many mute inglorious Miltons, and even by the work of other famous men. Dr. William Beaumont laid a basis of our understanding of digestion by his observations on Alexis St. Martin, who had a stomach fistula due to a wound. The astounding Leonardo da Vinci aided anatomy and physiology by his precise observations and drawings. Scientific principles emerged from attempts to understand and explain observations. There is usually a delay in their emergence, and they may be modified by later knowledge.

"Pure" science is no quintessence which can be sublimated from the mass of observed facts without destroying or garbling the truth. Most scientific "laws" have exceptions, and the duty of scientists is to take broader rather than narrower views, so as to understand the very real coherence of natural phenomena, whether the knowledge is immediately useful or not, and irrespective of the calling (business, trade, profession) of the observer or explainer. Mr. Stern should be proud to be a professional man, for this term is applied to the more learned callings (theology, law, medicine, physics, chemistry, engineering), where some form of diploma or license from a competent examining body is generally demanded to protect the public, employers and other professional men from imposters and incompetents. Scientists know how to gauge and to classify their diverse fellows, and do so successfully.

As I understand the views of the British Society for Freedom in Science, it opposes the domination of scientific thought and activities by any group, especially through legislation framed by well-meaning but unscientific, warped or incompetent politicians who would regiment scientists. Despite the assertion of Lord Stamp, men of science are often "on top" as well as "on tap." Donald Nelson is a chemist; so is James B. Conant, and so was Charles Eliot, his predecessor as president of Harvard. Karl T. Compton and R. A. Millikan are physicists. Antoine Lavoisier, Benjamin Franklin and Benjamin Thompson (Count Rumford) are examples of what scientists have done in the field of politics. Men tend to gravitate to the positions where they are most useful. The great and increasing importance of science is opening many doors to those scientifically trained, especially if their training has been broad and human.

JEROME ALEXANDER

NEW YORK, N. Y.

I SHOULD like to discuss briefly some of Dr. Pearson's comments on my paper, as it concerns the nature of science. At a time when there is some cause for apprehension concerning the future of science it is essential to know what it is we are talking about. Dr. Pearson states that "one would conclude that Mr. Stern considers that 'pure science' is only metaphysics and excludes experimental and perhaps even theoretical science, if it is useful." I would no more consider pure science to be metaphysics than Dr. Pearson would consider applied science to be applied metaphysics. But I do state that science has nothing to do with usefulness. A scientific theory may be verified in the laboratory and not put to use thereafter, and it would still be part of the accepted body of science. And then there is the science of astrophysics, or would Dr. Pearson call it metaphysics?

Dr. Pearson has also stated that "the nature of science is the very essence of the practical." Does he believe that the researches of Faraday and Maxwell would lose any of their scientific value if no use were made of them? Does the scientific validity of the Bohr-Heisenberg Uncertainty Principle depend ultimately on whether some gadget can be made embodying this principle? Will the experimentally established phenomena of the fissure of uranium become part of science only when it is taken out of the laboratory and its principles incorporated in some rocket bomb? On the contrary, there is some justification for the belief that the growing socialization of science involves serious dangers to it. One must be alert and guard against scientific research degenerating into rubber, oil, textile, military—research. Such routine industrial research would ultimately destroy the adventure that is science. Fundamental investigations such as on the nature of the elementary particles, the relationship between field and matter, relativity and the universe, the study of extremely high energy particles in cosmic rays, the question of the production of multiple showers in one elementary act—would recede to the background. The pure science of physics whose study gives us a deeper insight and understanding of the ultimate constituents of the universe—matter and energy—may disappear. The desire to get at the nature of things would give place to the desire to make "better things." Thus, the age of scientific enlightenment and culture may be succeeded by an age of technology, where comfort replaces culture, and mankind replaces man. Science must be kept free, not because of the material comforts and riches it will bring us—that technology can do—but for the very preservation of our civilization.

ALEXANDER W. STERN

BROOKLYN, N. Y.

