BATTERY-OPERATED LIGHT TRAP, AN IMPROVED MODEL

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In an earlier note (Nelson & Chamberlain, 1955) a miniature New Jersey-type light trap operated on dry cell batteries was described. This model had proved useful in making live mosquito catches for virus isolation studies, and yielded valuable collections from remote areas which conld not otherwise have been sampled.

Unfortunately the construction of this trap was complicated, with numerous screws and bolts making dismounting dif cult. The rigid catching cage was bull and fragile. Furthermore, slight chang subsequently made in the manufacturi specifications of the selected motor reduc its efficiency for light trap application.

The present model (Figure 1 and Fi ure 2) is demountable for easy transpo weighs only 1¾ lbs. and has a collapsib catching bag. The large overhang of t

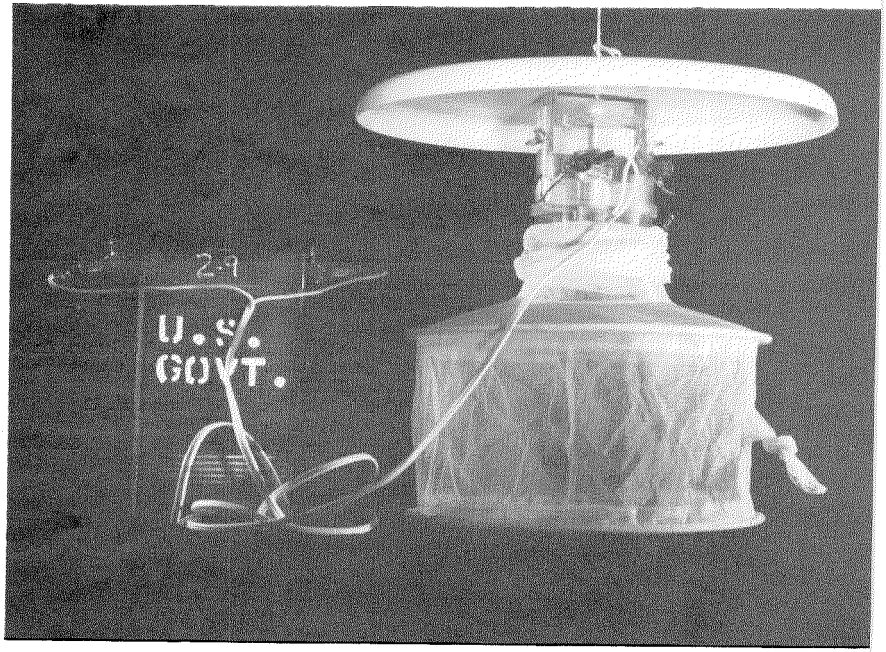

FIG. 1.—CDC Miniature light trap, assembled

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lid protects the operating mechanism ev in heaviest rainstorms.

The major changes over the previo model are the detachable flat-topped l miniature ball-bearing motor and dural

