desiring to follow up their studies in Argentina. The municipal council of Buenos Aires, on December 22, 1919, passed an ordinance providing for the establishment of a practical school of aviculture in connection with the zoological garden. During the apprentice period pupils will be required to give their services to the school gratuitously. On the completion of the course a diploma as practical aviculturist will be given. In the Colombian Ministry of Agriculture a department of cattle and meat inspection has been established to study contagious cattle diseases and their remedies, and to inspect cattle and meat products intended for export to countries which demand certificates of inspection. A law of November 5, 1919, grants a subsidy of about $10,000 for the establishment of a course in agriculture and industries in the University of Nariño. The Department of Agriculture of Cuba has decided to establish a bureau of commercial information in European and American countries for the purpose of establishing cordial commercial relations between Cuba and the other countries. The first bureau will be established in France.

UNIVERSITY AND EDUCATIONAL NEWS

AT a meeting of Messrs. Brunner, Mond, and Co., at Liverpool, on August 4, a resolution to authorize the directors to distribute to universities or other scientific institutions in the United Kingdom for the furtherance of scientific education and research, $500,000 out of the investment surplus reserve account was passed.

THE University of Tennessee College of Medicine will erect a pathologic laboratory building to cost $75,000 near the Memphis General Hospital. This is in accordance with a contract between the university and the Memphis General Hospital by which the school has entire control of the teaching facilities in the hospital for a period of twenty years and the school will nominate the medical, surgical and laboratory staffs of the hospital.

DR. GILBERT H. CADY, who has been connected with the Geological Survey of Illinois for several years and who has recently returned from a year spent in mining interests in the far east, has accepted the position of professor of geology and head of the department in the University of Arkansas. He also becomes state geologist of Arkansas.

AT Northwestern University Miss Margaret Fuller, M.A., Chicago, has been appointed instructor in geology and Mr. Thomas Lloyd Gledhill, M.A., Toronto, has been appointed instructor in mineralogy and geology.

F. A. VARRELMAN, acting professor of botany at Occidental College, Los Angeles, during 1919–20 has accepted a professorship at the State Normal School, Silver City, New Mexico. Dr. F. A. Smiley will reassume the work in this department at Occidental College, having been at the University of California during the past year.

O. A. Haugen, formerly instructor at the University of Wisconsin is returning this fall as assistant professor of chemical engineering. He is at present connected with the Carborundrum company at Niagara Falls.

DR. ENGLISH BAGBY has been appointed instructor in psychology at Yale University.

DR. W. N. HAWORTH has been appointed to the chair of organic chemistry at Armstrong College, Newcastle-upon-Tyne, in succession to Professor S. Smiles.

DISCUSSION AND CORRESPONDENCE

THE OBLIGATION OF THE INVESTIGATOR TO THE LIBRARY

THE dependence of the present-day investigator upon institutional libraries is almost absolute. Necessarily so, as only a very exceptional person can own, or provide room for, a library complete enough to cover the range of his professional interests. Even if he owned the books he could not care for them and do anything else. Except in his own special field, no investigator will attempt to compete with the skilled bibliographers of our better libraries, and even in his own field he is apt to appear at a disadvantage. One

of the most careful workers of my acquaintance recently located, after much search, the title of a somewhat obscure work on stomata, only to find, shortly after, that the book was plainly catalogued under the heading STOMATA in the library of the institution in which he was at work.

The work of the librarian is important to the investigator not only in making the results of previous researches available now, but in the attempt to insure present results being available in the future. If the results of the investigations of to-day are anywhere available to succeeding generations it will be in the larger libraries where the publications containing them are being carefully collected and catalogued. We have heard much recently about cooperation among investigators, its desirability, its difficulty, and its disadvantages, and the means by which its undesirable features may be avoided and its disadvantages and difficulties lessened. Might not brief consideration well be given to cooperation between the investigator and the most important of his co-laborers, a cooperation which can have neither difficulties nor disadvantages?

Those of us who are much in the field, perhaps, appreciate more keenly than those who are always in touch with their homes the special advantages of the public library. In these days of closed bars and crowded hotels the one place where the stranger is sure of a welcome is the public library. And, speaking seriously, the importance and influence in small communities of libraries as well stocked and well conducted as those of Poughkeepsie, New York, and Riverside, California, for example is hard to estimate. Now that Mr. Carnegie has provided these institutions all over the country with suitable buildings, in his commendable effort to die poor, why should not the investigator, who must die poor anyway, look to their contents?

