JOURNAL OF APPLIED SCIENCE AND SOCIAL SCIENCE
eISSN 2229-3113 pISSN 2229-3205

Volume 15 Issue 12, December 2025
Impact factor: 2019: 4.679 2020: 5.015 2021: 5.436, 2022: 5.242, 2023: 6.995, 2024 7.75

METHODS OF COLLECTION AND PRESERVATION OF INSECTS

Raxmatjonova Mubinaxon Xikmatilla kizi
1-State Specialized Secondary School
Master degree
mubinarahmatjonova707@gmail.com
Akhmadova Gulsanam Azizjon kizi
Joint Agrarian Faculty
25.64-group's student
ahmadovagulsanam880@gmail.com

Annotation: This article provides information about how scientists and students may collect and preserve insects. In the 21st century, more and more people are interested in collecting insects, because one of the best ways to learn about insects is to collect them. If you are researcher of insects you can learn much more information to handling them instead of reading from books. Because of their incredible diversity, insects, mites, and other related groups vary widely as to their proper collecting requirements and methods. In the following sections, we will explore some of the many recommended techniques and look at the varied equipment used by collectors. Which species and how many specimens to collect depends on the purpose for which the material is intended. For hobbyists and students, small samples are usually adequate. However, when important pest insects and mites need to be identified, they should be collected in series if at all feasible.
Key words: Objectives, Equipments, Aspirator, Preservation, Pinning, Precaution, Biodiversity, Collector.

INTRODUCTION

The methods used to collect insects and mites are dictated by the ultimate goal of the samples collected. Insects may be collected as a hobby for personal enjoyment of their diversity and beauty. They may be collected in conjunction with school courses on biology or entomology. Specific insects groups may be sampled to assess or measure biodiversity to help identify appropriate areas to be included in reserves. Aquatic species may be used to detect changes in water quality. Pest species may be sampled to assess presence/absence or abundance in order to determine whether control measures are necessary. Specific groups or species may be collected to acquire material for biological, physiological, ecological, molecular, and systematic studies.
Many persons starting a collection attempt to collect every specimen they find. Biology students in high school and college are often required to collect specimens from as many orders or groups as possible. The experience and knowledge gained in making a general collection are of value in helping the collector decide on a specialty. However, with so many different kinds of insects from which to choose over 100,000 described species in North America alone most people find that as their skills and interests increase, concentrating eventually on 1 or 2 of the major insect or mite groups is desirable. Specimens other than those in a chosen group may still be collected for exchange with other collectors

JOURNAL OF APPLIED SCIENCE AND SOCIAL SCIENCE
eISSN 2229-3113 pISSN 2229-3205
Volume 15 Issue 12, December 2025
Impact factor: 2019: 4.679 2020: 5.015 2021: 5.436, 2022: 5.242, 2023: 6.995, 2024 7.75

LITERATURE AND REVIEW

You may use these methods for
1) To know the pest occurance of the locality.
2) To study the taxonomic character of insects.
3) To learn the identification of species.
4) To keep the different insects in collection.
5) To study the bionomics of pests.

DISCUSSION

You need to equipment for insect collection;
Insect Collecting Net. The net with handle nearly 2 ft. in length having circular iron of ring of 1 ft. diameter attached to it. A collecting bag made up of ordinary mosquito netting cloth is attached to the iron ring. It is used to catch the flying insects.
Aspirator. A glass tube is used for collecting the small size insects which is fitted with rubber cock. A rubber cock is having two holes in which small tubes are fitted. Out of the small two tubes one is longer and another is shorter, which is used for sucking collected insects to escape.
Insect Storage Box. The insect stored boxes are made up of seasoned wood in such way that their joints are intact and dust proof. The bottom as well as top portion is covered with cork sheet. The pinned insects can be easily mounted is these boxes.
Insect Setting/Stretching/Mounting Board. This board has a groove down the
middle that holds the insect's body and two flat pieces that the wings will rest on.
Killing Bottle. It is used for terrestrial insects. Consist of a glass bottle with metal lid with a thin layer of plaster of Paris in the bottom. The plaster layer is saturated with ethyl acetate and the insects placed in the jar are killed by asphyxiation.
Specimen tubes and Glass Vials. It is used for aquatic and soft bodied insects. Insect specimen may be preserved in 70% Ethyl alcohol.

