

# Packing and Shipping Pinned Insects<sup>1</sup>

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Some recent horrible examples of damage to mailed packages of insect material (see Fig. 1) suggest that words of warning and suggestions for improvement are again in order. Some of the observed disasters seem to be the fault of the postal service in careless or rough handling; some, however, are certainly the shippers' own fault; some may be no one's fault, but simply an inevitable result of bigness—of the sheer volume and weight of modern mail. Whatever the causes, obviously we need to exercise as much preventive care as we possibly can and to take precautions based on what we know of the fragility of insect material and the realities of mail handling. If material is worthwhile and valuable, we should take pains to see that it has the best possible chance of passing safely through the bumps and grinds of modern mail.

The comments herein refer primarily to shipments of pinned, dried insects, but many of the same points apply to shipments of insects in liquid or on slides, or dried but unmounted insects in pill boxes or similar containers. Damage in these latter categories seems less frequent, perhaps because those who deal with such materials are better schooled in ways of packing them.

It must be admitted at the outset that USDA's Insect Identification office at Beltsville has had its own share of disasters, usually stemming from lack of direct supervisory power over the final stage of packing for shipment. But the amount of damage in boxes received in Beltsville and Washington indicates that the time is ripe for some general warnings and suggestions, focused on problem areas and common mistakes.

do's

1. *DO use a strong pinning box, and always ship it in another container surrounded by packing material.* The strong box may be a specimen saver if the shipping container is jammed, dented, or crushed.

2. *DO use good bottoms in pinning boxes, glued or pinned firmly to bottom of box.* Polyethylene foam and similar materials are fine in collections for ease of pinning, but they do not grip specimen pins firmly enough for shipping purposes. In particular, a single layer of corrugated cardboard is a weak and insecure pinning base. I recently received a box with such a bottom, and all pins had come loose and were in a pile at one end of the box, with near total destruction of the specimens. However, if corrugated cardboard is the only material available, then use 2 layers fastened together. Set (i.e. push down in place) all pins firmly, as even 2 layers of this material are none too good at best. Whatever material is used for the pinning bottom, see *DO 13* for a back-stopping trick.

3. *DO set pins firmly.* No. 2 and no. 3 pins can usually be set firmly enough by hand, if one does not mind being stabbed occasionally in the absence of the poor heads that are (or were!) on many modern pins. But

slender or limber pins definitely require setting by pinning forceps, or, carefully, by tweezers if forceps are not available. Blunt-tipped pins are almost impossible to set firmly; see *DO 13* for a technique that would help here.

4. *DO anchor large and heavy specimens with additional pins.* Examples: cuterebrid flies, giant water bugs, bumblebees, grasshoppers, fat-bodied Lepidoptera, large beetles. It is useful to slant pins inward toward a specimen being anchored, thus keeping it in place as well as preventing it from swinging on the pin.

5. *DO anchor each microvial with pins at both sides AND the free end.* If a microvial slips from its stopper it can do great damage as it bounces around among pinned insects. Some favor the further precaution of pinning microvials in a box separate from the pinned specimens. This alternative should not be necessary if microvials are properly anchored, and the alternative does require double labeling. Moreover, in a separate box one still should anchor the microvials. If two or more come loose, their identities will be confused, and the specimens may be lost.

6. *DO wrap the pinning box, or seal it with tape, before packing in carton.* Protecting the box in this way will keep out dirt, excelsior shavings, etc. A good idea for packages going abroad, which may be opened for customs inspection but not rewrapped: seal the opening of the pinning box with a transparent material such as cellophane, then close the lid and wrap the box in the usual way. An inspector can see the contents, but if he does not rewrap, the specimens are still protected from dirt, excelsior, insects, etc. I once had returned to me from a foreign country a box of tiny flies, left unwrapped by a customs inspector and merely stuffed back into the excelsior in the shipping carton. Excelsior shavings drifted into the box. The pins and labels came back in good condition, but the flies were represented only by an occasional leg or thorax.

