

science. Either object is commendable, neither should be ignored, and both should be fostered. When the seeker after knowledge has a definite purpose that topic becomes for the nonce the structure to be erected out of the intellectual elements quarried from all sources. The more copious the reading, the oftener the work is trimmed, the richer will be the scholarship and the more refined will be the output. With the fundamental facts and principles as tools, his workshop is in the library, where he seeks the reference to experimental details or the deductive processes of reasoning that led to the results incorporated in the several branches of his research. To this end monographs will best aid him, for they contain not merely the text matter but also copious references and lists of correlative publications to date. Fortunate indeed would be the student if such a work is found, for the burden of the investigation has been assumed by the author, although he loses the enjoyment of compiling his own bibliography. This paper is, however, intended for the one who is to have this delightful experience.

Naturally his first thought is to the library guide, wherein he will find the numerical classification of the subjects he is studying. By consulting thence the card case catalogue under the appropriate titles he will find a card for each publication in that line which is to be had from the shelves of the library. A similar card catalogue is found prepared for authors, with many of whose names the text-books have made him familiar. If the names of writers upon the given subject are known, time will often be saved by going at once to the author catalogue for the titles of all his publications. He may also find in the index of technical literature published in Minneapolis, 1891, the names of authors and titles of works in American Engineering, the name of the compiler of which has escaped me now.

For more recent data recourse must be had to the transaction of the American Institute of Mechanical, Electrical, Civil or Mining Engineers. Each society has an index to the annual volumes and a grouped index every ten years, the same being comprehensively classed under author, title of brochure and sub-topics. By a systematic search the development of any subject or investigation may thus be traced and, though it is well to examine the entire index for all cognate subjects, frequently the search is facilitated by pursuing a certain list of authors who are known to