trations of these animals are not present for some miles around the park. However, deer and elk are common in the area. Suitable larval breeding sites in decaying organic materials were not in evidence.

The presence of sufficient numbers of stable flies in a subalpine life zone to cause extreme annoyance to humans is considered interesting enough to report here.

We thank Lily Dong, Public Health Biologist, Vector Control Section, California Department of Health, Berkeley, California for her opinion on the specific identity of the *Wohlfahrtia*.

References Cited

Scott, H. G. 1963. Myiasis: Epidemiological data on human cases. U.S. Department of Health, Education, and Welfare, Public Health Service, CDC, Atlanta, GA 1–14 pp.

A LIGHTWEIGHT, PORTABLE, AND INEXPENSIVE BAFFLE TRAP FOR COLLECTING *CULICOIDES VARIIPENNIS* (DIPTERA:CERATOPOGONIDAE)[1,2]

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While studying the biology of *Culicoides variipennis* Coquillett, the need arose for a lightweight, portable and inexpensive trap. Hienton (1974) reviewed a variety of insect traps and discussed the effectiveness of baffles. Frost (1957 and 1958) compared collections from light traps with and without baffles and utilized baffles for the Pennsylvania insect light trap. We designed a baffle trap similar to the Pennsylvania model but with lighter construction materials, low voltage incandescent lamps, and a battery system.

This baffle trap (Figure 1) consists of a funnel, 4 baffles, a light source, a power source, and a collecting bottle. The main body of the trap (i.e., baffles and funnel) is made of 0.5 mm gauge sheet aluminum. The funnel narrows from a 27 cm top diameter to a bottom diameter of 5 cm. Two rectangular pieces of aluminum, 27 × 30.5 cm, placed perpendicular to one another form the baffles. A hardware cloth disc (6 mm mesh) 23 cm in diameter, is inserted in the funnel to exclude large insects. The baffles fit above the hardware cloth into slots cut in the edge of the funnel and are secured to the funnel by small wires inserted through holes in the lower corners of the baffles. A 1-liter glass jar, half filled with 70% ethanol, serves as a collecting receptacle. The jar is held in place with a 50 cm strap of rubber tire inner tube which is 7.5 cm wide in the center and tapers to a 2.5 cm width at either end. The ends of the strap are riveted to the funnel about midway up its sides. Two 25 milliamp, 6 volt bulbs (Radio Shack Model No. 272–1140) or one 40 milliamp, 6 volt bulb (Sylvania Model No. 6-ESB) can be used as the light source for the trap. A 5 cm diameter hole in the upper half of the baffles holds the light source. The bulb(s) are powered by four D-batteries which are taped together and connected in series. A rectangular cutout, 7 × 5 cm, in the top of the baffles accommodates this 6 volt power pack. The bulb and battery leads are connected with micro alligator clips (6.25 mm jaw opening) and the bulb(s) are positioned in the 5 cm hole in the baffles. Each battery pack could be used for a maximum of 7 nights, 12 hr/night, if recharged on alternate nights.

Forty traps were constructed by one person at a rate of one trap/hour. These traps were used for 1,210 trap nights (1 trap night is equivalent to 1 trap operated for 1 night) during the summer of 1977 in northeastern Colorado. Each trap was suspended from the horizontal arm of a 2 m metal fence post by wires connected to the upper corners of the baffles. the traps were CO_2-baited with 1.2 kg of dry ice/trap for 694 trap nights and unbaited for 516. The dry ice was wrapped in paper bags and placed on top of the baffles. Insects striking the baffles did not recover from impact, fell through the funnel, and were killed in the ethanol. A total of 114,073 *C.*

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[1] The opinions and assertions contained herein are the private ones of the authors and are not to be construed as views, either official or unofficial, of the USAF.

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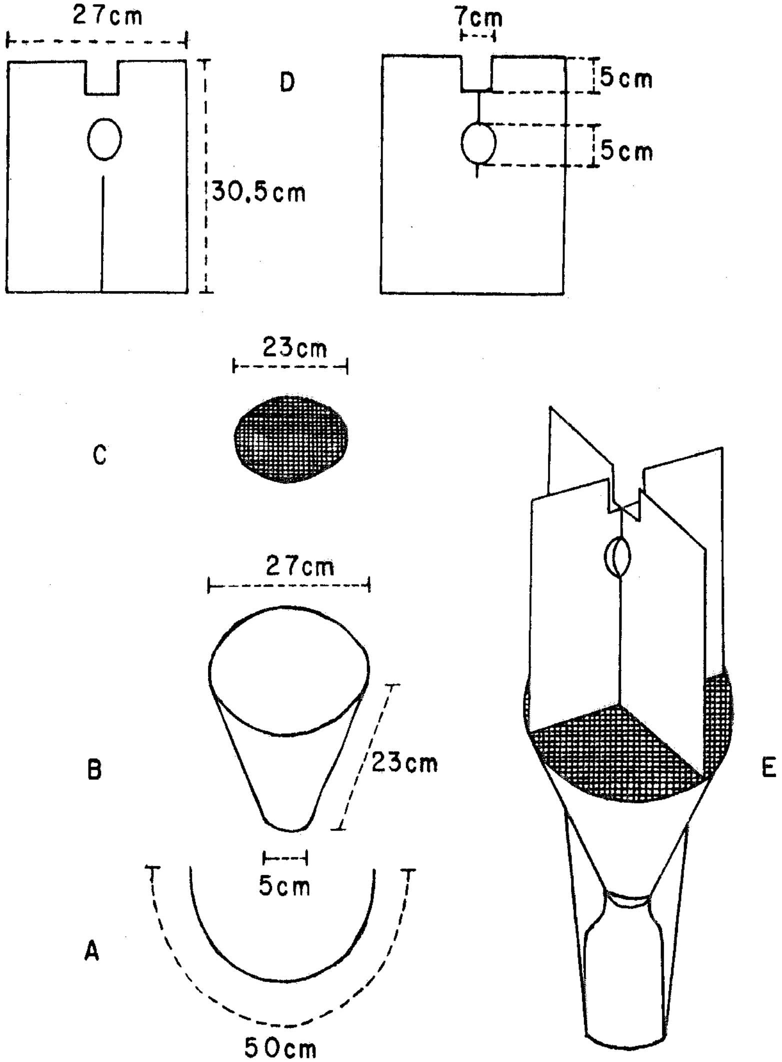