7. *DO tie two or more pinning boxes tightly together, if shipped in the same package.* This precaution avoids jarring of the boxes against one another during shipment and prevents oversight of any boxes in unpacking.

8. *DO put an address label on the pinning box as well as on the shipping carton.* Wrappers are sometimes torn off completely, or addresses are torn off or unreadable, especially in international mail.

9. *DO leave plenty of room on all sides between pinning box and shipping carton.* A 2- or 3-inch space is recommended, filled with packing of excelsior, crumpled newspaper, or similar material. A strong specimen box is great, but unless there is enough surrounding packing, jarring can cause much destruction. But keep the packing a little loose (see *DON'T 5*). Some new packing materials are excellent, such as plastic "spaghetti" or the thin sheets of plastic welded together with bubbles of air left between them.

10. *DO label the package "Fragile" or "Handle with Care."* This is the usual direction, and I guess it's desirable. But I sometimes wonder cynically if such pack-

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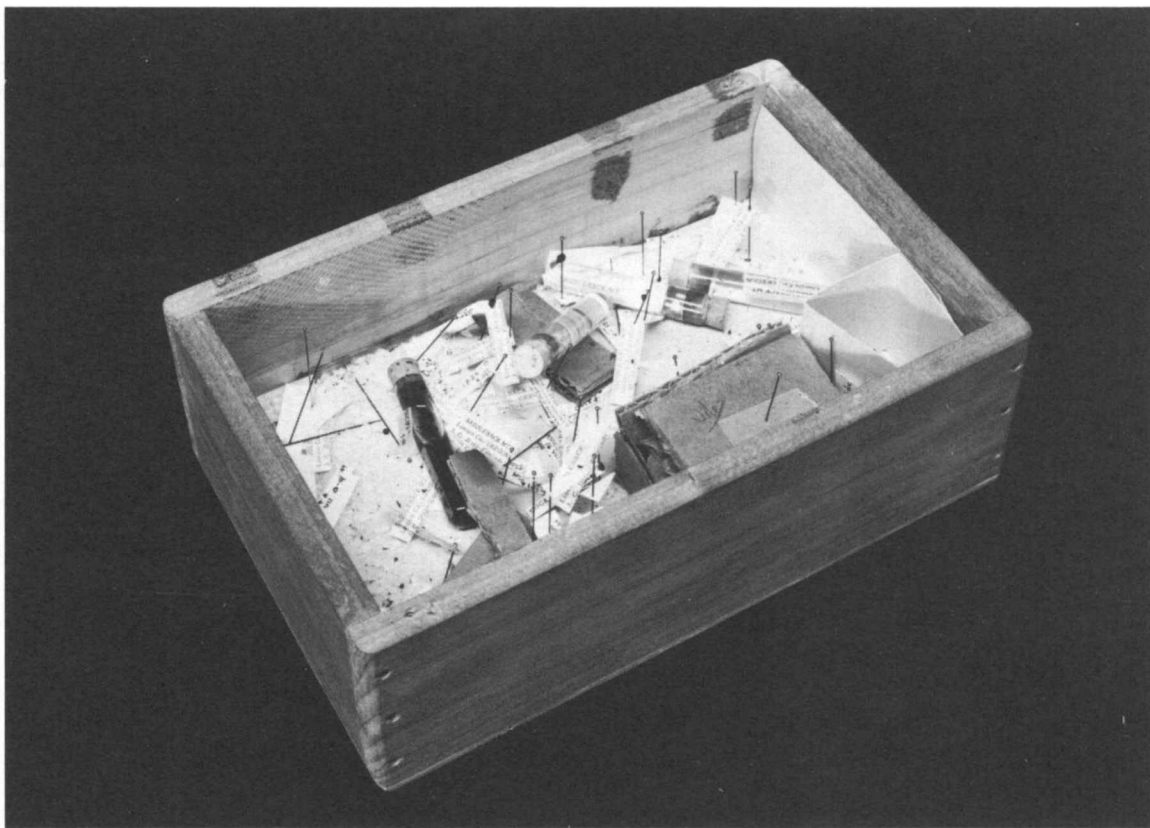


FIG. 1.—A box of specimens (lid removed) received at Beltsville. The box, a mixture of pinned specimens and unanchored vials, was wrapped and mailed without surrounding packing.

ages are thrown farther and harder, on the principle that what comes into the kitchen should stand the heat.

