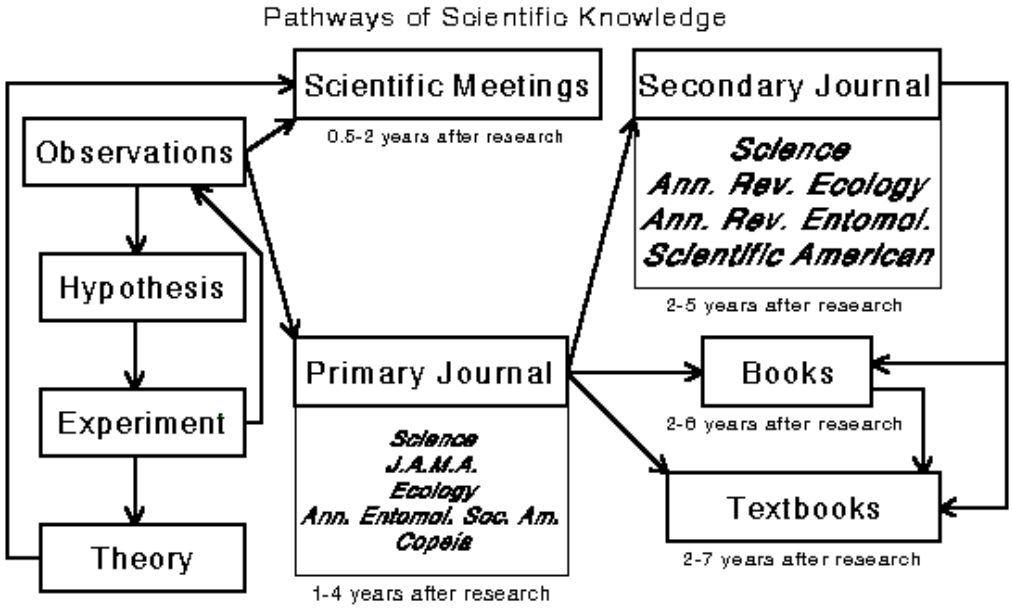
Primary Sources and the Pathways of Scientific Knowledge

What is a primary source, and what's all the fuss about? A primary source is one written by the person who has uncovered new knowledge - who has made a new observation or conducted an experiment (and thus didn't have to cite it when writing it up). As you can see from the diagram below, a primary journal contains the most recent, up-to-date *written* information. The stuff in books and textbooks may be up to ten years old, and may have been superseded by subsequent studies. Also, the material in most primary journals is subject to peer review - that is, review by other scientists for scientific (as opposed to editorial) accuracy.



Note: A texbook published in 1990 will at best contain research done in 1988.
Scientific knowledge in biology is doubling every 4 years!

The problem with primary sources is that they are written by specialists, for specialists, and appear in many different journals, some of which are hard to come by. Secondary journals help with this problem by consolidating information on a given topic. Such articles are usually written by experts in a field, but often are written for non-specialists or even lay people; most all are carefully referenced. The price is timeliness. Books consolidate matters even further. Many conform to strict citation of sources, but some do not, making it difficult to backtrack to original papers. Textbooks are in the same boat. While you may find useful information in non-technical sources (*Time* magazine, *U.S.A. Today*, etc.), these rarely cite their sources and are thus scientific hearsay - inadmissible in court, so to speak. The same for encyclopedias, comic books, the little books that come with insecticides, and so on - yes, even your trusty biology class notes.