would be a more flexible collecting tool in certain instances. The device described herein has proved to be efficient because it utilizes a one-way flow of water. None of the collector's time is involved in straining, and he can concentrate on collecting.

The concentrator (Fig. 1) is made from a 1-

FIGURE 1.

gallon plastic bleach bottle. About 1 inch of the bottom has been cut off. The overflow port is placed so that the concentrator holds only about 1 quart of water before it begins to strain. The overflow port is covered by 35 mesh (No. 40) fine bronze screen. It is fastened to the concentrator by first stapling the edges to the bottle then drawing a hot soldering iron over the screen, melting the plastic sufficiently to bond.

The trash screen in the top is ⅛-inch mesh hardware cloth cut to fit snugly inside the concentrator. It rests on three 1¾-inch bolts. The screen handle is heavy gauge insulated wire.

In use, the water containing the larvae is poured from a dipper through the trash guard. Leaves and other pieces of large debris are caught on the guard. Any larvae remaining on the screen are washed through by subsequent dippings. When the water reaches the level of the overflow port, straining begins. Tests have shown that this size screen allows very few first instar larvae to escape. After sufficient larvae have been concentrated, they may be placed in a jar for transport by removing the trash guard and pouring out from the top.

In collecting from tree rot cavities, a one-half-inch (I.D.) plastic tube is used to siphon directly onto the trash guard, with the concentrator placed within a plastic bucket. Wood debris is held on the trash guard while the larvae pass through. Strained tree hole water caught in the bucket is returned to the cavity when collecting is completed in order to reduce the contamination of the tree hole by the addition of foreign water.

This concentrator offers several advantages in addition to field time saved. It is light in weight and easy to carry and handle, cheap and easy to construct. The plastic is hydrophobic and the smooth contour of the bottle reduces trapping of the larvae. The concentrator is not limited to the collection of larval mosquitoes, but has proved itself useful in the collection of *Daphnia* and other small aquatic organisms.

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PREDATION OF *Bradysia coprophila* (LINT.) (DIPTERA: SCIARIDAE) ON MOSQUITO LARVAE [1]

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The arthropod fauna associated with laboratory colonies of mosquitoes is extensive. Psocids, cockroaches, fruit flies, ants, mites and spiders are well known to those who rear mosquitoes. However, sciarid flies have not been reported as associated with mosquito colonies (Jenkins, 1964).

In the course of research on population genetics, we have developed cages for continuous rearing of laboratory populations of *Aedes aegypti*. These cages are a cubic yard in volume and contain a large dishpan with water for larval breeding. The pans are lined with paper towelling as an oviposition surface. The water level is raised frequently to bring about a fresh hatch of eggs and dog food pellets are added for larval food. An aquarium aerator is used to prevent scum formation in the water. The cages are kept at 80° F. and 80 percent R.H. Adults are fed with sugar pads and anesthetized mice. Continuous mosquito breeding has been maintained in these cages for more than three years.

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The fungus gnat, *Bradysia coprophila* (Lint.), was found in several population cages which had been in operation for eight months. Adults were observed flying about and resting on the paper towels in the pans. The moist paper towelling supported an abundant growth of fungus; eggs, larvae, and pupae of the gnats were found in the fungus. In addition, many larvae were in the water and some of these were observed to feed on small larvae of *Aedes aegypti*.

Mature larvae of the fungus gnat were about the size of second instar mosquito larvae. The large, heavily sclerotized head capsule and the strong jaws of the sciarids made them formidable predators on first and second instar mosquitoes, although the older instars were ignored. The slow-moving sciarids did not actively pursue their prey. They waited until a mosquito was close, then seized it, generally on the anterior abdominal segments, and shook the mosquito vigorously from side to side. When the mosquito stopped struggling, it would be ingested, with the air tube and then the head capsule being the last parts to go. The entire process required about two minutes.

Sciarid larvae usually feed on fungi; larvae of some species occasionally become pests in mushroom cellars. This is believed to be the first record of predation on mosquitoes for this family. The phenomenon may be limited to the highly specialized conditions of the laboratory population cage. However, it is significant to note that sciarid eggs are sometimes found along with eggs of *Aedes* when the latter are separated from soil samples by flotation.

The authors are indebted to Dr. Alan Stone of the U. S. Department of Agriculture for identification of the sciarid species.

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GYNANDROMORPH OF *Culex tarsalis* COQUILLETT FROM COLORADO

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The term "gynandromorph" is used to describe individual insects that display both male and female characters. In the literature there are descriptions of mosquito gynandromorphs for various species in the genera *Aedes, Culex, Culiseta,* and *Orthopodomyia* (Roth, 1948), and *Haemagogus* (Bates, 1954).

Two previously published references to gynandromorphs of *Culex tarsalis* Coq. have been noted by the writer. The first specimen, from California, was described by Keh in 1955; the second, from Arizona, was described in 1964 by Rigby and Blakeslee. In both of these gynandromorphs the genitalia are described as typical male and the antennae and palpi typical female.

The present gynandromorph of *C. tarsalis* was collected by Dr. Richard P. Dow on June 26, 1960, in a CO_2 trap that was hung at a height of 16 feet in the foliage of a cottonwood tree near the St. Vrain River at Platteville, Colorado. This specimen has typical male genitalia (fig. 1); left

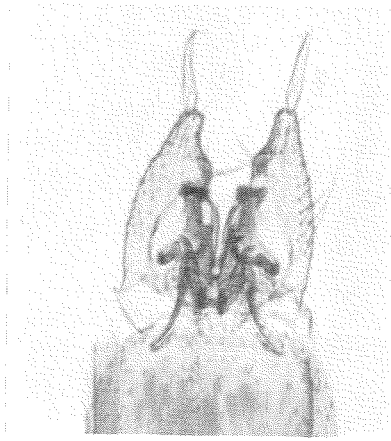

FIG. 1

FIG. 2

FIGS. 1–2.—Gynandromorph of *Culex tarsalis* Coquillett from Colorado.

palp, female, normal; right palp, male, abnormal, the first and second segments normal, last three segments deformed, compressed into a rather loose knob, all segments bearing long hairs (fig. 2); antennae, female, normal, only the torus and first 5 segments still intact; proboscis, female,

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