made up to July 1, 1921, which amounted to $26,732,000, which was distributed among 191 different institutions. The annual report further reveals that Mr. Rockefeller has released the board from any obligation to hold any of his gifts in perpetuity.

THE will of the late A. Barton Hepburn, of New York City, gives $250,000 to the A. Barton Hepburn Hospital at Ogdensburg, N. Y.; $200,000 to Middlebury College in Middlebury, Vt., of which Mr. Hepburn was a graduate; $150,000 to Columbia University, of which he was a trustee, and $100,000 to St. Lawrence University at Canton, N. Y., where he had lived. The will had also given $100,000 each to Wellesley College, of which his daughters were graduates, and to Williams College, of which his son was a graduate, but these gifts were canceled by a codicil because he made gifts to those institutions two years ago, anticipating the intention of his will. Each gift to educational institutions is specifically made for the purpose of founding chairs in economics or history.

MR. WILLIAM COOPER PROCTOR has endowed three visiting fellowships at Princeton University with an annual stipend of $2,000. The fellows are to be appointed, respectively, on nomination of the University of Oxford, the University of Cambridge and the Paris Higher Normal School.

DR. M. C. MERRILL, head of the department of horticulture at the Utah Agricultural College and horticulturist at the Agricultural Experiment Station, has accepted an appointment as dean of the College of Applied Arts and as head of the department of horticulture of the Brigham Young University. This appointment is to take effect July 1.

H. M. JENNISON, assistant professor of botany and bacteriology at the Montana State College, has been granted leave of absence and will spend the remainder of the college year in the graduate laboratories of the Missouri Botanical Garden and Washington University, St. Louis.

ALFRED P. LOTHROP is on leave of absense from the chair of organic chemistry at the Medical School, Queen's University, Kingston, Ontario, where he has taught for the past twelve years, to act as associate professor of chemistry at Oberlin College.

DISCUSSION AND CORRESPONDENCE

PROFESSOR SUDHOFF'S PARACELSUS

THE announcement of the forthcoming publication of the complete works of Paracelsus, under the editorship of Professor Karl Sudhoff, of Leipzig, will be a matter of considerable interest to chemists and physicians as well as to philosophers. This edition will include the unprinted MS. material as well as what is already known in the printed texts. Paracelsus was a most prolific writer, but many of his more important works, familiar to bibliophiles by their characteristic title-pages in red and black, are now so rare as to be practically inaccessible, particularly such pamphlets as those on miners' diseases (1567) and mineral baths (1576).

Paracelsus, one of the pioneers in analytical chemistry, the founder of chemotherapy, and one of the great medical reformers of the sixteenth century, was even a doughtier figure than Vesalius, who began bravely but ended as a courtier, or Paré, whose popularity saved him from persecution. As compared with these men, Paracelsus occupies about the same position in medicine as did Luther or Knox in relation to Erasmus or Maitland of Lethington. He was more impulsive and impetuous and pushed his denunciation of scholastic medicine to the extreme limit of coarseness. His training was, however, better than is commonly supposed. As Sudhoff has shown, he graduated at Ferrara in 1515, having studied under the celebrated Leonicenus. Although Browning's poem idealizes him, he is commonly represented as a charlatan and a mountebank. This false view is, in the main, due to the character of his writings, which are a curious jumble of exaggerated swagger and of passages showing keen insight into the real nature of things, *e. g.*, that gout and calculus are diathetic diseases, or that goitre and myxœdema are hereditary

and interrelated. His literary style is turgid, verbose, obscure, but this is a necessary and sufficient reason for a modern edition, with the proper *apparatus criticus* of interpretative notes.

Of the extraordinary fitness of the editor for his task, it is almost unnecessary to speak. A brilliant Goethe scholar and *Goetheforscher* in his youth, Sudhoff is known to physicians as the Paracelsus scholar *par excellence*. His whole life of investigation at the Institute of Medical History at Leipzig, his vast researches in medieval medicine, have been nothing else than preliminary to this work, which (at the age of 68) he regards as his swan-song.

Professor Sudhoff's plan is to issue the work in fifteen volumes, containing all the MS. material, and to be sold by subscription at a flat rate per volume. Librarians and scientific men may obtain further details by writing to Professor Karl Sudhoff, Institut für Geschichte der Medizin (38 Talstrasse), Leipzig, Germany.

F. H. GARRISON

THE VALUE OF TILTH IN AGRICULTURE

THE remarks of Mr. L. S. Frierson relative to the above question (SCIENCE, September 2, 1921, p. 193) have just come to my attention. Bechhold's work, which I quoted (SCIENCE, July 22, 1921, p. 74), indicates that evaporation draws salts toward the surface; but rain rather than light cultivation is the main factor returning them toward the roots, although of course cultivation helps.

An essential in cultivation is the breaking of the surface crust or skin, and Mr. Frierson says that, contrary to my hypothesis, this comminution of the upper surrface of the soil "more or less perfectly *stops evaporation, and thus conserves the store of soil water.*"

This claim of Mr. Frierson is quite contrary to all engineering and practical experience. The way to dry wet clothes is not to roll them up, but to spread them out and expose a large surface to the air. The breaking of a crust or skin, with increased exposure of fresh surfaces causes, or tends to cause, *increased* evaporation. Indeed Bechhold says that the cooling effect of talcum and similar dusting powders is consequent upon the fact that they give the skin more free surface for evaporation.

Unless direct experimental evidence to the contrary is produced, I must maintain my view that cultivation, by increasing surface evaporation, tends to bring upward subsurface water and salts, and thus aid plants in dry weather.

JEROME ALEXANDER

NEW YORK, JANUARY 7, 1922

CASTS OF FOSSIL VERTEBRATES AT STUTTGART

TO THE EDITOR OF SCIENCE: The director of the Stuttgart Museum (Württemburgische Naturalien Kabinett) in Germany has offered for sale a series of casts of fossil vertebrates from originals in that museum. Most of these are of great teaching and exhibition value, and owing to exchange and economic conditions in Germany, the prices are extremely low. The American Museum has purchased the series and received the shipment in excellent condition. The quality of the casts varies, some are excellent, others only fair, but I desire to call attention of those who are interested to the opportunity both to secure some very useful casts at small expense and to aid in continuing the work of one of the leading paleontological museums of Germany. For information write to Dr. Martin Schmidt, director of the Stuttgart museum.

W. D. MATTHEW

THE RAY SOCIETY

TO THE EDITOR OF SCIENCE: May I be permitted to express the thanks of the Council of the Ray Society to Professor G. H. Parker for his timely letter published in SCIENCE of November 25, 1921? I should like also to take this opportunity of apologizing to our American subscribers for the continued delay in the issue of our publications, a delay which is due entirely to the difficulty of executing the elaborate colored plates for Prof. W. C. McIntosh's "British Marine Annelids." The first part of the fourth (and final) volume of this work will form the issue to subscribers for 1920 and will, it is hoped, be ready within the next few months. The second part, completing the work, is already in hand and will form the issue for 1921. Subscriptions for each of these