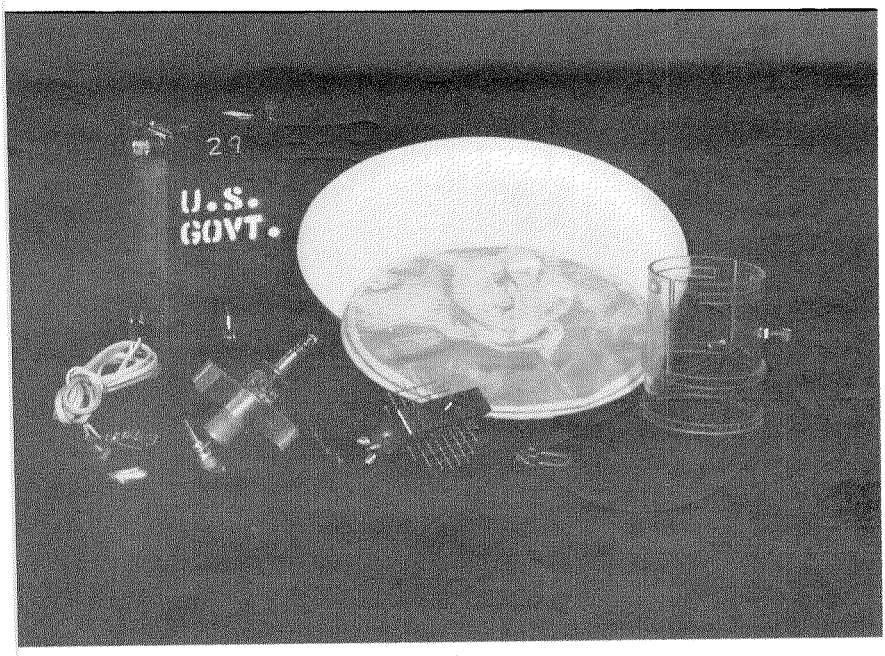
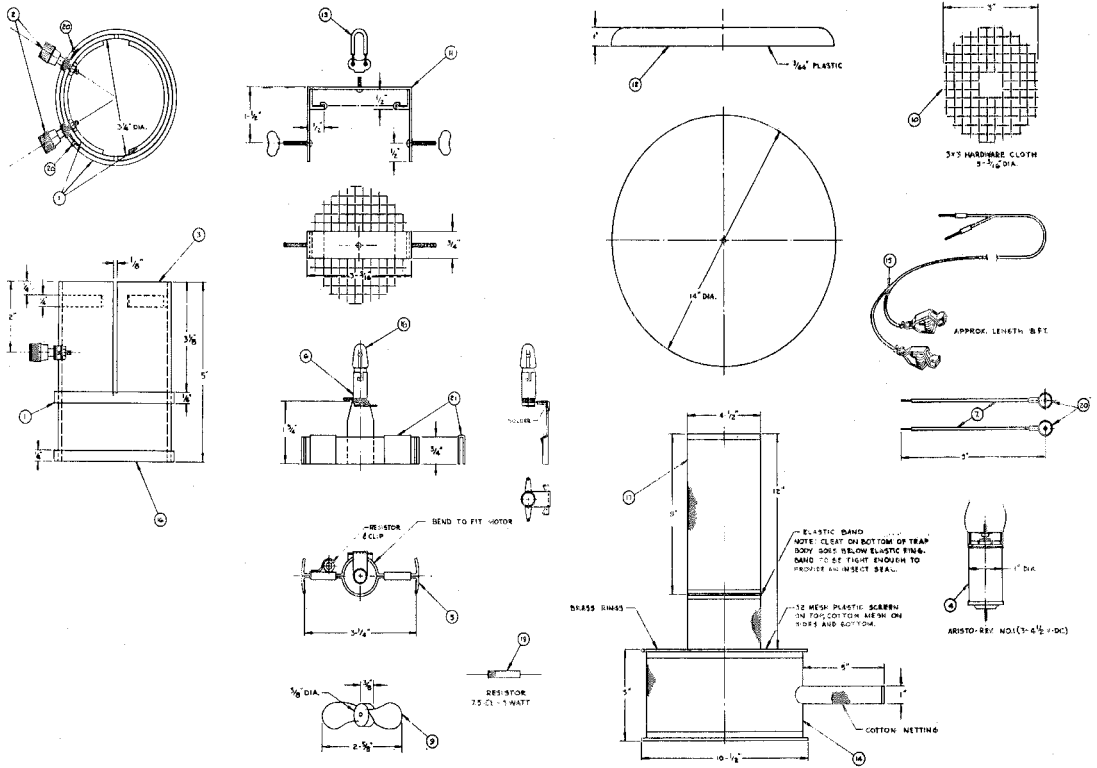


FIG. 2.—CDC Miniature light trap, dismantled

ht bulb drawing only 0.15 amperes each, nplified motor-mounting bracket, and eration on 4 volts d.c. A 7.5 ohm re- tor in series in the circuit permits use of ordinary 6-volt battery. The trap can operated on any 6-volt d.c. source, but e use of a 30 amp-hour motorcycle bat- y weighing only about 10 lbs. will give to 5 nights operation without recharg- g. The motor will give about 15 to 25 ghts of service before wearing out. An ing with light machine oil improves eration.

The present model has been field-tested one year in a south Alabama virus dy, and for eight months on the Big press Seminole Reservation, in south rida. Catches ranged from one-fourth equal of those of New Jersey light traps the same areas using 15-watt bulbs, with ilar species composition. However, a considerably higher proportion of mosquitoes in proportion to "trash" insects was taken in the miniature traps. Cypress and custard-apple swamp sites in the Florida Everglades in summer generally yielded 300–1000 mosquitoes per night, comprising a number of different species. More open areas frequently yielded very large numbers of one or two species. In one instance, 25,000 *Psorophora confinnis* were collected in a single miniature trap in one night. The trap, tested by others, has also been used with success in collecting *Culicoides* and *Phlebotomus*.

