Pearce, David Reisman, W. L. Rodman and George E. de Schweinitz. The subcommittee on roster includes Ward Brinton, R. Max Goepp, F. C. Hammond, John A. Kolmer, R. V. Patterson, C. M. Purnell, W. J. Taylor, T. H. Weisenburg, A. D. Whiting and Samuel Woody. A central bureau with a permanent secretary is to be established. The preliminary work to be done includes tabulating the lecture courses, laboratory hours, hospital and dispensary hours and getting the cooperation of all medical schools and hospitals in the city so their doors will be open to the post-graduate student.

At the annual meeting of the National Association of Audubon Societies held recently in the American Museum of Natural History there was an exhibition of motion pictures by Mr. Herbert K. Job, who was sent by the association on a tour of inspection of the bird reservations in Florida and Louisiana.

In a report of the clay-working industry of the United States in 1914 by Jefferson Middleton, issued by the United States Geological Survey, the value of the clay products of this country in 1914 are given as $164,986,983—brick and tile $129,588,822 and pottery $35,398,161. This was a considerable decrease compared with 1913, but as compared with the value for the last twenty years it shows a great growth in the industries. Compared with 1908 there was an increase of $31,789,221. In only four years—1909, 1910, 1912 and 1913—has the total value of clay products exceeded that of 1914. Considered by the average for five-year periods, which is perhaps the fairest comparison, as unusual conditions may occur in a single year, the average annual value of the clay products of the United States was: 1895–1899, $72,233,056; 1900–1904, $118,135,826; 1905–1909, $153,838,231, and 1910–1914, $170,287,909. It will be seen that the value of the clay products of the country has considerably more than doubled in the last twenty years. With the revival of business, which is clearly indicated, the great clay-working industries, with the inherent superiority of their products for many uses, are bound to come into their own, the halt of 1914 being but a temporary setback which will be more than overcome in the near future. Clay products are made in every state. Of the territories, Alaska and Hawaii reported none. The value of clay products ranged in 1914 from $5,974 in Porto Rico to $37,166,768 in Ohio. Ohio reported over one fifth of the value of clay products in 1914 and has been the leading state since figures on this subject were first compiled by the Geological Survey in 1894. It is likely to maintain this position, as its output has always greatly exceeded that of the second state, Pennsylvania, and in 1914 this excess was $15,319,772, or over 70 per cent. Pennsylvania's output in 1914 was valued at $21,846,996, or over one eighth of the total for the United States. New Jersey ranked third in 1914, with products valued at $16,484,652. Illinois was fourth, with products valued at $13,318,953, and New York was fifth, with products valued at $9,078,933. Indiana was sixth; Iowa was seventh, exchanging places with Missouri, which was eighth; West Virginia was ninth, exchanging places with California, which was tenth. The first ten states reported wares valued at $128,253,688, or 72.74 per cent. of the total. The first five states reported wares valued at $97,896,302, or nearly 60 per cent. of the total.

UNIVERSITY AND EDUCATIONAL NEWS

Mr. James J. Hill has presented $125,000 to Harvard University to be added to the principal of the professorship in the Harvard graduate school of business administration, which bears his name. The James J. Hill professorship of transportation was founded by a gift of $125,000, announced last commencement day, the donors including John Pierpont Morgan, Thomas W. Lamont, Robert Bacon and Howard Elliott.

The General Education Board announces that $100,000 has been given to Carlton College, Northfield, Minn., toward a fund of $400,000; $50,000 to Hobart College, Geneva, N. Y., toward a fund of $200,000; $200,000 to Lafayette College, Easton, Pa., toward a fund of $1,000,000, and $25,000 to Kalamazoo Col-

lege, Kalamazoo, Mich., toward a fund of $100,000.

THE trustees of the Joseph Bonnheim Memorial Fund, founded in 1897 by Albert Bonnheim and Fannie Bonnheim, of Sacramento, in memory of their son, have conveyed the entire property of the trust, now valued at approximately $100,000, to the University of California. The income of the endowment will be devoted to scholarships in the University of California for young men and young women.

CONSTRUCTION is about to begin on a laboratory building, to cost $100,000, to be erected by the University of California on the new 465-acre site just purchased by the University of California, at a cost of $55,000, for its citrus experiment station and graduate school of tropical agriculture at Riverside. The director of this work of agricultural research at Riverside is Dr. Herbert J. Webber, former professor of plant breeding in Cornell University.

WORK has begun on the foundation for the five-story building of the Hunterian Laboratory connected with Johns Hopkins Medical School. The new building is located at the corner of Wolfe and Madison Streets, will be 50 by 100 feet and will cost about $65,000.

NEW YORK UNIVERSITY has added to its graduate school courses in surgery by which it will be possible for graduate students to secure the advanced academic degrees of master and doctor of science. The course does not deal with the technique of surgical practise but with subjects such as the application of biological science to surgical diagnosis and therapy.

MR. JAMES COLE ROBERTS, of the United States Bureau of Mines, Denver, has been appointed to the Joseph Austin Holmes professorship of safety and efficiency engineering in the Colorado State School of Mines.

DR. ROBERT S. MORRIS, formerly of the Johns Hopkins University, has been appointed to the Frederick Forchheimer chair of medicine in the medical department of the University of Cincinnati.

DR. ROBERT H. MULLIN, director of the laboratories of the Minnesota State Board of Health and assistant professor of pathology and bacteriology at the University of Minnesota, has accepted an offer from the University of Nevada, at Reno, to take charge of the hygienic laboratories of that institution.

DR. H. G. EARLE has been appointed professor of physiology at the University of Hong Kong.

DR. HERMANN JORDAN, docent in Tübingen, has been called as associate professor of comparative physiology in Utrecht, as successor to the late Professor A. A. W. Hubrecht.

PROFESSOR BENECKE, of the Berlin Agricultural School, has been called to the chair of botany at Münster, as successor to Professor Correns.

DR. BORIS ZARNIK, associate professor at Würzburg, has accepted the professorship of zoology at the University of Constantinople.

DISCUSSION AND CORRESPONDENCE

ELECTROMOTIVE PHENOMENA AND MEMBRANE PERMEABILITY

IN his very interesting presidential address, printed in SCIENCE, Professor Bayliss[1] discusses among other things the origin of electromotive forces in living cells. In this discussion Professor Bayliss adopts the theory, originally suggested by Ostwald and elaborated by Bernstein, R. Lillie and Höber, that the E.M.F. observed in living tissue is due to a selective ion permeability in the sense that normally only cations are able to diffuse through the membrane, but that if the membrane is injured or if a cell is active its membrane becomes also permeable for anions. As a consequence of this increase in permeability the spot where this happens must become negative if compared with a spot of normal or resting tissue. To quote Professor Bayliss:

> I referred previously to the electrical change in excitable tissues and its relation to the cell membrane. It was, I believe, first pointed out by Ostwald and confirmed by many subsequent investigators, that in order that a membrane may be impermeable to a salt it is not a necessary condition

[1] SCIENCE, 1915, N. S., XLII., No. 1085, p. 509.