The smaller public libraries need help especially in this particular. The almost overwhelming demand on these libraries for fiction, especially recent fiction, should not be permitted to exclude scientific material from their shelves. If the results of our labors, or the methods, or even the activities themselves, are to be made known to the reading public, as much of our literature as possible must be made available in public libraries. Every public library should have at least SCIENCE and the *Scientific Monthly*. If you find a library that lacks them, urge the authorities to subscribe, and if they lack the funds, give them your own set.

The investigator has, moreover, an obligation to the college library, the library of the college from which he graduated perhaps, or the one nearest his home. Other alumni will care for other interests, the pious for the erection of a new chapel, the more worldly minded for the gymnasium, but the library is too often left to shift for itself, and provided with insufficient funds. This applies particularly to the smaller colleges of course, but it is indeed a rare university library to which the average investigator can not add some volume in the course of ten years' work, and that volume will on the whole be much more useful and safer in a good library than in a private study or laboratory.

From the standpoint of self-interest as well as of common honesty, however, the first duty of the investigator is to the reference libraries, whether general libraries like the John Crerar Library and those of our leading universities, or libraries covering special fields such as the Lloyd Library or those connected with our large botanic gardens. If an investigator accepts the hospitality and uses the facilities of the Library of the Marine Biological Laboratory at Woods Hole, or that of Stanford University, and one is made quite at home in both without introduction, it seems no more than fair that these libraries be supplied in return with as complete a set as possible of his own publications if they lie within the field of interest of the library. I am reliably informed that this practise is by no means general. Comparatively few of the investigators of my acquaintance take the trouble to send reprints of their publications even to the Library of Congress.

That these papers are usually published in

standard periodicals, of which complete sets are supposedly available in these libraries does not cover the case. The United States at least is afflicted with several scientific periodicals of avowedly general nature, and some of the special journals have a none too stable editorial policy. Some of these special journals moreover still further complicate bibliographical work by permitting the publication of abstracts of work which at some time may be judged worthy of adequate publication, thus cluttering their indices beyond the point of convenience if not utility.

If then our libraries, even our special libraries, are to approximate completeness in their indices of current published scientific material they should have the assistance of the investigators themselves, at least to the extent of supplying them with such articles as are reprinted for private circulation. It is an almost universal custom for investigators to distribute reprints of their own papers among their colleagues. To add to these private mailing lists the names of the fifty leading libraries of this and other countries would mean some trouble and some slight expense. The time and cost thus involved would however be a very small fraction indeed of that expended in the prosecution and publication of the work and the insurance thus purchased that the papers would be cared for and made more available to this and succeeding generations would be well worth the investment.

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THE FUR SEALS

TO THE EDITOR OF SCIENCE: In an interesting and suggestive article on the "Rescued Fur Seal Industry" in SCIENCE for July 23, Mr. W. T. Hornaday states that "man's so-called management (of the herd) lies solely in the use of the seal killer's club and the skinning knife." This is not quite the whole truth, for while the behavior of individual animals in feeding, breeding, or migration is beyond human control, man can do something to increase the numbers. In the nineties, most of the young seals lying on sandy "rookeries" were killed by the hookworm (*Uncinaria lucasi*). Those on the rocks were virtually immune and as the shrinkage of the herd, before its rescue took them practically all off the sands, no "wormy pups" are lately reported. In 1897, the Commission of that year gather up—and mostly burned—12,000 "pups" that had been weakened by the hookworm and then trampled by the bulls. In that year we had several sandy patches in Zapadni rookery covered by rocks, and we suggested fencing the animals away from the great sand flat of Tolstoi. To cover or fence up sandy areas is a possible factor of "management."

Another is the extirpation of the "idle bulls" which surround the rookeries and raid the harems, killing many females and young. Ninety per cent. or more of the males of this polygamous species are wholly superfluous. In the recent absurdly needless "five years closed season" these have accumulated to the danger point. I am told that an order has now been given for the shooting of 7,000 of them.

The protection of the females from killing on land and sea may be also regarded as a phase of "management."

Whether other islands could be stocked from the Pribilofs has never been tested. On these islands there is ample breeding space for millions more, and there is no evidence of food shortage outside.

DAVID STARR JORDAN

A PRELIMINARY NOTE ON THE GERMINATION OF UROPHLYCTIS ALFALFÆ

RESTING spores from decaying galls of alfalfa crown-wart have been observed to germinate in water cultures. The globose resting spores, depressed on one side, are 38–42 by 30 microns in diameter. They produce from one to fifteen or more zoosporangia which escape through irregular fissures in the brown walls. The zoosporangia vary in diameter from 10 to 40 microns. Zoospores leave the sporangia through short tubes projecting about 2 microns from the hyaline wall, with