The body of the trap (3) (Figure 2 and Figure 3) is a piece of 3¼" Plexiglas tubing. A slot on each side permits insertion of the motor support bracket (5) holding the motor (4). The hood support bracket (11) also fits into these slots and is held fast by two wing nuts. The lid (12) is



SCALE: HALF SIZE

CDC MINIATURE LIGHT TRAP

DETAILED PARTS

22. BATTERY, 9 VOLT (NOT SHOWN)
21. MOTOR BRACKET CLIP
20. END CAP TERMINALS "SNAP ON"
19. RESISTOR, 7.5 Ω - 5 WATT
18. BULB, RADIO PANEL NO.1490
17. COTTON MESH SLEEVE
16. PLEXIGLASS CLEAT
15. WIRE TO BATTERY
14. HOLDING CAGE
13. HOOD RING
12. HOOD (OPAQUE PLASTIC)
11. HOOD SUPPORT BRACKET
10. GUARD (LARGE INSECT)
9. FAN BLADE
8. SOLDER NOS 4 & 7 (19 TO NO. 6
7. LEAD-IN-WIRE
6. RADIO FUSE - DUD BRACKET ASSY.
5. MOTOR SUPPORT BRACKET
4. MOTOR, CDC
3. PLEXIGLASS BODY OF TRAP
2. TERMINALS FOR BATTERY CONNECTION
1. SUPPORTING PLEXIGLASS RING

NOTES:

held in place by the hood ring wing nut (*13*). Color-coded binding posts (*2*) and "snap-on" terminals (*20*) permit easy connection of leads from battery and motor assembly. An elastic band in the neck of the catching bag permits attachment over the cleat (*16*) on the bottom lip of the trap body.

The motor support bracket is made of 22- or 23-gauge sheet metal and is formed to fit the motor and conform to the circumference of the trap body. On one side, a tip is soldered over the two halves of the motor bracket and is also bent to hold the resistor (*19*). On the other side, a J-shaped clip (*21*), unsoldered, is slipped over the bracket halves like a clothespin to hold the motor tightly in place. The bulb bracket assembly (*6*) is soldered into position on the side of the motor bracket so that the light bulb is centered over the motor. The fan blade (*9*) is made from a piece of solid Plexiglas rod as hub, which has been slotted to receive two blades of 1/32" Plexiglas and drilled to fit the motor shaft snugly.

The brushes of the motor are held in place by slide-on brass clips. When motors are worn, they can be replaced without resoldering by sliding off these clips and placing them over the brushes of the new motor.

Color coding of wires, terminals and battery connectors will greatly aid in correctly connecting the trap to the battery, since the motor is of the reversible type and reversed connections will cause the fan to blow the wrong way.

Most of the parts can be obtained from a local radio supply house or from a plastics distributor. The Aristo-Rev No. 1 motor[2] is available from local hobby shops. A mimeographed list of parts and suppliers is available from the authors upon request. The total cost of materials used in making a trap, exclusive of batteries and labor, is approximately $10.00.

Literature Cited

NELSON, D. B. and CHAMBERLAIN, R. W. 1955. A light trap and mechanical aspirator operating on dry cell batteries. Mosquito News 15:1, 0–0.

[2] NOTE: Trade names are used as a means of identifying the product and their use does not constitute endorsement by the Public Health Service.

IMPORTANT NOTICE

MEMBERSHIP DUES WILL BE $8.00 FOR 1963. SUBSCRIPTIONS TO *MOSQUITO NEWS* WILL ALSO BE RAISED TO $8.00 STARTING JANUARY 1, 1963

Supplying four issues of *Mosquito News* each year since 1949 for $5.00 has been an outstanding accomplishment of the Association. Only dedicated effort by the membership made this possible but the continued pressure of rising costs and increased time even to prepare and mail the Journal finally dictated that a change was inevitable. The present rates could be continued by cutting back on the content of *Mosquito News*, however this retreat evaporated as it was voiced. By unanimous vote of the members attending the 1962 annual business meeting, approval was given to advancing the dues the still very nominal sum of $8.00.

Along with the change in membership dues and *Mosquito News* subscriptions to $8.00 annually, other changes starting January 1, 1963 will be; Life Membership, $150.00; single copies of *Mosquito News* $2.25 and *Mosquito News* reprints 50 percent above the present schedule. Life Membership payments received before December 31, 1962 will be honored at the present figure of $100.00.