

# Insect collecting

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**Insect collecting** refers to the collection of insects and other arthropods for scientific study or as a hobby. Because most insects are small and the majority cannot be identified without the examination of minute morphological characters, entomologists often make and maintain insect collections. Very large collections are conserved in natural history museums or universities where they are maintained and studied by specialists. Many college courses require students to form small collections. There are also amateur entomologists and collectors who keep collections.

Historically insect collecting has been widespread and was in the Victorian age a very popular educational hobby. Insect collecting has left traces in European cultural history, literature and songs (e.g., Georges Brassens's *La chasse aux papillons* (*The Hunt for Butterflies*)). The practice is still widespread in many countries, and is particularly common among Japanese youths.



Beetle collection at the Melbourne Museum, Australia

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## Collecting techniques



A Robinson light trap for collecting moths

Insects are passively caught using funnels, pitfall traps, bottle traps, malaise traps, flight interception traps and other passive types of insect traps, some of which are baited with small bits of sweet foods (such as honey). Different designs of ultraviolet light traps such as the Robinson trap are also used by entomologists for collecting nocturnal insects (especially moths) during faunistic survey studies. Aspirators or "pooters" suck up insects too small or delicate to handle with fingers.<sup>[1]</sup>

Several different types of nets are commonly used to actively collect insects. Aerial insect nets are used to collect flying insects. The bag of a butterfly net is generally constructed from a lightweight mesh to minimize damage to delicate butterfly wings.

A sweep net is used to collect insects from grass and brush. It is similar to a butterfly net, except that the bag is generally constructed from more rugged material. The sweep net is swept back and forth through vegetation quickly turning the opening from side to side and following a shallow figure eight pattern. The collector walks forward while sweeping, and the net is moved through plants and grasses with force. This requires a heavy net fabric such as sailcloth to prevent tearing, although light nets can be used if swept less vigorously. Sweeping continues for some distance and then the net is flipped over, with the bag hanging over the rim, trapping the insects until they can be removed with a pooter. Other types of nets used for collecting insects include beating nets and aquatic nets.<sup>[2]</sup> Leaf litter sieves are used by coleopterists and to collect larvae.



Sweep netting for grassland insects

Once collected, a killing jar is used to kill required insects before they damage themselves trying to escape. However, killing jars are generally only used on hard-bodied insects. Soft-bodied insects, such as those in the larval stage, are generally fixed in a vial containing an ethanol and water solution.<sup>[3]</sup>

## Storage and curation



Equipment for preparation

The usual method of display is in a glass-covered box, with the insects mounted on specially made non corrosive insect pins stuck into suitable foam plastic or paper covered cork at the bottom of the box. Common pins are not used. Very small insects may be pinned on "minuten" (very tiny headless pins) stuck into a block of foam plastic on a standard insect pin. Alternatively they may be glued onto a small piece of card on the pin. There are specific procedures for proper mounting that are used to show off the insects' essential characteristics. Techniques and equipment may be varied to deal with various species or requirements. For example, one or both of the wings of a beetle or grasshopper can be pulled open and fanned out to show the wing structure that otherwise would be hidden. At least the date and place of capture should be written or computer printed onto a piece of paper or card transfixed by the pin. This is called a data label.<sup>[4]</sup>

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Rare insects, and/or those from distant parts of the world may also be acquired from dealers or by trading. Some noted insect collections have been sold at auction.<sup>[5]</sup>

## Popular culture

The practice of insect collecting in Japan is the inspiration behind the popular video game series *Pokemon*.<sup>[6]</sup>

## See also

- Identification key

## References

1. Martin, J.E.H. 1977. Collecting, preparing and preserving insects, mites, and spiders. The Insects and Arachnids of Canada, Part 1. Publ. 1643, Res. Br., Canada Dep. Agric., Ottawa, ON.
2. Charles Valentine Riley, 1892 *Directions for collecting and preserving insects* Bulletin (United States National Museum) no. 39, pt. F. Washington, Govt. Printing Off. Full text online here (<http://www.biodiversitylibrary.org/item/20176>)
3. Hongfu, Zhu, 1949 *How to know the immature insects; an illustrated key for identifying the orders and families of many of the immature insects with suggestions for collecting, rearing and studying them*, by H. F. Chu. Pictured key nature series Dubuque, Iowa, W. C. Brown Co. Full text online here (<http://www.biodiversitylibrary.org/item/29017>)
4. V.M. Uys & R.P. Urban (Eds.): "How to Collect and Preserve Insects and Arachnids". Pretoria 2006. 112 p. ISBN 1-86849-311-3
5. "A rich and diverse fauna : the history of the Australian National Insect Collection; 1926–1991". Melbourne : CSIRO, 1997. 386 p. ISBN 0-643-06322-6
6. <https://www.inshorts.com/news/pokemon-inspired-from-creators-bug-collection-hobby-1468331005757>