Fig. 1. A baffle trap presented in individual parts (A through D); and assembled. A. rubber strap; B. funnel; C. hardware cloth insert; D. baffles; E. assembled trap less electrical portion.

variipennis was collected, of which 97.8% was female. The number of individuals collected/trap night increased from 12.0 to 155.5 when the traps were CO_2-baited.

This baffle trap is portable and less expensive than insect traps currently on the market. A complete trap weighs approximately 1.62 kg and costs less than $4.00 (U.S.) for materials. The traps can be easily dismantled, the baffles stacked and the cones nested, for storage or transport. A cover can be placed over the baffles to protect the trap and catch from sudden downpours.

References Cited

Frost, S. W. 1957. The Pennsylvania insect light trap. J. Econ. Entomol. 50:287–292.

Frost, S. W. 1958. Insects captured in light traps with and without baffles. Can. Entomol. 90:566–567.

Hienton, T. E. 1974. Summary of investigations of electric light traps. U.S.D.A. Tech. Bull. 1498. 136 pp.

MOSQUITO PATHOGENS FROM MOUNTED COLLECTION OF THAI MOSQUITO LARVAE[1]

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Mounted mosquito larvae held in personal and laboratory taxonomic collections are potential sources of information on the occurrence and distribution of certain mosquito pathogens. While viruses, bacteria and most internal protozoans probably could not be detected in wholemounted larvae, *Coelomomyces* (fungi) and larger nematode pathogens are easily seen within larval specimens that have been cleared and mounted on microscope slides. Since collection site data for taxonomic collections often are of high quality, it should be possible to return to the site or vicinity of collection to search for infected material.

Recently, part of the collection of Thai mosquito larvae at the Department of Entomology, US Army Medical Component, Armed Forces Research Institute for Medical Science (AFRIMS) (formerly SEATO Medical Laboratory), Bangkok, Thailand, was screened in search of mosquito pathogens. These larvae had been mounted in Canada balsam mounting medium, with the posterior few segments of the specimen partially severed and laid to one side. The specimens were examined at 100X magnification. Although sporangia of *Coelomomyces* shrink when dehydrated and mounted in Canada balsam, measurements were made with a calibrated eyepiece micrometer at 1000X magnification. Because of shrinkage, the material was not suitable for species identification or description. Map coordinates of collection sites and detailed collection site data are available, but are not included here. The following host pathogen associations were found. (Where dimensions are given, they represent the mean of n = 30. Standard deviations are also given.)

1. Nematode—An apparent mermithid nematode was found coiled longitudinally in the abdomen and posterior thorax of *Anopheles nivipes* collected in a paddy field near Ban Saraphi, Nakhon Ratchasima, Thailand.
2. *Coelomomyces* sp. in *An. aconitus*. Sporangia 48.11 μm (sd 3.21) × 23.10 μm (sd 2.89). Host collected in rock pool near Ban Mae Noi, A. Chom Tong, Chiang Mai, Thailand.
3. *Coelomomyces* sp. in *An. bengalensis*. Sporangia 60.30 μm (sd 4.52) × 28.93 μm (sd 2.07). Host collected in stream margin near Ban Wung Mut, Prachinburi, Thailand.
4. *Coelomomyces* sp. in *An. nivipes*. Sporangia 51.96 μm (sd 2.69) × 30.22 μm (sd 2.05). Host collected in paddy field near Ban Pan Nua, Lampang, Thailand.
5. *Coelomomyces* sp. (no. 1) in *An. vagus*. Sporangia 30.79 μm (sd 1.81) × 17.77 μm (sd 1.28). Host collected in grassy pool near Chiang Mai, Thailand.
6. *Coelomomyces* sp. (no. 2) in *An. vagus*. Sporangia 46.58 μm (sd 3.22) × 21.82 μm (sd 2.32). Host collected in grassy pool near Chiang Mai, Thailand.
7. *Coelomomyces* sp. (no. 1) in *Aedes albopictus*. Sporangia 38.60 μm (sd 1.90) × 19.93 μm (sd 1.16). Host collected in bamboo cup at Ban Nong Plong Khong and Ban La Wa, Kanchanaburi, Thailand.
8. *Coelomomyces* sp. (no. 2) in *Ae. albopictus*. Sporangia 48.86 μm (sd 2.75) × 22.16 μm (sd

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