Garden on August 13 to consult with Dr. B. O. Dodge and members of the laboratory staff of the garden on further activities of the committee.

PROFESSOR ROY S. SWINTON, on leave of absence from the University of Michigan, will join the faculty of the University of the Philippines in Manila, P. I., for a year. Professor Swinton, who was at the University of the Philippines from 1911 to 1913, will advise the university on the installation of a new mechanics and hydraulics laboratory.

THE tenth International Congress of Dermatology and Syphilology will be held in New York City in September under the presidency of Dr. Oliver S. Ormsby. Dr. Paul A. O'Leary, of the Mayo Clinic, Rochester, Minn., is executive secretary.

THE twenty-third annual meeting of the American Society of Ichthyologists and Herpetologists was held in Toronto from September 2 to 4. Sessions were held at the Royal Ontario Museum of Zoology. There was an "open house" in the Biological Building of the University of Toronto on Monday evening. The annual dinner was held in Hart House. On the last day of the meeting there were joint sessions with the American Fisheries Society.

THE National Advisory Cancer Council at a meeting on June 25 at the National Cancer Institute in Bethesda, Md., awarded grants for research on cancer: Washington University School of Medicine, St. Louis, $16,000; Memorial Hospital for the Treatment of Cancer and Allied Diseases, New York, $3,300; Barnard Free Skin and Cancer Hospital, St. Louis, $5,000; University of California Medical School, San Francisco, $5,000, and American College of Surgeons, Chicago, $5,900. Among reports presented at the meeting was a special one on protection of personnel working in cancer clinics against injury from exposure to radium, x-rays and neutrons, by Carl Voegtlin, chief of the cancer institute.

THE Newark Museum has received from Louis Bamberger, of South Orange, a gift of new exhibits and study equipment for the science department. The new material, most of which will be specially designed and made to order, will be ready for installation later this autumn, according to Miss Beatrice Winser, director of the museum. Mr. Bamberger is vice-president of the Board of Trustees. Among the exhibits and equipment acquired through the Bamberger gift are an electrically operated model of the solar system on which the planets move in related speed to one another, a fluorescent mineral room where ultra-violet lamps bring out hidden qualities and colors in minerals; a model of a drop of pond water magnified two hundred and fifty times to show microscopic plant and animal forms, two microscopes and a microprojector together with a number of slides; a series of working models illustrating the structure of the human body, and an "illusion exhibit machine" which performs such miracles as apparently reducing a duck to its skeleton or changing a weasel from summer brown to winter white. The new material will be installed as received and a formal opening of the science department with an entirely new set-up will be held later in the autumn.

COMMANDER F. W. REICHELDERFER, of the U. S. Weather Bureau, has made a statement to the effect that only three institutions in the country now have an advanced meteorological course, and these have each graduated from ten to twenty men a year. Most of the men have been Army and Navy officers sent there by the military service. There have been only about ten to twenty men each year for civilian occupations. This is due to the fact that the opportunity for employment has been limited. However, he states that the new five-day weather forecasting system, initiated recently by the Weather Bureau, is creating a demand for meteorologists.

AN Associated Press dispatch states that construction of a $1,250,000 addition to the plant of the Spencer Lens Company, Buffalo, N. Y., to provide facilities for national defense production, started on September 3. Burton H. Witherspoon, president of the company, states that production facilities have been increased about 50 per cent. and employment has been raised from 1,000 workers to 1,600.

Nature states that Dr. Charles Slater, consulting bacteriologist to St. George's Hospital, London, who died on March 15, bequeathed £10,000 to St. George's Hospital for teaching bacteriology or research work in that science, £5,000 to the University of Manchester for the equipment and maintenance of the laboratories and £4,000 to the University of Cambridge for teaching or research work in medical science.

