

MALACOLOGICAL LITERATURE ON THE INTERNET

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There is an explosion of malacological literature in digital format freely available to anyone via the internet. After increasing slowly for several years, the growth has accelerated at an astounding rate in recent months. The expansion exceeds any individual's ability to keep up, due in large part to the failure of indexing and retrieval tools to keep pace. It can be annoyingly difficult to find what is available. The "Internet Library" needs a librarian!

The contents of the great libraries are rapidly becoming available to everyone everywhere in the world. This democratization is obviously a boon to students in the third world. It is equally useful to any of us who do not live within easy commuting distance of a major academic library. Where is all this digital literature coming from? The sources are diverse. Major projects such as Google Books, the Internet Archive, and the Biodiversity Heritage Library project are digitizing the classic literature. Numerous smaller efforts by libraries and museums, online journals, societies and clubs, and an army of individuals, both professional and amateur, contribute both contemporary and older titles.

Google Books has been the elephant in the room, with an estimated two to six million books. Its motivation is commercial, a vehicle for "capturing eyeballs" for advertising and book marketing. Its declared objective is to scan "everything" in a consortium of academic and public libraries. Unfortunately, quality has been sacrificed in the pursuit of raw quantity. The text is usually legible, though pages are sometimes skipped. The quality of plates vary from barely adequate to useless. Indexing metadata is inadequate. Coverage is often spotty and availability of titles is unpredictable. Other resources are now making it largely irrelevant – the source of last resort.

Internet Archive is non-profit, receiving support from foundations and contributors. Its holdings of 1.2 million volumes have benefitted from numerous sources, including the fruits of an abandoned Microsoft digitization project.

It also benefits from the ambitious Biodiversity Heritage Library project, which is vastly increasing available biological literature in digital format. The quality of their PDF (Portable Document Format) files is good, with some exceptions. Original photos of the book pages are generally available in JP2 format. Their indexing of metadata is uneven, so locating a specific volume of a journal or multi-volume work can be cumbersome and time consuming.

The Biodiversity Heritage Library is a new project of ten major institutional libraries. The British Museum (Natural History), Smithsonian Institution, American Museum of Natural History, Field Museum of Natural History, Harvard, and the Woods Hole Marine Biological Laboratory, among others, are collaborating to make their combined holdings available. Their efforts are now available on the Internet Archive and the project's own site, biodiversitylibrary.org. The quality of PDF files is identical to Internet Archive. Original page images are available and the indexing is excellent. They currently report 27,500 volumes online. In time, this resource will likely surpass the others as best for malacological research.

Libraries and Institutions are frequently making selected works available online. A few examples are:

- National Library of New Zealand: Transactions and Proceedings of the Royal Society of New Zealand for the years 1868-1961. Specific papers may be downloaded individually.
- Bibliotheque nationale de France Gallica project (Gallica.bnf.fr) offers a diverse selection of works. Unfortunately the quality of many documents is poor, the result of producing digital images from microfilm. Coan, Kabat & Petit, 2008, note many titles available from Gallica.

¹ Adapted from a presentation at the SCUM Meeting (Southern California United Malacologists) at California State Polytechnic University, Pomona, 24 January 2009.

- Smithsonian Institution/NMNH has many publications online but finding them can be challenging. These will presumably find their way into the Biodiversity Heritage Library. Their author index is useful.
- American Museum of Natural History: AMNH Novitates, Bulletin and Memoirs.
- Natural History Museum of Los Angeles County: Selected LACM Contributions in Sciences.

Online Journals are burgeoning. Some are available by subscription only, while others are free. Most major journals are now available online in digital format but require access through a subscribing institution, usually restricted to on-campus use.

There are now hundreds of free online journals, some of malacological interest. A good source of information on these is "Directory of Open Access Journals" (DOAJ.org). A few examples are –

- Acta Geologica Polonica
- Aquatic Invasions
- Comunicaciones de la Sociedad Malacologica del Uruguay
- Gayana – Universidad de Concepción, Chile
- Raffles Bulletin of Zoology, Singapore

Societies and Clubs Most malacological societies now have their meeting abstracts online. Many also have other works of interest to their members –

- American Malacological Society: Coan, Kabat & Petit, 2008. 2,400 years of Malacology
- Internet Hawaiian Shell News
- Società Italiana de Malacologia: Notiziario S.I.M.; Lavori del Gruppo Malacologico Livornese; etc.
- Houston Shell Club: Texas Conchologist (forthcoming)

Individuals Hundreds of people have websites with digital reprints of their own papers or papers reflecting their malacological interests. Here are a very few examples:

- Daniel Geiger – vetigastropoda.com
- Arie Janssen – Fossil Mollusca of Western Europe; Holoplanktonic Mollusca
- Steve Long – Opisthobranch Newsletter
- Stefano Palazzi – BioSophia, an archive of separates in many fields
- Mikhail Rogov – Jurassic of Russia – This site is spectacular for the vast number of PDF papers made available on this and related areas and subjects.

