JACKSON JOHNSON, late chairman of the board of the International Shoe Company, has bequeathed $250,000 to Washington University Medical School as a fund to aid students.

THE issue of SCIENCE for February 1 contained a note relating to the gift of Mr. John D. Rockefeller, Jr., to the laboratory of anthropology at Santa Fe. It was there stated that the gift was made to the University of Chicago, whereas the university is only one of several institutions participating in the work.

ASSEMBLYMAN JAMES R. ROBINSON, of Ithaca, has introduced a bill in the legislature providing $1,000,000 for the construction of a home economics building at Cornell University.

BY the will of the late William Lyman Underwood, the sum of $20,000 is left to the Massachusetts Institute of Technology for the benefit of the biological department, with which he was connected for many years.

DR. HAROLD LINDSAY AMOSS, associate professor of medicine of the Johns Hopkins School of Medicine, has been elected professor of medicine at Duke University.

DR. J. V. HOFMANN, assistant director of the Pennsylvania State Forest School, has been appointed head of the division of forestry at the State College of North Carolina at Raleigh, N. C.

M. LÉON BRILLOUIN, assistant director of the laboratory at the Collège de France, has been appointed the first incumbent of the new chair of theoretical physics at the Sorbonne.

DISCUSSION

ON THE PRESENCE OF ALUMINUM IN PLANT AND ANIMAL MATTER

IN an article entitled, "A Study of the Possible Rôle of Aluminum Compounds in Animal and Plant Physiology," by E. V. McCollum, O. S. Rask and J. Ernestine Becker, published in the *Journal of Biological Chemistry*, Vol. 77, p. 753, 1928, these authors arrived at the conclusion that aluminum is not a constituent of either plant or animal matter. Since this conclusion is so contrary to what has been found by practically all previous investigators, we have checked the work of McCollum and coworkers in the laboratory and have found that they are quite in error. Using the Hilger quartz prism spectrograph, as they did, we found aluminum to be present in egg, potato, carrot, English walnut meat, peach pit, apricot pit, pop-corn, lima bean, navy bean, lupine bean, peanut kernel, lean beef, beef tendon and human cancerous tissue excised from the breast by the surgeon. The complete experimental details will soon be ready for publication.

LOUIS KAHLENBERG,
JOHN O. CLOSS
CHEMICAL LABORATORY UNIVERSITY OF WISCONSIN, MADISON, WISCONSIN,
FEBRUARY, 1929

TO DEMONSTRATE THE COURSE OF SAP ASCENT IN PLANTS

THE usual methods for demonstrating the course of the ascending sap stream, or transpiration stream, through the wood of the vascular bundles of land plants, are open to manifest objection. The commonest method—that of allowing an amputated plant or branch to draw up a colored solution (*e.g.*, red ink) through the cut end—is undesirable because of the tendency of the dissolved pigment either to diffuse or to attach itself to *ad*sorbent walls. The usual alternative to this—a suspension of insoluble particles such as finely ground India Ink, which is also drawn up by the ascending sap stream—while it carries admirably, is also objectionable because it does not stay in place when one attempts to make sections of the tissues into which it has been drawn. One may engage in the time-consuming processes of fixing, imbedding, microtome sectioning, etc., in order to avoid dragging or scattering the carbon by the knife or razor-blade.

But it has occurred to me that one may have the advantages of a non-diffusing suspensoid without the risk of dislocation by sectioning, if one use a suspension of finely ground starch. This innocuous material will also be drawn up through the ducts. When the process has continued as far as one wills, the granular starch may be fixed in place by subjecting the plant or branch to sufficient heat to make paste. The part may then be sectioned, stained with iodine, and examined. The starch will be found to be more or less completely filling the ducts.

Experiment made by Mr. Edwin D. Woodhouse, one of our graduate students, showed that starch was drawn up through six internodes by castor bean (*Ricinus communis*) branches in about twenty-four hours, and that it was drawn through six inches of leaf stalk in about half an hour, in the warm dry air of the laboratory. While Mr. Woodhouse and I are proceeding with our investigation of what he has called sap hydraulics, presently publishing our results elsewhere, I believe this method is so remarkably useful for demonstrations that I should be glad to have it used in this way while we are testing it in others. It is obvious that we shall be able, by using