DR. HOWARD A. KELLY, of Baltimore, has presented to the herbarium of the University of Michigan his mycological library to be called the "Louis C. C. Krieger Library and Collections." The library alone contains about 100,000 items and nearly all the older classical mycological literature, brought together during the last ten years. Included are 350 paintings by Krieger, many photographic prints, about 2,000 collections of fungi and a set of wax models. The collection will be housed in the herbarium quarter of the new museum building at Ann Arbor.

THE late Chandler Robbins, retired merchant and one of the founders of the American Geographical Society, has left $30,000 to the society.

GIFTS and pledges of $1,215,810 have been received towards the $2,000,000 fund which the Museum of the City of New York seeks to raise for building purposes by June 1, the date set to qualify for the offer of a city-owned plot at Fifth Avenue and 103d Street.

THE American Pharmaceutical Association has available a sum amounting to $550 which will be expended after October 1 for the encouragement of research. Investigators desiring financial aid in their work will communicate before July 1 with H. V. Arny, chairman, A. Ph. A. Research Committee, 115 West 68th Street, New York City, giving their past record and outlining the particular line of work for which the grant is desired.

PROFESSOR HENRY E. CRAMPTON, of Barnard College, Columbia University, associate of the Carnegie Institution of Washington, will leave New York on June 1 on an eight months' expedition to the islands of the western Pacific Ocean, under the auspices of the Carnegie Institution. During eight earlier field-journeys he has prosecuted studies on the variation, distribution and evolution of certain land organisms living in the islands of the South Pacific Ocean, from the Society and Cook Groups to Samoa and the Mariana Islands. It is now planned to extend these studies to the larger and higher members of the Caroline Islands, Palao Islands and Yap, in order to bring the western Pacific area into the entire scheme of the research. Professor Crampton will be assisted in the field-work by his son, Mr. Henry E. Crampton, Jr., and by Mr. Richard B. Goetze.

AN expedition of Italian scientific men to explore the upper reaches of the Amazon River is being organized at Padua, with the technical preparation of a large group of men. It is intended to study the flora and fauna and the lives of the natives. The expedition hopes to leave by the end of June. The venture is backed by the local press and popular subscription.

UNIVERSITY AND EDUCATIONAL NOTES

LAFAYETTE COLLEGE has received from Mr. Fred Morgan Kirby, of Wilkes-Barre, the gift of a building to house the department of civil rights which is expected to cost about $200,000.

DR. F. D. FROMME, professor of botany and plant pathology at the Virginia Polytechnic Institute and plant pathologist at the Virginia Agricultural Experiment Station, has been elected dean of the college of agriculture and director of the Agricultural Experiment Station of West Virginia University.

J. BURNS READ, assistant manager of the research department of the Metals Exploration Company, Golden, Colo., has been appointed professor of mining engineering at the Colorado School of Mines, in the place of Dean L. S. Grant, who recently resigned.

DR. ERNEST O. LAWRENCE, assistant professor of physics at Yale University, has been appointed as associate professor of physics at the University of California.

NEW appointments to professorships at Yale University include Dr. William Arthur LaField, who becomes clinical professor of radiology; Dr. Joseph Irving Linde, who is promoted from associate clinical professor to clinical professor of pediatrics, and Dr. Donald Wallace Porter, who is also promoted from associate clinical professor to clinical professor of pediatrics.

DR. RONALD MANSFIELD FERRY has been promoted to be assistant professor of biochemistry at the Harvard Medical School. Noel Ewart Odell, of the Mount Everest expedition, has been appointed lecturer on geology in the university.

DR. CHESTER K. WENTWORTH, formerly of the geology department of the University of Iowa, has been appointed associate professor of geology at Washington University, St. Louis.

DR. C. H. RICHARDSON, professor of mathematics at Georgetown College, Kentucky, has been appointed head of the department of mathematics at Bucknell University to take the chair formerly filled by Dr. W. C. Bartol, who retires after forty-seven years of teaching service.

PROFESSOR PASCAL, of the University of Lille, has been appointed professor of chemistry at the University of Paris to take the place of the late Professor Chabrié.

DR. FRIEDRICH ALVERDES, professor of zoology in the University of Halle, has been appointed to the chair of zoology in the University of Marburg.

DR. WILHELM STEINHAUSEN, of the University of Frankfort, has been appointed to the chair of physiology at the University of Greifswald.

DISCUSSION AND CORRESPONDENCE

DOES THE AMOUNT OF FOOD CONSUMED INFLUENCE THE GROWTH OF AN ANIMAL?