Examples of the sorts of literature now available over the Internet –

- Reeve and Sowerby's *Conchologia Iconica* – 20 volumes, color, [Set lacks volumes 4 and 13].

- Tryon and Pilsbry's *Manual of Conchology* – 35 volumes, including sets with colored and uncolored plates.
- *The Nautilus*, volumes 9-117
- *Annales de la Societe (Royale) Malacologique de Belgique*
- *Occasional Papers on Mollusks*
- *Annals and Magazine of Natural History*
- *Proceedings of the Zoological Society of London*
- *Journal, Proceedings, and Transactions of the Linnean Society of London*
- *Proceedings of the Royal Society of Victoria*
- *Transactions of the Royal Society of New Zealand*

Some taxonomic and bibliographic references of use to malacologists –

- Sherborn, *Index Animalium* (PDF in 33 parts), also available as an online database.
- Ruhoff, 1980. *Index of mollusks published 1850-1870*.
- Neave, 1939-1950. *Nomenclator Zoologicus*. PDF version not found, but there is an online database, with additions to 2004.
- Earlier nomenclators available in PDF include Agassiz, 1842; Marschall, 1872; Scudder, 1882; Waterhouse, 1904.
- British Museum (Natural History) *Catalogue of Books, 1903-1940* – 8 vol.
- British Museum (Natural History) *Catalogue of Serials, 1980* – 3 vol.
- Zoonomen – Alan Peterson – Website with major compilation on dates of publication available at zoonomen.net/cit/joura.htm - [jourz.htm](http://zoonomen.net/cit/jourz.htm)
- Coan, Kabat, Petit, 2009. *2,400 Years of Malacology*

Summarizing the Downside These works can sometimes be hard to find, even if you know they are available on the Internet. Search engine results are frequently not complete, reliable or repeatable. As an example, Ralph Arnold's *Paleontology ... of San Pedro*, *Memoirs, California Academy of Sciences* vol. 3, 1903, could not be found on the internet by author, title or journal, but the reprint was there, as volume 31 of "Contributions to Biology" from the Hopkins Seaside Laboratory of the Leland Stanford Jr. University. (This was true when the SCUM presentation was drafted. Now "Memoirs of the California Academy of Sciences" vol. 2 to 6 are available at BiodiversityLibrary.org.)

Despite the phenomenal growth of malacological literature on the Internet, the odds are that any specific title is not (yet) available. Good humor and a high tolerance for frustration are desirable qualities when

seeking literature on the web. Serendipity plays an important role - one often finds an item of interest by fortuitous accident while searching for something else entirely.

Now you see it – now you don't

In addition to the above mentioned difficulties with search engines

- Documents may be removed from websites.
- Websites may break or be restructured, leaving portions inaccessible or difficult to find.
- Websites may move or just disappear.
- Web servers may be unreliable, especially in the third world; even major western sites suffer technical difficulties and overloading that may make documents unavailable for extended periods.
- Google Books often changes a document's status, making previously available books unavailable.

Moral of the Story

- Do not count on anything you find on the Internet being available the next time you look for it.

- If you think you may need a book or paper again, SAVE A COPY.

- External computer disk storage is incredibly cheap, pennies per gigabyte. Take advantage of it.

Start your own e-Library

- Keep the files you download organized so they are easier to find on your computer than on the Internet.
- Use the original file name (except for Google) and note where the file came from to avoid duplication.
- One easy way to do this is to make a separate folder for each document, labeled with the journal title or author, date, and perhaps a short title.

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**Program and Events for the
2009 Western Society of Malacologists Annual Meeting
California State University, Fullerton (CSUF)
June 23-27, 2009**

Meeting Schedule and events

June 23	Tuesday	Day - Workshop on micro-mollusks led by Daniel Geiger. Evening - Opening Reception (with snacks and beverages).
June 24	Wednesday	Talks and poster session.
June 25	Thursday	Morning - Workshop on bivalves led by Paul Valentich-Scott. Afternoon - Talks.
June 26	Friday	Morning - Talks including Molluscan Conservation Symposium led by Hans Bertsch. Late Afternoon / Early evening - Auction and reprint sale (with snacks and beverages). Early evening: Conferencia Magistral (Keynote Speech) by Hans Bertsch.
June 27	Saturday	Field trip to Santa Catalina island (all day).

Registration and abstracts are both due on April 30, 2009. *Exact meeting place on the CSUF campus to be determined. For more details and specific directions go to: www.diversiforma.com*