11. *DO ship small packages to overseas foreign addresses by "Small Packet," Air Mail, where possible* (a very few countries do not accept them). Customs forms are reduced to one label (U.S. Postal Form 2976, a green sticker). Such a "Small Packet" must be so labeled, left unsealed, weigh no more than 2 lb., 3 oz., and measure no more than 36 inches in total length, breadth, and thickness. By air the packets will go in bags of first-class mail, or at most in bags of similar small packets, and will get fewer bumps in that lightweight mail. By surface mail, small packets would be mixed with heavy parcel post packages in the holds of ships. Small-packet mail is known as "Sample Post" in some countries.

Most insect shipments can be made quite satisfactorily if the preceding 11 *DO's* are observed. However, especially careful shippers will find the following additional *DO's* helpful, especially under circumstances requiring unusual care, such as in shipping a holotype or rare specimens.

12. *DO tease out a thin layer of cotton batting over the bottom of the pinning box, or at least over the cracks along the edges.* This method is especially useful for shipping specimens on card points and for significant material such as types or rarities. Any "drop-outs" may be caught in the strands of cotton and saved from further damage. Such specimens will not get lost in the cracks.

Obviously, if many specimens are lost from points and 2 or more different localities/dates/hosts/or other significant data are involved, it is usually not possible to re-associate them.

13. *DO put cardboard over the top of the pins, with just enough packing to hold it snugly in place.* Securing pins in this way will take care of any poor pinning bottom that was a last resort or an oversight, and it will allow for failure to set pins firmly or to anchor heavy specimens properly. Any lightweight but fairly stiff cardboard is appropriate; the backing of a writing tablet can be used, though stiffer board is preferable. Corrugated cardboard is not desirable. Keep pins at about the same height: Push some in a bit, or add more for extra support, such as at one end or along one edge. In particular, watch for long, weak pins that have not been set deeply. If they stand out from the crowd, pressing down a cardboard cover may buckle them and damage the specimens, and nearby ones as well. A lifting tab of adhesive tape will facilitate safe removal of the cardboard cover.

14. *DO fumigate pinning boxes for each shipment.* I have formed the habit of fumigating a box each time it is used in shipping insects. If there are any pests in it, damage en route will be prevented (an important consideration on long voyages to distant countries), and live pests will not be shipped to correspondents. But watch the kind of pinning bottom. Some plastics disappear—repeat, disappear!—when the fumigants are organic solvents. Also see *DON'T 2*.

#### DON'TS

1. *DON'T put a vial in a box of pinned insects* (see Fig. 1). You may get by if the vial is thoroughly anchored with additional pins, but a good general rule is still *never* to mix vials and pinned specimens. Tape a vial or vials to the outside of the pinning box, or put them in a separate box, or ship them separately, whichever is appropriate or desired.

2. *DON'T leave PDB or naphthalene crystals loose in the pinning box.* They can devastate dried insects!

3. *DON'T use excelsior for packing above the insects inside the pinning box.* Shavings can sift into the specimen space and do a surprising amount of damage to tiny flies or to essential parts like bristles, antennae, and arista. (See also *DO 6*.)

4. *DON'T reuse weak or damaged cartons.* Start with an undamaged carton. "Accept none other; the best is none too good." A carton that has already been folded or otherwise seriously weakened has lost its initial strength and resistance. Reuse of a cracked crutch is asking for trouble!

5. *DON'T stuff packing material too tightly.* A pinning box should be *nestled* in the packing with a little room for play to help absorb the shocks that the package will surely get. Otherwise, jarring impacts are transmitted full force to the pinning box, thence to the pins and the specimens.