UNDER the above title H. H. Mitchell[1] has recently published a general criticism of certain types of nutrition studies. In the course of his argument he refers to several papers from this laboratory (without specifically naming the authors) as illustrations of what he says appear "to represent an exaggeration of the importance of negative experimental results." In this category he places our findings that arginine and histidine are not interchangeable in metabolism.[2,3] His objection to our conclusions appears to be due to the fact that the animals which received arginine in the absence of histidine ingested less food than those which received histidine in the absence of arginine. We are convinced that the diminished food consumption of the arginine animals was *the result of the dietary inadequacy*. Such evidence as is available indicates the correctness of this conception. Sixteen years ago F. G. Hopkins[4] pointed out that when a deficiency occurs, the failure in appetite *follows* the failure in growth; which was interpreted by him as indicating that the latter is the *causal* factor, and the diminished food consumption merely the *result* of the inhibited synthetic processes. He says, "If then a factor or factors essential to growth be missing from, or deficient in, a dietary, the consequent arrest of, or diminution in, growth energy may diminish the instinctive consumption of food, while the supply of such factors may increase consumption as an indirect result of a direct effect upon growth." A similar conclusion was reached by Osborne and Mendel[5] in a study of the supplementing influence of yeast upon artificial diets. They state, "The food consumption of the rats on the smaller quantities of yeast was less than that of those on the larger quantities, because their growth was slower and consequently they needed less food; and the change from a small quantity of yeast to a larger one was followed by growth with a resultant increase in food intake."

The above quotations show clearly that the investigators in question regard the diminished food consumption of animals on inadequate diets as the *result* of the failure in growth. No one will deny that, within certain limits, an animal which ingests a liberal amount of an *adequate* food will increase in weight more rapidly than one which consumes a smaller quantity, but this fact is not incompatible with the mass of evidence which has been accumulated, indicating that the ability or inability of an animal to grow upon a given diet exerts a profound influence upon food consumption.[6] Indeed, so generally is this correlation observed that Osborne and Mendel[7] remarked several years ago, "It is a common experience that animals living on unsuitable diets tend to reduce their food intake." Evidently, therefore, the conclusions in our arginine-histidine experiments were arrived at by application of exactly the same principles employed by others in proving dietary deficiencies.

Acceptance of the doctrine that in a young animal growth is an indication of dietary adequacy, and failure of growth a characteristic having the converse significance, is regarded by Mitchell as evidence of amazing credulity since it involves, he says, belief in "the infallibility of the animal appetite." The writer doubts whether any one believes that appetite is infallible. The use by the human subject of various materials which do not contribute to nutritive well-being is quite sufficient to exclude such a view should one be disposed to adopt it. Appetite is a more or less imperfect (and therefore not infallible) response to a physiological need, but when an added dietary component leads to an appetite stimulation the explanation is to be found, we believe, in *the influence exerted by the substance upon the cells themselves.* In the words of Hopkins,[4] "any effect of the addendum upon appetite must have been secondary to a more direct effect upon growth processes." *Thus our view places the emphasis upon the cell processes* rather than upon the imperfect outward manifestations. It recognizes the fundamental and irrefutable fact that the animal organism is unerringly accurate in its syntheses. If a tissue is to be formed at all, every component required must be available or capable of being manufactured by the cells; otherwise the synthesis will not occur. If growth follows the

[1] Mitchell, H. H., SCIENCE, 1927, lxvi (December 16), 596.

[2] Rose, W. C., and Cox, G. J., *J. Biol. Chem.*, 1924, lxi, 747.

[3] Rose, W. C., and Cox, G. J., *J. Biol. Chem.*, 1926, lxviii, 217.

[4] Hopkins, F. G., *J. Physiol.*, 1912, xliv, 425.

[5] Osborne, T. B., and Mendel, L. B., *J. Biol. Chem.*, 1917, xxxi, 149.

[6] A few of the many contributions showing this fact, and involving both vitamine and amino acid deficiencies are, Osborne and Mendel, *J. Biol. Chem.*, 1915, xx, 351, and 1916, xxv, 1; Karr, *ibid.*, 1920, xliv, 255; Cowgill, *Am. J. Physiol.*, 1921, lvii, 420; and Jackson, *J. Biol. Chem.*, 1927, lxxiii, 523.

[7] Osborne, T. B., and Mendel, L. B., *J. Biol. Chem.*, 1920–21, xlv, 277.