DISCUSSION

THE FIRST THOUSAND MATHEMATICAL WORKS PRINTED IN AMERICA

THE University of Michigan recently published a volume (xxvi + 697 pp.) entitled "Bibliography of Mathematical Works Printed in America through 1850," edited by Louis C. Karpinski, with the cooperation for Washington libraries of Walter F. Shenton. This book is especially useful to librarians, but it is also of interest to students of the early development of mathematics in the Americas. In fact, on

page xi it is stated that "these illustrations constitute a pictorial history of American mathematics through 1850 on a scale that has not before been attempted with any similar group of American imprints." While mathematical history and mathematical bibliography have much in common their fundamental objectives usually differ widely, and the present work is a bibliography as its title clearly indicates.

A difference between the objectives of a mathematical history and a mathematical bibliography was stated emphatically by the well-known former writer on the history of mathematics, Moritz Cantor (1829–1920), at the International Congress of Mathematicians held at Paris, France, in 1900 and reported in the *Bulletin of the American Mathematics Society,* volume 7, by Charlotte A. Scott (1858–1931), then at Bryn Mawr College. In passing over many minor writers on the subject he remarked "tous aussi morts que leurs livres; gardons—nous de les ressusciter." Probably most historians of mathematics would not be in full accord with this dictum, notwithstanding the great reputation of its author. On account of the vastness of the material with which the modern mathematical historian has to deal it frequently becomes necessary to confine the attention at first to what appears to be most important, and in doing this the first thousand mathematical works printed in America would usually not receive much attention.

While the work under consideration lists only about one thousand different publications without counting different editions of the same work, when these are counted the number of the listed publications is nearly three thousand. As might be expected most of them are text-books which were usually based on more extensive and in most cases better foreign publications. It is interesting to note that the early Spanish publications usually deviated more from their source material than those which appeared in the English language. The earliest work noted is the "Sumario" by Juan Diez Freyle, which was printed in Mexico in 1556 but is much inferior to the well-known "Ars Magna" published by the Italian mathematician, H. Cardan, about eleven years earlier. Various other earlier European mathematical publications are also superior to this earliest known mathematical work printed in America.

In an appendix the author deviates from the title of the work under consideration by treating briefly native American mathematical developments (pp. 607–611). These native developments are much inferior to those made by the Babylonians more than three thousand years before Columbus discovered America. In particular, the Babylonians solved at that early date certain quadratic equations in the sense that they found at least one root of such an equation by methods which are still being used by our high-school students. Much has been written about the ancient Mayan and the ancient Peruvian mathematics, but most of this relates to their methods of representing numbers and exhibits very little mathematical insight in comparison with much older developments in Babylon and in Egypt.

While this volume revives many authors who were as dead as their books it will doubtless be welcomed by the librarians and also by many others who are interested in the early development of mathematics in our country even if the destruction of all these books would not diminish materially our mathematical knowledge. Many will find pleasure in verifying for themselves the lack of originality in the material of nearly all these works and will thus be more impressed by the very slow growth of our modern mathematical knowledge. The abstract form of this knowledge has become so widely useful in our age as a result of the great scientific advances which have demanded continually greater brevity in our statements as regards exact situations.

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PRACTICAL SUGGESTIONS FOR REDUCING THE LABOR OF INDEXING A TEXT-BOOK

INDEXING is an individualistic task which varies with the type of book concerned. While there are no fixed rules, the general principles outlined in this article may be found of assistance to medical and other authors who wish to index their own texts.

Indexing technique must be flexible and allow expansion and rearrangement of entries in order to allow re-use of original drafts of entries when preparing the index of a revised edition. Since each entry must be separable, either individual slips of paper or file cards are customarily used for each entry. The use of letter size sheets of paper each ruled horizontally into four sections—one section for each entry—reduces the number of insertions required in typing.

The selection of subjects and of index entry words requires judgment based on knowledge of the subject, and is improved by some knowledge of indexing. Words which are to be used as leading words of index entries should first be checked *by the author* on the printer's page proof of the text. When the desired leading word does not occcur in the text, it should be written in the margin of the page proof at the proper place.

In deciding upon subjects to be indexed and wording of entries, the author must take into consideration whether the book and index are for the general reader or for the expert. He must also decide whether to