

Cambridge University Press

0521632412 - Identifying British Insects and Arachnids: An Annotated Bibliography of Key Works

Edited by Peter C. Barnard

Excerpt

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Sources of information

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We live in a world increasingly dominated by information that is delivered in an electronic format. Many people have access to sophisticated personal computers that can store and manipulate large amounts of data. High-speed communication networks can transmit this information around the world in a matter of seconds. Although these developments have revolutionised the process of publishing, printed books and journals still remain the predominant method of communicating scientific information. There is a vast amount of entomological research and biological data that has been published since the seventeenth century. Many of these publications are still key reference works. For the foreseeable future, researchers will need access to information in traditional printed form, combined with a growing dependence on electronic systems to locate, deliver and store information.

Finding relevant and useful references is fundamental to successful research. Whether you are looking for information inspired by an amateur interest, studying for an academic examination or conducting research, finding references can be a frustrating process. This is not helped by the fact that most people receive little or no formal guidance in how to locate sources of information.

This book provides the reader with a range of key entomological references to the identification of the British insect fauna. Each reference, annotated with useful comments, has been carefully selected by an expert in the field. However, this still leaves unanswered two basic questions, namely 'where can I find more references on a given entomological topic?' and 'how can I obtain copies of books and journal publications?' This chapter addresses both these issues and aims to guide readers to a wide range of information sources.

Finding sources of references

There is no single method for successfully finding references on a particular entomological subject. The best approach will depend on the topic, the depth of interest and the time available to pursue the research.

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Bibliographies

If you have been fortunate enough to have already found a relevant book or journal article, you should have a gateway to further references on this topic. This will be in the form of a bibliography (sometimes known as 'list of references' or 'further reading'). In books, bibliographies may occur at the end of each chapter, or at the back of the book, subdivided by chapter or topic. More commonly, bibliographies appear as an alphabetical list, arranged by author. Bibliographies in journals are always printed at the end of the paper or article. It is surprising that many entomologists do not fully exploit these rich sources of information. Although bibliographies are frequently underrated, authors have included these references for a number of good reasons. It enables the author to substantiate particular points referred to in the text and gives the reader access to more detailed sources of information that could not be included in the publication. A comprehensive and accurate bibliography in a publication indicates that the author has thoroughly researched the subject. Scanning a bibliography can help to assess the quality of a publication.

There are a number of inevitable problems with any bibliography. The most obvious is that only references predating the bibliography can be included. So a useful work you have discovered, published in 1970, will only list publications up to this date. You will need other sources to find more recent publications. Secondly, most bibliographies will provide only a standard reference, without any comment or annotation about its usefulness or readability. Only when you have found the reference and read it yourself will this become apparent.

Printed abstracting and indexing services

Anyone conducting a serious and detailed review of a particular entomological subject is confronted by the sheer enormity of the size of the literature. For example, the Entomology Library at The Natural History Museum, London, houses over 90 000 bound volumes and currently subscribes to over 900 entomological journals.

Most specialist research is published as papers or articles in scientific journals. Entomological papers appear in specialist entomological journals and in a wide range of ecological, biological, medical and agricultural titles. It would be impossible for an individual to scan all the current literature, never mind the vast amount of historical material that has been published. Fortunately, a number of publications exist that carefully index scientific papers from thousands of journals. These services are known as secondary

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journals. They enable researchers to locate publications by author, title, subject and key words. Some secondary journals also provide a detailed abstract (or summary) of each paper. These abstracting and indexing services are expensive to purchase and will generally only be found in university and specialist libraries. Readers wishing to conduct an exhaustive literature search would be strongly advised to use two or more secondary journals. Although this approach will inevitably result in some duplication of references, it ensures that relevant publications are not missed.

The secondary journals most frequently used by entomologists are listed below; all provide varying degrees of coverage to world wide literature.

Biological Abstracts, published by BIOSIS

Biological Abstracts started publication in 1926. It now abstracts and indexes nearly 6500 scientific periodicals. One printed issue is published each fortnight and has author, biosystematic, generic and subject indexes. A cumulative index is produced every six months. As *Biological Abstracts* is very bulky in its published format, many researchers prefer to use the on-line or CD-ROM version.

CAB Abstracts, published by CAB International

Over 12 000 journals are scanned by CAB International to maintain two large bibliographic databases called CAB Abstracts and CAB Health. From their databases, CABI produce two printed abstracting services that are of particular interest to entomologists: *Review of Agricultural Entomology* and *Review of Medical and Veterinary Entomology*. The publications first appeared in 1913 under the titles *The Review of Applied Entomology Series A: Agricultural* and *The Review of Applied Entomology Series B: Medical and Veterinary*.