6. *DON'T stuff mailing tubes tightly.* Really, I prefer to say "Don't use mailing tubes," at least for pinned specimens, but they are so commonly available and used that one must accept them and concentrate on doing the best one can with them. Damage usually occurs when the tube chosen is too small and the corners of the pinning box touch the tube or come so close that no packing can be interposed. The box, having no cushioning packing around it, directly takes the many jarring shocks that the tube itself receives. It appears that the tubes are more likely to be aimed and thrown in sorting mail, thus receiving far more serious jarring shocks than do ordinary carton-type packages. Choose a tube enough larger than the pinning box that packing can be arranged *completely around* the box. Again (see *DON'T 5*), packing should not be too snug: Nestle the box. Even with such care, however, and with firm setting of pins and anchoring of microvials, mailing tubes are not altogether desirable for pinned specimens. It is true that 1 or 2 small and light pinned specimens are often sent successfully in a shell vial in a mailing tube, given adequate surrounding packing, but in general try to avoid mailing tubes. I have received tubes with one end squeezed and the shell vial in smithereens; a good pinning box in a carton would have survived. Furthermore, tubes sometimes arrive topless and empty because of insufficient care in seating the screw top properly, or in matching the threads.

So much for some *DO's* and *DON'Ts*. One more thing you'll need: Good luck!

#### IN MEMORIAM



BAILEY B. PEPPER

Bailey B. Pepper, 64, Chairman of the Department of Entomology and Economic Zoology, College of Agriculture and Environmental Science, Rutgers University, New Brunswick, N.J., passed away on December 22. Dr. Pepper had served as department chairman since 1945 during which time he had authored and co-authored many scientific papers describing insect control and safe use of pesticides. Dr. Pepper was active in the Entomological Society of

America and served as its president in 1968. He represented the Society at the 13th International Congress of Entomology in Moscow in that year.

For many years Dr. Pepper was in the forefront of the battle to control mosquitoes. He served as secretary of both the State Mosquito Control Commission and the New Jersey Mosquito Extermination Association. He was a member of the Middlesex County Mosquito Extermination Commission and the American Mosquito Control Association.

A Bailey B. Pepper Memorial Library has been established at the Department of Entomology and Economic Zoology. Contributions to the Memorial Library will be accepted. Checks may be made to the order of Rutgers University and forwarded to Dr. Andrew J. Forghash at the above address.

#### PACIFIC BRANCH CHANGES MEETING SITE

The Pacific Branch meeting will be held June 22-24, 1971 at the Woodlake Inn in Sacramento, California. Please note that this is a change from the previously announced meeting site in Fresno. *Chairman* W. H. Lange, Jr.; *Secretary-Treasurer* W. W. Allen, 112 Agriculture Hall, Dept. of Entomology, Univ. of California, Berkeley 94720.

#### 1971 LIVESTOCK INSECTS WORK CONFERENCE

Mo-Ranch, Hunt, Texas 78024  
June 28-July 1, 1971

*Sponsored by:* The Entomology Research Division, U.S. Department of Agriculture; and Section D, Medical and Veterinary Entomology, Entomological Society of America.

*Host:* Livestock Investigations Laboratory, Kerrville, Texas 78028.

*Purpose:* This is a work conference to review and *informally* discuss current data on research pertaining to systemic insecticides and the biology and control of flies and other livestock pests. It is designed for investigators actively engaged in this work and those who plan to do so in the immediate future.

*Registration:* 1:00-5:00 p.m., June 28, 1971

Complete Agenda can be obtained from Dr. C. H. Schmidt, Entomology Research Division, USDA, Plant Industry Station, Beltsville, Maryland 20705.

For Room Reservations, contact Reverend Bill Henning, *President*, Mo-Ranch, Hunt, Texas 78024.

Due to the sight and the facilities available, participants are urged to bring their families.