

evaluation of it to determine what portion will be retained. The historian of science and technology likely will have an insatiable appetite and will think that every scrap should be preserved. Unfortunately, as a practical matter this is rarely possible from either space or financial considerations, and, therefore, some selection must be made. Recognizing this problem, Brichford points out a number of aids in evaluation on which an archivist might draw to supplement his own knowledge. One of these aids is the use of bibliographies, and, to meet this need, Brichford plans to publish annotated bibliographies for general works on the history of science and technology and twenty-nine specific fields. Included in this next study will be a list of persons associated with scientific and technological archives who may be consulted by the archivist having problems evaluating scientific documentation.

In the long run, the function of an archive is to preserve and to make available historical material. In this respect the archivist can greatly influence the quality of the written history by his selection of documents to be retained. To this end Brichford outlines some of the problems of interest to historians of science and technology and the types of questions they might ask. He tries to make archivists aware of the research uses to which their collections might be put, which is all an historian can ask until the day comes when a combined program is presented giving training both in archival management and the history of science and technology.

About a quarter of this volume is a well-annotated bibliography of works pertaining to archival management. The sixty-one titles are conveniently broken down into ten subject areas pertinent to an archive of technical material.

If Brichford's suggestions are taken to heart there should be an increased awareness on the part of the university archivist of the scientific and technological documentation which is his responsibility. If so, the percentage of collections in the *National Union Catalog* in these subjects will be increased, and thereby the archivists will be doing a great service to historical scholarship.

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Catalog of Meteorological Instruments in the Museum of History and Technology. By W. E. Knowles Middleton. Washington, D.C.: Smithsonian Institution Press, 1969. Pp. 128; illustrations. \$3.25.

This book, as the name indicates, is a catalog of meteorological instruments currently held at the Smithsonian Institution. The instruments are divided into ten categories: barometers and barographs, thermometers and thermographs, instruments for the measurement of atmospheric humidity, instruments for the measurement of precipitation and

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evaporation, instruments for measuring surface wind, sunshine recorders, nephoscopes, upper air instruments (not telemetering), radiosondes, and miscellaneous meteorological instruments. For each of the categories, Middleton starts with a short summary of the history of the development of the instrument, and then goes on to describe briefly the various types of instruments that are now in the Smithsonian collection. The more interesting or important instruments are described in the text and are set apart typographically, which, however, allows the reader to follow the narrative uninterrupted. The instruments not mentioned in the main text are listed at the end of the chapters.

Like other works of Middleton on the historical development of meteorological instruments, this volume is very well researched. There are, however, certain minor defects which are rather irritating. For example, each chapter begins with a short history of the development of the instrument, but they are listed as such in the table of contents only in the case of two chapters: under "Barometers and Barographs" as "Invention of the Barometer," and under "Thermometers and Thermographs" as "Early History." Thus, the book lacks a certain amount of uniformity.

The information on early history of the developments of the instruments is not always up-to-date. For example, in chapter 5, "Instruments for the Measurement of Precipitation and Evaporation," the author refers to Hellman's work on the subject which was published as early as 1920, and states that Hellman concluded that "it [the rain gauge] was invented independently in India (4th or 5th Century B.C.), Palestine (A.D. 1st or 2nd Century) and Korea (A.D. 15th Century)." This statement is only partly correct. The Korean rain gauges, like most Korean astronomical instruments, were either imported from China or copied from the Chinese types. Use of rain gauges in China can be traced back to at least as early as A.D. 1247. As regards the Palestinian development, it took place somewhere between the earlier half of the 2d century B.C. to the close of the 2d century A.D. (see, for example, Asit K. Biswas, "Development of Rain Gages," *Journal of the Irrigation and Drainage Division, American Society of Civil Engineers* 93, no. IR3 [September 1967]: 22-124).

Apart from these minor errors, the book is definitely going to be welcomed by all hydrometeorologists, although the absence of an index is a definite handicap.

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