Review of Medical and Veterinary Entomology is published on a monthly basis. It provides full references, indexes and abstracts to publications concerned with insects and other arthropods that transmit diseases or are injurious to humans and domesticated or wild animals.

Review of Agricultural Entomology is also published monthly. It covers the world literature of insects and other arthropods that are pests of cultivated crops, forestry and stored foods. It also includes beneficial insects that are parasites or predators of pests.

These two publications benefit from offering very detailed abstracts. This helps entomologists to evaluate a publication before going to the time and expense of obtaining a copy.

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Science Citation Index, published by Institute for Scientific Information

Science Citation Index is published bi-monthly with an annual cumulation and is based on the contents of over 3000 leading scientific journals. It consists of four indexes, covering author, institution, subject and a citation index. The citation index is unique, as it enables a researcher to trace which authors are being cited in scientific bibliographies. This enables a researcher to answer questions that other secondary journals cannot address. For example, if a researcher has found a useful reference published in 1985, he or she could check which authors have subsequently cited this paper, thereby tracing the development of the topic forwards in time. *Science Citation Index* coverage for entomology is good but not comprehensive.

Zoological Record, published by BIOSIS and The Zoological Society of London

Zoological Record provides a detailed annual index to the zoological literature. Each year, one volume of *Zoological Record* is produced, consisting of 27 separately issued sections. Six sections cover the insects, General Insects and Smaller Orders, Coleoptera, Diptera, Lepidoptera, Hymenoptera and Hemiptera. Each of these sections has five very useful indexes enabling users to locate information by author, subject or geographical area, plus a palaeontological and a systematic index. The full bibliographic reference is provided in the author index. No abstracts are provided.

Entomologists often consider *Zoological Record* as purely taxonomic in content. Although this is a very important aspect of the work, it underrates its value as a broad entomological index.

The first volume of this monumental work (formally known as *The Record of Zoological Literature*) was published in 1865 and covered the world zoological literature for 1864. At present electronic records of the printed version are only available since 1978. Anyone conducting a thorough literature search covering the period before 1978 will need to spend time studying a large number of printed volumes.

On-line services and CD-ROMs

There can be no doubt that computerised information systems have revolutionised the whole process of locating entomological information. High-powered database systems and CD (Compact Disc) technology have combined to enable complex searches to be carried out. The results can leave the researcher deluged with almost too much data.

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In the late 1970s printed secondary journals like *Biological Abstracts*, *CAB Abstracts*, *Science Citation Index* and *Zoological Record* started to make data available on remote computer databases. These databases operate through commercial host systems. These 'on-line' searches are charged on a combination of time connected to the database and the number of references retrieved. Such systems require specialist training as the search language is not easily understood. Most searches are carried out by trained librarians on behalf of the researcher. On-line searching is rapidly becoming viewed as old technology. Many research and public libraries have now invested heavily in CD-ROM technology. CD-ROMs (Compact Discs Read Only Memory) are very similar to music compact discs except that they hold textual information and sometimes images. A huge amount of data can be stored on one disc, which can be searched using special software on a PC that has a CD-ROM drive.

Unfortunately, specialist CD-ROMs of interest to entomologists are very expensive, usually because the price includes a subscription to future updates, and are generally only found in research or specialist libraries. The great advantage of these systems is that users can quickly search for information and then browse through any interesting references at their leisure. There is no charge for time spent searching on the system or for retrieving information. References that are of interest can be either printed or downloaded onto disc.

A wide range of CD-ROMs is now available based on the information published in secondary journals. The following CD-ROMs are of particular interest to entomologists.

BIOSIS Previews

Based on data from *Biological Abstracts* but with additional references. Covers records since 1985.

CAB Abstracts

Records since 1972 available on CD. Other specialist discs produced by CABI include:

CABPest, crop protection and pest management literature since 1973

E-CD, environmental literature since 1973

Tree, ecology and management of forests since 1939

Soil, soils and land management since 1973

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Science Citation Index

CD-ROMs issued on a quarterly basis since 1980 but lack abstracts, also issued monthly since 1991 with abstracts.

Zoological Record

Records available on CD-ROM since 1978.

Internet services and the World Wide Web

The Internet is a global network of computers, connecting millions of users around the world. All one needs to join this network is a PC with appropriate software and a modem that links the computer to the telephone system. Individuals wanting to connect to the Internet also need an account with an Internet Service Provider. These are commercial companies which for a monthly or annual service charge provide access to the Internet. Many public libraries are now offering access to the Internet, and high street Cyber-cafes are now becoming popular.

