

## **An Alternate Method for Collecting Nocturnal Insects in Tree-Less Habitats**

Author: Grenis, Kylee

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## AN ALTERNATE METHOD FOR COLLECTING NOCTURNAL INSECTS IN TREE-LESS HABITATS

**Additional key words:** black light, prairie

Black light collecting sheet set ups are considered a standard technique for collecting nocturnal insects and are used by researchers and amateur collectors alike. Many guides suggest using a 15 watt ultraviolet light with a sheet for insects to rest upon (Covell 2005, Powell & Opler 2009). In forested habitats, sheets can be easily be hung by tying a rope between two trees, draping the sheet over the rope, and securing it with clothespins. However, this technique for hanging a sheet is not feasible when collecting in habitats without tall, sturdy vegetation upon which to tie a sheet using the rope and clothespin method. Commercial pop-up sheets are available for collecting in flat areas, but they are expensive and can deplete limited funds unnecessarily. I have devised a new method for constructing a low-cost frame on which to hang a twin sheet; the frame can be constructed with materials from any local hardware store for less than \$30.

The frame consists of a total of 9.1 m of 1.9 cm ( $\frac{3}{4}$  inch) polyvinyl chloride (PVC) pipe (measurement also given in English units in parentheses as this is how PVC pipe is labeled for commercial sale in the United

States). The PVC pipe needs to be cut into twelve pieces and trimmed to the measurements given in Table 1. I have determined that a chop saw is the easiest method for cutting the PVC pipe, but a hand saw or PVC pipe cutter will work as well. Additional materials that are necessary are: one straight PVC pipe connector, two 90-degree PVC pipe connectors, six 'T' shape PVC pipe connectors, and a fitted sheet for a twin bed. Tent stakes may also be purchased to anchor the frame to the ground if collection takes place in a windy environment.

To assemble the frame, connect the A and B PVC pipe pieces to form the façade of the frame (Fig. 1). The C and D PVC pipe pieces form the rear support for the façade and attach to the top of the frame at a  $\sim 25^\circ$  angle to the plane of the façade (Fig. 2). After assembling the frame, a fitted twin sheet can be slipped over the frame and the tent stakes can be used to anchor the frame to the ground. The black light battery can also be used to weigh the frame down by resting it on piece B4. When ready to begin collecting, simply drape the black light over the top of the frame (Fig. 3).

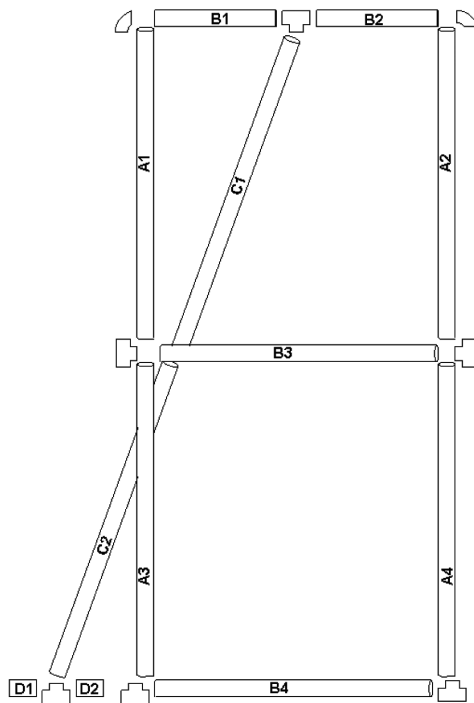


FIG. 1. Frame Assembly from front view.

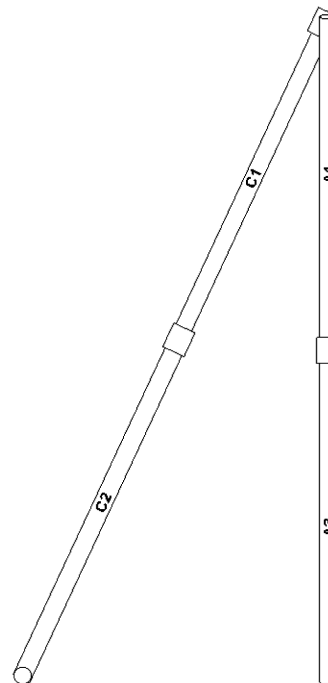


FIG. 2. Frame Assembly from side view.

TABLE 1. Lengths of PVC pipe necessary to make a frame that will be sized to fit a fitted twin sheet.

Poles	Length (cm)
A1, A2, A3, A4	89
B1, B2	49
B3, B4	104
C1, C2	111
D1, D2	13

There are several advantages to this frame over the commercial versions that are available. First, it is made entirely of pieces that can be found in any local hardware store. Second, the entire cost of the frame is less than \$30 and thus is an affordable option for collectors of more limited means (e.g. graduate students and amateur collectors). Finally, the frame, as I have designed it, is light and weighs about four pounds. Thus, when disassembled, the entire frame can be carried in a large mesh laundry sack and is easy to transport over rough terrain and long distances.

I would like to thank Jenny McCarty and Andrew Haertzen for their help in constructing the prototype versions of this frame. I would also like to thank



FIG. 3. The author using one of the frame assemblies to collect Lepidoptera in Colorado.

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KYLEE GRENIS, *University of Denver, Department of Biological Sciences, Mudd Hall, Room 309, 2101 E. Wesley Ave., Denver, CO 80208; email: kgrenis@du.edu*

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