

ESPECIALLY FOR FIELD COLLECTORS

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THE CHLOROCRESOL METHOD FOR FIELD COLLECTING

by NORMAN B. TINDALE

For some years entomologists at the South Australian Museum, in Adelaide, Australia, have been using a novel method to preserve insect specimens, including butterflies, moths, and grasshoppers, as well as run-of-the-mill insect collections such as are gathered in the course of trapping with the aid of mercury vapor lamps. Because of the many specimens to be handled, new and rapid methods of preservation were necessary. At first the rather odorous chemical, tri-chlor-phenol, which is a substance of a dirty sugar-like appearance, was used. This was very useful in inhibiting development of moulds in containers with freshly killed specimens. Using refrigeration it was possible after sealing up the cans to keep them for several weeks without apparent deterioration, then take and set them up without necessity of relaxing in moist air.

When adopted by private collectors the odor of the preservation was not such as to encourage good home relations when the domestic refrigerator was used by the entomologist.

A casual shortage of tri-chlor-phenol later led Mr. R. H. FISHER to experiment by using granular crystals of Chlorocresol (name registered in the British Pharmacopeia). This almost inodorous chemical was an instant success, revolutionised collecting techniques, and has enabled the development of a quite novel method of preserving specimens in the field.

As currently developed, the system is as follows:--One takes a small flat container which can be sealed and places about a teaspoonful of Chlorocresol in the bottom. This is held in place with a thin layer of cotton covered by face tissue or other soft paper. Most collectors of butterflies will find that rectangular sandwich boxes of clear plastic, about five inches square and one and a half inches high, are ideal. These are on sale in drug stores in most cities. The freshly killed specimens are laid on the tissue just so they do not touch each other. A pencilled label is dropped in, a layer of tissue added, and so on in alternate succession of layers until the container is full. If the boxes have been prepared a day or so ahead of time the tissues will be sufficiently saturated with the vapours of the Chlorocresol that the container can be sealed immediately,

using from one to three layers of Scotch Tape as sealer. In very hot humid weather it may be advisable to delay sealing the containers until night time when the atmospheric humidity is less. Under desert conditions the container should be sealed immediately so as to avoid undue loss of moisture. Assistants engaged in spreading specimens from the Great Western Desert of Australia noted that the cans which contained one or more large grasshoppers in addition to other insects arrived in particularly well relaxed condition indicating that the degree of moisture originally sealed in is important. The boxes should be kept out of the sun and away from heat to avoid possible over-volatilisation of the Chlorocresol and its subsequent recrystallisation. When home base is reached the containers may be kept in a refrigerator, so long as the sealing is adequate to ensure no loss of humidity.

The present writer used the method, for example, while collecting Lepidoptera in the United States during the Summer of 1959. A year later, after carrying them to Australia he is still able to open the sealed containers, and to take out what appear to be practically fresh material ready for mounting, it being only necessary to place them at once in a damp atmosphere to ensure that they do not dry out while awaiting their turn for spreading upon the drying boards.

Little discernable deterioration takes place in the specimens over long periods of time. It has become standard practice at the South Australian Museum to mail containers back to the institution where they are kept chilled until they can be processed. For such field work the square flat cans with hinged lids, used for packing pipe tobacco, are ideal, because they are unbreakable. Our cans are all prepared in advance of the expedition. Using the Chlorocresol method fresh material may be held for several months or even almost indefinitely. A very sensitive test of the usefulness of the method is shown by the fact that it is usually possible to hold Geometrid moths of delicate fugitive green and blue colors for many weeks without damage.

A virtue of the transparent plastic containers is that labels can be placed inside the boxes so as to be visible from outside the container. No breaking of seals is necessary until the specimens are to be processed. Good brands of plastic container are sufficiently strong to travel through the mails with minimum likelihood of damage and the fact that the specimens remain relaxed also helps to prevent damage. Care must be taken that the containers are so filled that no movement can take place.

During the past year it has been possible to send newly taken material from Australia to the United States for processing and also to have material taken in the island of Timor, carried for several days by jeep in the field, flown to Australia, and processed at the South

Australian Museum more than a month later, as fresh as though it had just been captured.

During a recent visit to the United States difficulty was encountered in finding suitable supplies of Chlorocresol. In Australia several chemical companies stock it. The most suitable grade is in the form of a white granular substance like sugar. This is sold, for example, by D. H. A. Laboratories, Pty. Ltd., Sydney, N. S. W., Australia, and costs approximately \$7 per pound. This quantity should be sufficient to keep the average collector supplied for several years. Much of the chemical agent can be reclaimed from old containers, as there is little loss by evaporation.

The present writer's speciality is the study of the primitive moths of the family Hepialidæ. Freshly killed insects of this family can be sent to him from many places packed in this manner and arrive in perfect condition whereas previously their heavy bodies and brittle wing tissues made it difficult to ship dried and spread specimens without risk of injury.

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SPRING COLLECTING IN MEXICO: THE GOMEZ FARIAS REGION OF SOUTHWESTERN TAMAULIPAS

by THOMAS C. EMMEL

The lepidopterist traveling to Mexico generally chooses to plan his trip during the summer months of July to September in order to collect at the peak of the flight season, for after the summer rains have begun, even the most unobservant *tourista* cannot help but notice the great — often incredible — numbers of butterflies along the highways.

In the spring of 1959, the author was able to experience a different kind of collecting — traveling on a 5,000 mile expedition with L. IRBY DAVIS, Research Associate of the Cornell Laboratory of Ornithology, into remote areas along the eastern coast of Mexico and the Yucatan Peninsula in the height of the dry season.

One of the most interesting collecting areas — and one that is readily accessible in a one-day journey from Texas — was in southwestern Tamaulipas, around the village of Gomez Farias. The dirt road to the