Using electronic mail (e-mail), entomologists can now discuss projects, submit and edit publications, and arrange meetings with colleagues, around the world. All this can be done at a fraction of the cost and time of using traditional postal or telephone services.

The World Wide Web enables individuals and organisations to make information available to a global Internet audience. Text and images are structured into a series of files called Web pages. These pages then form a Web site. Any user around the world who has the appropriate software (called a browser) can access and read these pages. Web site addresses are known as URLs (Uniform Resource Locators). Once connected, it is easy to browse through the system. By clicking on highlighted words or images, the reader can jump from one web page to another. Special software packages called Search Engines exist, which help to locate relevant sites.

An increasing amount of useful entomological information is available on the World Wide Web. This includes information about entomological societies and institutions, updates on entomological projects, access to databases and library catalogues and details about books for sale from specialist booksellers. The Internet is still in a developmental stage and is an unstable structure. Information that is available one week may change address or disappear the next.

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The best way to search for entomological information on the Internet is to use a search engine using key words like 'entomology', 'entomological' or 'insects'. A large number of entomological sites already exist. Two of the most useful entomological URLs for finding more information on the Internet are listed below. If they cannot be found, you should use a search engine to relocate the site.

Iowa State Entomology Index of Internet Resources: a directory and search engine of insect-related resources on the Internet

<http://www.ent.iastate.edu/list>

Entomology at Colorado State University

<http://www.colostate.edu/Depts/Entomology/ent.html>

Joining an electronic mailing list or listserv can be an excellent way of getting into contact with people who share your interest, whether they live in the UK or overseas. People send messages to a central e-mail account; mail is then automatically forwarded to all the other list subscribers. Current information on mailing lists can be found on the above URLs.

Key references

Entomology libraries have in their reference collections a few works that answer most of the standard enquiries. Listed below are some of these key works.

General guides to information sources

Colvin, M. & Reavey, D. 1993. *A directory for entomologists* (2nd edn). The Amateur Entomologists' Society, Pamphlet No. 14.

A very useful small guide to sources of entomological information in the UK. Some details such as telephone numbers are now out of date. Includes information on national and local recording schemes, field courses, research grants, libraries, museums, trade fairs and traders.

Gilbert, P. & Hamilton, C.J. 1990. *Entomology: a guide to information sources* (2nd edn). Mansell, London.

Although some sections are becoming rather out of date, this is still a good guide to entomological information. It includes sections on naming and identification of insects, specimens and collections, the literature of entomology, searching and locating literature, keeping up with current events, and entomologists and their organisations.

Hamilton, C.J. 1991. *Pest management: a directory of information sources*. Vol. 1, *Crop protection*. CABI, Oxon.

A useful reference work providing sources of information on crop protection.

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Checking early references

Zoological Record is invaluable for verifying and finding references. For checking publications before *Zoological Record* started in 1864, the following references are particularly useful.

Hagen, H.A. 1862–3. *Bibliotheca entomologica*. 2 vols. W. Engelmann, Leipzig.
 An alphabetical index by author from earliest times to 1862. Also includes a useful subject index. A very reliable source of bibliographic references.

Horn, W. & Schenkling, S. 1928–9. *Index litteraturae entomologicae*. Ser. I, *Die Welt-Literatur über die gesamte Entomologie bis inklusive 1863*. 4 pts. W. Horn, Berlin. Similar to Hagen but includes additional references. Does not have a subject index. Additional supplements by Gaedike, R. & Smetana, O. *Ergänzungen und Berichtigungen zu Walter Horn und Sigmund Schenkling: Index Litteraturae Entomologicae, Serie I, die Welt-Literatur über die gesamte Entomologie bis inklusive 1863*. *Beiträge zur Entomologie* (1978) 28: 329–436, and (1984) 34: 167–291.

For checking entomological works published between 1864 and 1900 the following works are useful sources.

Derksen, W. & Scheiding, U. 1963–75. *Index litteraturae entomologicae*. Ser II, *Die Welt-Literatur über die gesamte Entomologie von 1864 bis 1900*. 5 vols. Deutsche Akademie der Landwirtschaftswissenschaften, Berlin.
 Volume 5 includes a list of abbreviated periodical titles and a subject index.

