(Stonewort), water boatmen, or some other insect killing the larvae.

Checking a pond before spraying is the greatest thing an applicator can learn to do. For instance, the boatmen do not normally eat the 1st or 2nd instar larvae; they wait for the 3rd and 4th. This is why studies have to be made in the field as well as the laboratory.

If your job is done properly, you will find you will need less insecticide. Applicators seem to forget that 1 gal of mix may cover 1 acre, not ¼ acre.

Concentrate on using minnows wherever you can. We found killies were the best because they are tough and can live in either fresh or salt water and will survive the winter.

Remember a good qualified and ambitious director can save your municipality quite a good sum of money on insecticides alone. In fact, with the price of insecticides today it is possible to save enough to hire a part-time summer helper.

Another project a director can set up is an educational program as I have done with slides, placards and a little history of mosquitoes. This can be presented to school classes, P.T.A's, church groups and service clubs.

A NON-ATTRACTIVE SAMPLING DEVICE FOR THE COLLECTION OF ADULT MOSQUITOES

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Non-attractive suction-type sampling devices have been employed for the measurement of airborne insect vector populations (Johnson 1950, Taylor 1951, Bidlingmayer 1961, 1964, 1967, Graham 1969, Service 1969, 1974). In instances where multiple collections are to be made during a single night, trap cost becomes a limiting factor.

To compare attractive and non-attractive sampling methods for the collection of adult mosquitoes and for ecological studies of *Culiseta inornata* (Williston) in the Coachella Valley area of southern California, an easily constructed, relatively inexpensive (<$60.00) suction sampler was developed. (Fig. 1).

The main portion of the sampler consists of a cylinder 36 in. long and 21 inches in diameter, fabricated from 24 gauge galvanized sheet metal. The cylinder is supported by three ½ in. angle iron legs, whose length, hence sampler intake height can be modified to suit particular needs (in this case, intake height was 54 in. above ground level). A 20 in., 5-bladed fan and motor (McGraw-Edison Model 7327, 115V. 2.6 amps) pulls air through the sampler at the rate of 2600 ft^3/min. The fan motor is mounted to a 5 in. circular plate of 24 gauge sheet metal. For support of the mounting plate, three arms of 1 in. wide 24 gauge sheet metal radiate from it at 120° intervals, joining with the cylinder wall at a position coincident with attachment of the angle iron legs. The cylindrical nature of the sampler, plus the common junction of sampler legs and fan mounting plate support arms, gives the entire assembly more than sufficient integrity.

The collecting system is composed of 3 parts: 1) an adjustable sheet metal band ca 21 inches in diameter, 2) a nylon net catch bag, and 3) a plastic concentrator vial. The nylon catch bag, similar to an insect collecting net in configuration, is sewn together from 2 sections of 32 mesh nylon marquisette netting. A rod pocket, made of muslin, is sewn onto the wide end of the completed nylon bag, allowing it to be slipped over the sheet metal band. At the apex of the collecting bag, an elastic band constricts the small opening and allows for placement of a 40-dram plastic vial whose bottom has been replaced with 50 mesh brass screen.

During operation of the sampler, the metal band (with catch bag and vial attached) is placed around the upper end of the sampler. The nylon catch bag is then released into the sampler and it and the concentrator vial are held in place by virtue of both the bag's design and the strong airflow past it. At the end of a sampling period (fan operating), a snap-on lid is placed over the vial and the collected material removed.

In current studies, this trap has been effective in the collection of various species of *Aedes, Anopheles, Culex, Culiseta* and *Psorophora* mosquitoes. Daytime operation has also shown it capable of capturing and holding several species of strong flying muscoid Diptera.

