

NOTES ON THE USE OF CERTAIN TYPES OF KILLING
BOTTLES IN INSECT STUDYRoy W. Jones, *Edmond, Oklahoma*

For several years the writer has found occasion to experiment with different types of insect-killing bottles. Two of these bottles have been found to have certain distinct advantages. Neither idea was original, but since they are not in common use their description seems to be justified.

The first was suggested by H. H. Ross of the Illinois State Natural History Survey. It is a modification of the ordinary cyanide bottle with the cyanide in the cork instead of under a layer of sawdust and plaster of paris. The bottles used are usually wide-mouthed, with large corks fitted tightly. A cavity about 1 in. in depth and 1 in. in diameter is hollowed out in the center of the cork. A layer of cyanide is placed in this cavity and the hole is plugged with cotton. The cyanide can be activated by a few drops of water on the cotton, but this is not necessary and has certain disadvantages. This type of bottle has the advantage of enabling one to renew the killing power by merely adding more cyanide and replugging with fresh cotton. One can thus always have at hand an active and efficient killing vial. The principal objections are: the cyanide must be renewed more frequently; corks of the proper size are sometimes difficult to obtain and must eventually be replaced; there may be some increase of the danger in its use. Smaller vials were found to be useful although they were short lived.

The second type of killing vial was suggested to the author several years ago by L. O. Nolf of the University of Iowa.** The basic principle is the power of absorption shown by certain materials for other substances such as rubber for chloroform, gasoline, benzene, etc. Almost any type of absorbing medium and volatile killing agent may be used. The most satisfactory assembly is as follows: Rubber bands are chopped up fine and a layer of these rubber pieces about $\frac{1}{4}$ in. deep is placed in the bottom of an 80-mm shell vial. After adding enough chloroform to cover the layer of rubber, the vial is corked and allowed to stand a few hours. Most of the chloroform will be absorbed by the rubber and the excess is poured off. A layer of cork about $\frac{1}{2}$ in. thick is then cut from a stopper of a size to fit the vial and is pushed down on the rubber mass. The vial is securely corked and is ready for use. This type of killing vial has the advantage of being rapidly adapted to a small tube. It can be carried easily in a pocket or hand bag and is ready for any insect that happens along. The killing power is replenished quickly by the addition of a few drops of the killing agent. There is no danger to small children and pets as in the case of cyanide bottles. Larger size bottles can be made by using layers of rubber from an old inner tube as the absorbing agent and gasoline as the killing agent. This latter seems to the writer to offer unusual possibilities to the secondary school teacher in the smaller communities and to the teacher in the grades where cyanide is doubly dangerous.

*Patten, *Embryology of the Chick* (1920), p. 10.

**It was called to the author's attention after the presentation of this paper that a similar killing vial is described in Matheson's new book on mosquitoes.