Freeman, R.B. 1980. *British natural history books: 1495–1900 A handlist*. Dawson and Archon Books, Folkestone and Connecticut.
 This contains an alphabetical list by author, a list of titles in date order from 1495 to 1800 and a subject index.

Nomenclators

A common need is to find the reference that contains the original description of an insect genus or species. The following references are key works in this area:

Neave, S.A. 1939–40. *Nomenclator zoologicus. A list of the names of genera and subgenera in zoology from the 10th edition of Linnaeus 1758 to the end of 1935*. 4 vols, plus supplement. Zoological Society of London, London.
 Later volumes have also been published under this title, volumes 5–9 (1950–96) including names listed up to 1994. This work provides the bibliographic reference for every generic and subgeneric zoological name described. Section 20 of the *Zoological Record* also provides a list of new taxonomic names.

Sherborn, C.D. 1902. *Index animalium 1758–1800*. Cambridge University Press, Cambridge.
 Provides a list and reference to all zoological generic and specific names described between these dates.

Sherborn, C.D. 1922–33. *Index animalium 1801–1850*. 33 parts. British Museum (Natural History), London.
 Continues the above work up to 1850.

Glossaries

Nichols, S.W. (Compiler) & Schuh, R.T. (Ed.) 1989. *The Torre-Bueno glossary of entomology*. New York Entomological Society and the American Museum of Natural History, New York.
 Provides definitions of entomological terms.

Biographical and manuscript resources

- Bridson, G.D.R., Phillips, V.C. & Harvey, A.P. 1980. *Natural history manuscript resources in the British Isles*. Mansell and Bowker, London and New York.
 An annotated bibliography guiding researchers to sources of original manuscript material. Includes indexes to name, place and subject.
- Gilbert, P. 1977. *A compendium of the biographical literature on deceased entomologists*. British Museum (Natural History), London.
 A good source of references to biographical information about entomologists.
- Harvey, J.M.V., Gilbert, P. & Martin, K. S. 1996. *A catalogue of manuscripts in the Entomology Library of The Natural History Museum, London*. Mansell, London.
 Lists entomological manuscripts, collecting notebooks, diaries and correspondence held in The Natural History Museum. Contains biographical information and author and geographical indexes.

Bibliographic references

There are very few guides that explain how to interpret bibliographic references. Modern publishing practice encourages authors to provide full and complete references in their publications. Authors should aim to provide references that give all the information necessary to trace and obtain a copy. However, some references, especially in older works, can seem incomprehensible to many people.

This section has two aims: to explain the format of standard references and to discuss possible causes of confusion.

Understanding references

Many amateur entomologists are surprised at the great variation in the way references are listed in different publications. On occasions it can even be difficult to decide whether a reference describes a book or a journal publication.

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References to books

A simple reference referring to a book may appear similar to the following example.

Gauld, I.D. & Bolton, B. (Eds) 1996. *The Hymenoptera*. Oxford University Press, Oxford.

The authors normally appear first in the reference, as surname followed by initials. In most publications a maximum of three authors are listed. If more than three authors are involved in a publication, the first author is normally given followed by the Latin abbreviation *et al.*, meaning 'and others'. In the above example, the authors have edited the work. This is shown by the abbreviation (Eds). The date of publication may appear in a range of positions in the reference, sometimes in round brackets. The title of the book can be indicated by a number of different methods: italics, underlining, boldface or sometimes a different font size. (This may be followed by the number of pages, known as pagination. Roman numerals show the number of preliminary pages, which may include the title page, contents, acknowledgements and a preface.) The pagination will indicate how large the work is, and may help to indicate the level of detail. It is now standard practice to include the publisher and place of publication. This will assist the reader in acquiring a copy from a library or bookseller. The ISBN (International Standard Book Number) does not appear in a reference.

A more complex reference to a book might appear as:

Agassiz, D.J.L. 1985. *Douglasiidae*. In Heath, J. & Emmet, A.M. (Eds) *The moths and butterflies of Great Britain and Ireland* **2**, pp. 408–9. Harley Books, Colchester.

In this example the author, Agassiz, has contributed a section on *Douglasiidae* in a work edited by Heath and Emmet. The work, *The moths and butterflies of Great Britain and Ireland*, has been published in a series of volumes (known as a monographic series). This reference refers to volume 2, which is indicated in bold type. In such references the pages written by the contributing author (pp. 408–9) are usually noted. The full pagination of the book is sometimes also given.

References to journal papers

A great deal of specialist entomological literature is published as papers in scientific journals. Journals are also known as periodicals or serials. Any serious entomological study will result in the need to refer to papers published in a wide range of journal publications.