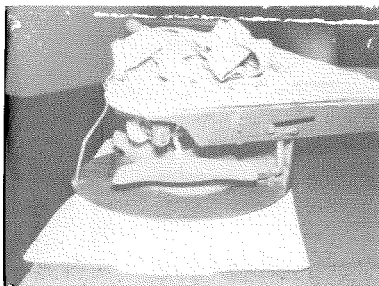


FIG. 2.—Plate attached and ready for use.

with little maintenance outside of a coat of non-fouling paint occasionally. Each plate cost \$2.25 to make and will outlast several seeders; it will prolong the life of a seeder 2 to 3 times longer than one not so equipped. It can be replaced from one seeder to another in less than 15 minutes. The device allows the entire seeder to be carried upright during transportation in a truck and protects gears and slinger plate from damage. It does not change the swath width or pattern of granules.

A GYNANDROMORPH OF *Culex pipiens quinquefasciatus* (SAY)

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Gynandromorphs have been reported in mosquitoes for a number of years. Lum (1960) reports 39 cases in *Aedes taeniorhynchus*. Rai and Craig (1963) report 100 cases in *Aedes aegypti*. Taylor, *et al.* (1966) report 20 gynandromorphs found in the genus *Culex* in the Tampa Bay area in a period between 1962 and 1964.

It is not known exactly how mosquito gynandromorphs occur. Gilchrist and Haldane (1947) suggest these possible reasons: somatic crossing over, improper migration of chromosomes at an early mitotic division, and double fertilization involving two sperm cells and either a binucleate egg or an egg and a polar body. Findings by Rai and Craig (1963) suggest that gynandromorphs in mosquitoes are produced by double fertilization.

The specimen described here came from a colony maintained in the genetics laboratory in the Department of Zoology, Louisiana State University. The colony was established in 1965 from locally collected material and has been in the laboratory for about one year.

The specimen (Fig. 1) clearly showed an anterior-posterior organization in which the head is that of a typical female, with two normal short palpi and female antennae, while the abdomen is that of a male, showing typical male genitalia.

The mosquito was given several opportunities to feed but it did not do so; nor did it attempt copulation when placed with several normal females. It lived for approximately one week, during which time it was photographed by Mr. Thomas C. Stewart of this department.

References

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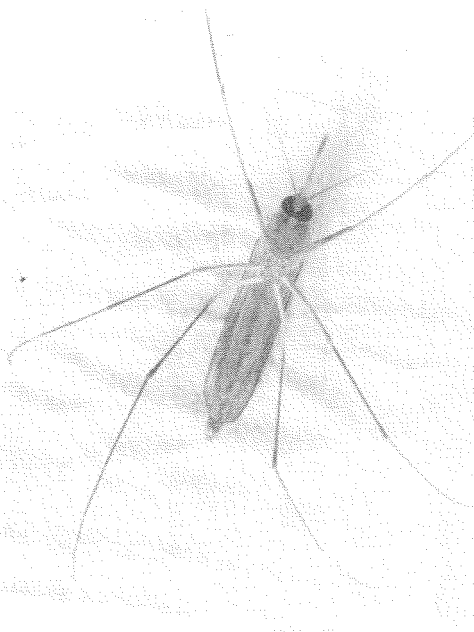


FIG. 1. (C. W. Seal)—Gynandromorph of *C. pipiens quinquefasciatus* (Say).

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GYNANDROMORPHISM IN *Culex* (LINNAEUS)
MOSQUITOES, TAMPA BAY AREA,
FLORIDA—1965¹

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Recent reports of gynandromorphism in mosquitoes were summarized by Taylor, Meadows,

and Branch in 1966, when 20 new cases of gynandromorphism in *Culex* (Linnaeus) mosquitoes were described. The majority of the 20 specimens had typical female antennae, palpi, and proboscises, and typical male genitalia. Since this paper was prepared, 10 additional gynandromorphs have been collected in the Tampa Bay area.

DISCUSSION. From January through December 1965, 296,179 mosquitoes were identified in the course of encephalitis studies by the Encephalitis Research Center, Tampa, Florida. Gynandromorphism was displayed in 10 specimens. Of 36 species, this abnormality was exhibited by three species, all belonging to the subgenus *Culex* (*Culex*): *Culex nigripalpus*, Theobald, 7 times; *Culex pipiens quinquefasciatus*, twice; and *Culex salinarius*, once (Table 1). These were geographically limited to three of the four counties included in the encephalitis study area: Hillsborough 4; Pinellas 5; Manatee 1; and Sarasota 0. No gynandromorphs were found among the other 33 species collected.

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