CEMENTING SINO-AMERICAN FRIENDSHIP

IN July, 1942, I published in SCIENCE under this same title the suggestion that scientists save unwanted reprints for eventual use in rehabilitating destroyed Chinese libraries after the war. The next month in the same periodical Wayne M. Hartwell, executive assistant to the Committee on Aid to Libraries in War Areas of the American Library Association, offered to

assist in caring for reprint material dedicated to this use which the donors were themselves unable to store until after the war. This committee is especially concerned with the receipt of full and partial sets of periodical literature for all war-torn libraries, but is in full accord with my suggestion concerning the saving of unwanted reprint material, especially for Chinese libraries. Several organizations and many individuals are working toward this same general objective of anticipating the needs for reconstruction of libraries in the devastated areas. The greatest obstacles in their programs seem to be the lack of present storage space and of personnel to handle the accumulating material. These difficulties are slowly being overcome, but as yet there are only limited facilities for receiving material, except where the donor is faced with the choice of turning it in for the post-war reconstruction program or for the current waste paper collection. It is, however, hoped that there will soon be an extensive drive for literature for this purpose, and it is in this connection and with the approval of the present executive assistant, Dorothy J. Comins, of the above named committee of the American Library Association with offices at the Library of Congress, and of Charles H. Brown, the chairman of their Committee on the Orient and Southwest Pacific, that I am issuing this reminder of the need for saving reprint literature.

Daily reports of bombing, burning and looting on the far-flung battle-fronts give strength to our worst fears of wide-spread destruction of valuable libraries. Thus the future demand for reprints, both currently appearing and of earlier date, is sure to be urgent and all should anticipate the need. Besides the demands from war-destroyed libraries we may justly anticipate the similar needs of new institutions which are being established and which will be built after the war with an ever-increasing crescendo as a result of the war-time stimulus toward scientific development. Although current scientific and technical periodicals are being purchased and laid aside for the reconstruction program, it is impossible to provide for all needs even in the near future. Hence, some destroyed libraries will welcome reprint material to represent the serials of which they will be unable to obtain full sets. Of course one should not confine one's efforts to saving only reprint literature, for all worthy periodicals and separate books will be needed. Broken sets of serials, and those which have been partially mutilated by removal of articles of special interest, can be used in completing other partial sets. Reprints are often considered by their owners as so specialized that, unless they are of immediate interest, they may as well be thrown away. A comprehensive program of collecting and distributing literature, such as is projected, will lead to their eventual arrival where they can be of value. Hence scientists should continue to save their unwanted literature for the peace-time reconstruction of war-torn libraries until they can be gathered together and properly handled in a coordinated program.

EGBERT H. WALKER

SMITHSONIAN INSTITUTION

AMERICAN SOCIETY OF PARASITOLOGISTS

THE report of the meeting of the Cleveland meeting of the American Association for the Advancement of Science which was published in the October 27 issue of SCIENCE erroneously stated (page 270) that the American Society of Parasitologists canceled its entire meeting. The society canceled its sessions at which general papers were scheduled to be read, but continued with its symposium on "Parasitology in Relation to the War" which it held jointly with the American Society of Zoologists and the Section on Medical Sciences. The program of this symposium is given in full in the report of the Cleveland meeting.

Following the symposium, the American Society of Parasitologists held a general business meeting, at which Asa C. Chandler, Rice Institute, was elected president for the year 1945 and Donald L. Augustine, Harvard University, was elected vice-president for the same term.

F. R. MOULTON,
Permanent Secretary

SCIENTIFIC BOOKS

TABLES OF BESSEL FUNCTIONS

A Guide to Tables of Bessel Functions. By HARRY BATEMAN and RAYMOND CLARE ARCHIBALD. Vol. 1, No. 7, July, 1944. 104 pp. of *Mathematical Tables and Other Aids to Computation,* published by the National Research Council, 2101 Constitution Ave., Washington, D. C. Special Number, $1.75.

BEGINNING in January, 1943, the National Research Council started the publication of a quarterly journal edited by the Committee on Mathematical Tables and Other Aids to Computation. This publication is intended as a clearing house for information concerning mathematical tables and other computational aids in the wide range of book, pamphlet and periodical literature. Its scope includes not only the field of pure mathematics, but also such fields as astronomy, chemistry, engineering, geodesy, geology, physics, physiology, economics, psychology and other scientific disciplines.