RESULTS

After catching your species, you can use these methods for preservation insects. Insects and mites of all kinds may be killed and preserved in liquid agents, but it is first necessary to determine the advisability of using a liquid killing agent rather than a dry gaseous agent. Some kinds of insects are best kept dry; it may not be advisable to allow others to become dry. Directions for the treatment of various insects are given in the last part of this publication under the various orders. Ethanol (grain or ethyl alcohol) mixed with water (70 to 80 percent alcohol) is usually the best general killing and preserving agent. For some kinds of insects and mites, other preservatives or higher or lower concentra tions of alcohol may be better. Because pure ethanol is often difficult to obtain, some collectors use isopropanol (isopropyl alcohol) with generally satisfactory results. Isopropanol does not seem to harden specimens as much as ethanol, and at least it is satisfactory in an emergency. Although there is controversy over the relative

JOURNAL OF APPLIED SCIENCE AND SOCIAL SCIENCE
eISSN 2229-3113 pISSN 2229-3205
Volume 15 Issue 12, December 2025
Impact factor: 2019: 4.679 2020: 5.015 2021: 5.436, 2022: 5.242, 2023: 6.995, 2024 7.75

merits of ethanol and isopropanol, the choice of which to use is not so important as what concentration to use.

After specimens have been collected, time is often not immediately available to prepare them for permanent storage. There are several ways to keep them in good condition until they can be prepared properly. The method used depends largely on the length of time that the specimens may have to be stored temporarily.

Medium to large specimens may be left in tightly closed bottles for several days in a refrigerator and still remain in good condition for pinning as will smaller specimens if left overnight. Some moisture must be present in the containers so that the specimens do not become "freeze-dried," but if there is too much moisture, it will condense on the inside of the bottle as soon as it becomes chilled. Absorbent paper placed between the jar and the insects will keep them dry. When specimens are removed for further treatment, place them immediately on absorbent paper to prevent moisture from condensing on them.

It is standard practice to place many kinds of insects in small boxes, paper tubes, triangles, or envelopes for an indefinite period, allowing them to become dry. It is not advisable to store soft—bodied insects by such methods because they become badly shriveled and very subject to breakage. Diptera should never be dried in this manner because the head, legs, and most of all the antennae become detached very easily. Almost any kind of container may be used for dry storage; however, tightly closed, impervious containers of metal, glass, or plastic should be avoided because mold may develop on specimens if even a small amount of moisture is entrapped. Nothing can be done to restore a moldy specimen.

CONCLUSION.

In conclusion, for entomologists using collecting methods. After that, they need to know about preservation of insets. Nowadaays, systematists are increasing using molecular methods to study insect relationships, make identifications, and determine species limits. Some of these techniques, such as study of cuticular hydrocarbons, can be used on dried insects, even those stored in museum collections. How ever, many others require that specimens be treated so that DNA or other molecules are preserved. In general, specimens for molecular work should be collected in 95% or absolute (100%) ethanol (ethyl alcohol). It is best if specimens are thoroughly dehyrated by changing the alcohol at least a couple of time before the specimens are stored for any length of time. It is also advisable to keep specimens cold.

JOURNAL OF APPLIED SCIENCE AND SOCIAL SCIENCE
eISSN 2229-3113 pISSN 2229-3205
Volume 15 Issue 12, December 2025
Impact factor: 2019: 4.679 2020: 5.015 2021: 5.436, 2022: 5.242, 2023: 6.995, 2024 7.75

Spicemen tools

REFERENCES:

1. A'Brook, J. 1973. Observations on different methods of aphid trapping. Ann. Appl. Biol. 74:263-267.
2. Barnes, H. F. 1941. Sampling for leather jackets with orthodichlorobenzene emulsion. Ann. Appl. Biol. 28:23-28.
3. Blakeslee, T. E., and others. 1959. Aedes vexans and Culex salinarius light trap collection at five eleva tions. Mosq. News 19:283.
4. Coulson, R. N., R. T. Franklin, and D. A Crossley, Jr. 1970. A self maintaining window trap for collecting flying insects. Entomol. News 81:164.
5. Evans, G. O., J. G. Sheals, and D. MacFarlane. 1964. The terrestrial Acari of the British Isles: An introduction to their morphology, biology, and classification. V. 1. Introduction and biology. 219 pp. Brit. Mus. (Nat. Hist.), London. Techniques treated on pp. 61-88.

6.Frost, S. W. 1952. Light traps for insect collections, survey, and control. Pa. Agr. Exp. Stn. Bull. 550, 32 pp.
7.Gurney, A. B., J. P. Kramer, and G. C. Steyskal. 1964. Some techniques for the preparation, study, and storage in microvials of insect genitalia. Ann. Entomol. Soc. Am. 57:240-242.
8.Harris, R. H. 1964. Vacuum dehydration and freeze drying of entire biological specimens. Ann. Mag. Nat. Hist. 7(13):65-74.
9.Jonasson, P. M. 1954. An improved funnel trap for capturing emerging aquatic insects, with some preliminary results. Oikos 5:179 188. Joosse, E. N. G. 1975. Pitfall-trapping as a method for studying surface dwelling Collembola. Ztschr. f. Morph. u. Oekol. der Tiere 55:587 596.
10.Lane, J. 1965. The preservation and mounting of insects of medical importance. WHO/Vector Control 152.65, 27 pp. Mimeographed.
11.Morris, K. R. S. 1961. Effectiveness of traps in tsetse surveys in the Liberian rain forest. Am. J. Trop. Med. and Hyg. 10:905-913.