An insect net



Part of a beetle collection. The insects are transfixed by entomological pins which allow handling and which also pierce the data label

## Further reading

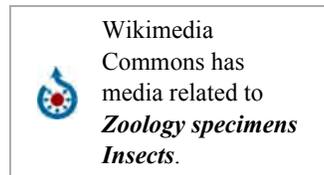
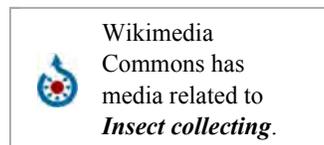
Picture Guide series For college students. Out of date but very useful for beginners.



- Harry Edwin Jaques, 1941 *How to know the insects; an illustrated key to the more common families of insects, with suggestions for collecting, mounting and studying them*. His Pictured-key nature series Mt. Pleasant, Ia.,The author Full text online here (<http://www.biodiversitylibrary.org/item/29869#page/3/mode/1up>) Excellent college level guide
- Hongfu, Zhu, 1949 *How to know the immature insects; an illustrated key for identifying the orders and families of many of the immature insects with suggestions for collecting, rearing and studying them, by H. F. Chu*. Pictured key nature series Dubuque, Iowa, W. C. Brown Co. Full text online here (<http://www.biodiversitylibrary.org/item/29017>)

## External links

- Capture methods and techniques (<http://www.stevemcwilliam.co.uk/entomol/invcaptr.htm#Invertebrate%20Capture%20Techniques%20Header>) Intermediate level
- Collecting and Preserving Insects and Mites: Tools and Techniques ([http://www.ars.usda.gov/Main/site\\_main.htm?docid=10141&page=1](http://www.ars.usda.gov/Main/site_main.htm?docid=10141&page=1)); PDF



([http://www.ars.usda.gov/SP2UserFiles/ad\\_hoc/12754100CollectingandPreservingInsectsandMites/collpres.pdf](http://www.ars.usda.gov/SP2UserFiles/ad_hoc/12754100CollectingandPreservingInsectsandMites/collpres.pdf)) Comprehensive, detailed download. Advanced level.

- How to make an insect collection; containing suggestions and hints designed to aid the beginning and less advanced collector (Wards Natural Science Establishment 1945) (<http://www.biodiversitylibrary.org/item/29841#page/3/mode/1up>)
- How to collect and preserve insects (H. H. Ross) (<http://www.biodiversitylibrary.org/item/105840#page/7/mode/1up>) Full text of 1962 printing
- Expedition Insect Manual PDF (<http://www.rgs.org/NR/rdonlyres/D7012894-AC14-4B7F-AF57-5EDA36E85E8E/0/Insectsmanualupdated.pdf>)
- Chris Raper Insect Collecting ([http://chrisraper.org.uk/blog/?page\\_id=91](http://chrisraper.org.uk/blog/?page_id=91)) Easy to read Excellent illustrations]
- Insect Collection Manual (<http://australianmuseum.net.au/Uploads/Documents/9382/The%20Invertebrate%20Collection%20Manual.pdf>) Australian Museum introductory guide. Beginner level
- Curation Of Insect Specimens N P S (<http://www.nps.gov/museum/publications/conservoogram/11-08.pdf>) Beginner level
- Museum handbook (<http://www.nps.gov/history/museum/publications/>)
- Garthe's Insect Gradebook (<http://www.garthesinsectgradebook.20megsfree.com/photo2.html>) Butterfly mounting.
- Coke Smith Insect Collection ([http://www.cokesmithphototravel.com/Virtual\\_Insect\\_Collection.html](http://www.cokesmithphototravel.com/Virtual_Insect_Collection.html))
- A.Tereshkin (<http://tereshkin.info/methods.htm>) Devices for Ichneumonidae collecting. Advanced
- Why We Kill Bugs- The Case for Collecting Insects (<http://www.biology.ualberta.ca/bsc/pdf/whywekillbugs.pdf>) Rationale for insect collecting

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