

## ETHYL ACETATE AS A KILLING AGENT FOR INSECTS

by H. A. DENMARK

With the increasing use of light traps as a survey instrument and for taking insects by collectors, killing agents are important. Insects to be determined should be in good condition when collected. All collectors desire to have perfect specimens for their collections. Since electric insect traps are being used as part of the Insect Pest Survey, the State Plant Board of Florida has been interested in a killing agent that would permit the taking of insects in a condition for correct determination and specimens good enough for the Plant Board collection.



Killing Jar Attached to Blacklight Trap

Cyano-Gas was first used as a killing agent. The powdered form of Cyano-Gas was placed in a small container with a perforated top that would hold 2 tablespoonsful and placed in the bottom of a half gallon glass jar. As soon as the jar was approximately half full of insects the killing agent was no longer effective, as the insects almost completely blocked the gas.

Ethyl acetate is the killing agent now used. The method employed is as follows: a half gallon glass jar is coated with approximately  $\frac{1}{4}$  inch of plaster-of-Paris on the inside by rotating the semi-liquid plaster-of-Paris until it hardens. The plaster-of-Paris creates enough heat that the jar often is broken by heat and expansion. To prevent this the plaster-of-Paris is allowed to harden for 36 hours before being used, by placing the jar in 5 to 6 inches of water. The lower half of the jar is wrapped with friction tape to prevent the cutting of the operator's hand in case the jar breaks.

Each night before operating the electric insect trap, 20 to 25 cc. of ethyl acetate is poured down the inside of the jar and the jar quickly rotated. The plaster-of-Paris absorbs the liquid, providing a killing agent from bottom to top of the jar. Insects continue to be killed until the jar is filled. During the cooler months the same amount of ethyl acetate will continue to kill insects 2 or 3 nights. The jar is attached to the electric insect trap as illustrated in the figure. The insects can be collected and pinned directly from the jar. Unless a large number of beetles are collected, destroying the moths, the moths are relaxed and ready for spreading upon removal from the jar.

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## NOTES ON THE OCCURRENCE OF *THYMELICUS LINEOLA* (HESPERIIDÆ) IN NORTH AMERICA. A SUMMARY

by HARRY K. CLENCH

A number of new locality records recently have been published for this comparative newcomer to the North American butterfly fauna, and with a few more to add here it seems an appropriate time to gather into one place all these records.

The following list includes all the records, hitherto published or otherwise, known to me of the occurrence of *Thymelicus lineola* Ochs. in North America. In each case the source is given, and occasionally a few remarks.

ONTARIO: London; first North American record, 1910; later seen in 1912, 1913, but not since (T. N. FREEMAN, *in litt.*). Amherstburg (Univ. Michigan, Mus. Zool.). Toronto; first found in 1945; often common, as in 1953, but fluctuates widely in numbers from one year to another (S. L. THOMPSON, *in litt.*; specimens in Can. Mus.). St. Catherines; extremely abundant (BAILEY, 1953).

MICHIGAN: Wayne Co.: Detroit (RAWSON, 1931; many collections). Oakland Co.: Oak Park (Univ. Michigan Mus. Zool.). Macomb Co.: Warren



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