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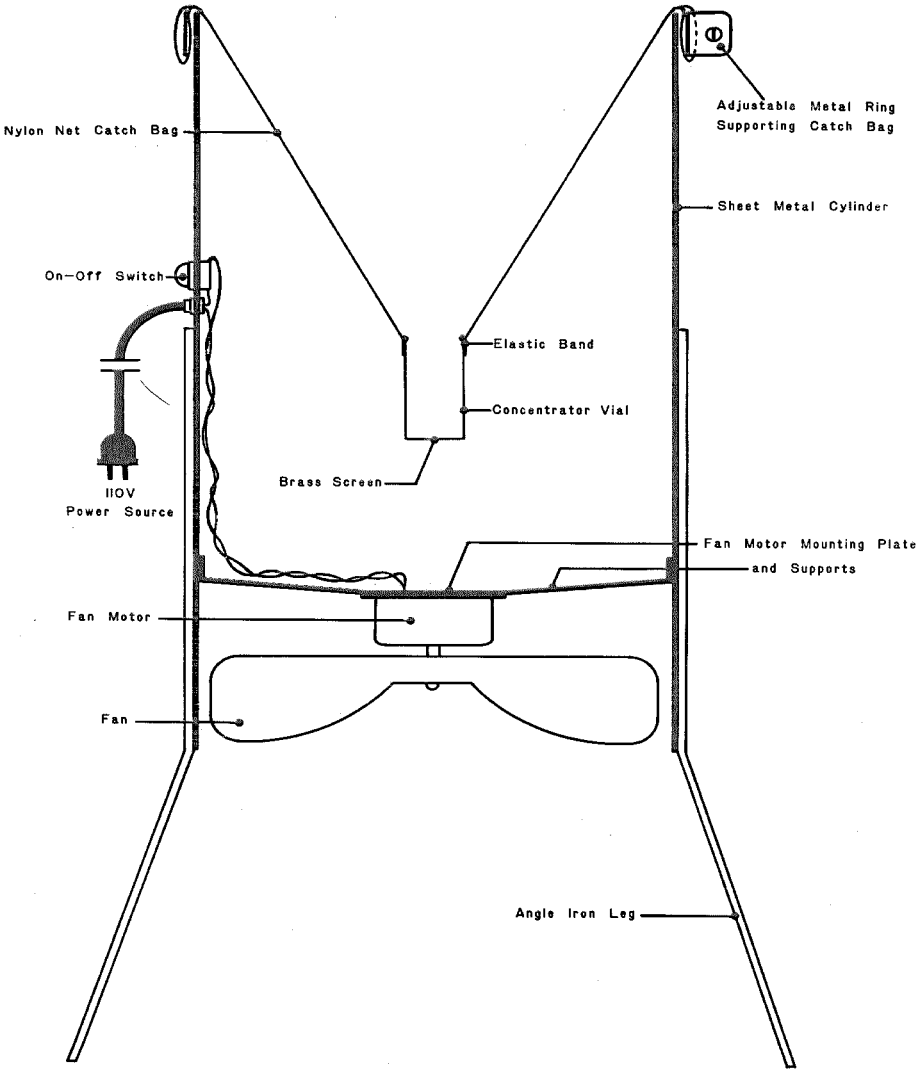

Fig. 1. Schematic of suction sampler.

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A NEW RECORD FOR *AEDES (NEOMELANICONION) LINEATOPENNIS* (LUDLOW) IN THE RYUKYU ISLANDS

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Aedes (Neomelaniconion) lineatopennis (Ludlow) was collected in Ishigaki-jima, Southern Ryukyu Islands. Eight specimens of this species were found in the large collection, numbering over 2,000 mosquitoes in light traps (6 watt fluorescent black lamp). The traps were set near paddy field of mountain side near Maeshi in the evening from July 21 to August 3, 1976. The remainder of the collection consisted of common species, *Culex tritaeniorhynchus* Giles, *Ae. vexans nipponii* (Theobald), *Mansonia uniformis* (Theobald) and *Mimomyia luzonensis* (Ludlow). The larvae of *lineatopennis* were also found in shallow fresh water grassy pools in fallow land of Hoshino Village, together with *Ae. vexans nipponii*.

The larva of *lineatopennis* is morphologically very similar to *Ae. vexans*. The most distinct character for separation from the latter is found in the branching of head seta 6-C: in *vexans* single or bifid but *lineatopennis* with 4–6 branches. The adult is easily identified by the broad lines of golden scales on each side of the mesonotum.

Although *lineatopennis* is widely distributed throughout the Oriental, North Australian and Ethiopian regions (Stone et al. 1959), it has apparently not been previously recorded from the Ryukyu Is. Ishigaki-jima is rather well examined for mosquitoes by many entomologists, such as Bohart (1959), Miyagi et al. (1969), Tanaka et al. (1975) and Kamimura (1976). The absence of this distinct mosquito in collections until the present time suggests that it is present in extremely local populations, easily overlooked, or else is a recent immigrant. Mattingly (1961) stated that *lineatopennis* appear to be capable of mass migration and this may account for the very wide distribution. Throughout the Southeast Asian countries this is one of the common mosquitoes known as the man and cattle biter. Lien (1969, unpublished) listed it from Korea, but as far as the authors know, no record exists for this species in Taiwan (Lien 1962).

The most recent checklist of the mosquitoes of Yaeyama Gunto, Southern Ryukyu Is. (Tanaka et al. 1975) includes 57 species. Now the 58th species, *Ae. lineatopennis* is added to the mosquito fauna of Yaeyama Gunto.

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