

for by the exhibitors. Any packages or boxes sent to the Bureau of Standards should be clearly marked "for Physical Society exhibit" and *prepaid*.

FORESTERS and lumbermen see in a decision of the Treasury Department in regard to the administration of the income tax a strong argument for forestry. As they interpret the opinion of the treasury officials they understand that no timberlands shall be subject to the tax until the lumber is cut and marketed and that then the profit only will be subject to an income tax assessment. In other words, all costs will be deducted before the tax is levied, and these will cover the cost of growing the timber, including the cost of planting where necessary and of protecting the growing crop from fire and other depredation. This decision was based upon a request for information made by P. S. Ridsdale, secretary of the American Forestry Association. He asked if there would be a tax on the value of the yearly growth of timber whether it was cut or not, and also whether an income tax would be assessed on the values of the timberland. In reply, the Treasury Department said that the gain from the cutting and disposal of stumpage is realized in the year during which the timber is cut and disposed of, and that the amount received in excess of the cost of such timber is profit, and should be so accounted for as income for that year.

UNIVERSITY AND EDUCATIONAL NEWS

THE late Morrill Wyman, of Cambridge, has left to Harvard College \$50,000, to be used to promote good citizenship by the study of republican government. Further, one half of the residue of his estate, which is said to be large, is left to Harvard to establish a fund in memory of his father, to be known as the Morrill Wyman Medical Research Fund, to provide for the study of "the origin, results, prevention and treatment of disease." A further sum of \$50,000 will ultimately go to this fund. Another fourth of the residue of the estate is left to the Massachusetts Institute of Technology, to be used in aid of deserving and promising students.

THE gift of \$125,000 by an unknown friend for a children's department has now completed the fund of \$615,750 which has been raised for building a new teaching hospital for the University of California Medical Department. Among the other principal contributors are John M. Keith, of San Francisco, who has given \$150,000 in memory of his wife, and four members of the Crocker family, who have given \$150,000 in memory of George Crocker, himself the founder of the Crocker cancer research fund of Columbia University. The givers of the George Crocker fund are Mrs. Harriet F. Alexander, \$50,000; William H. Crocker, \$50,000; Charles Templeton Crocker, \$25,000, and Mrs. Malcolm Whitman, \$25,000.

THE University of Chicago will erect three new buildings this year at a cost of \$800,000. They are the women's gymnasium and club, the geology building and the classics building. Announcement has been made that building operations will be started so that cornerstones of the geology and classics buildings may be laid at the March convocation.

WITH the object of stimulating interest in scholarship among high school students of the community, four competitive scholarships have been established in Adelbert College of Western Reserve University.

THE sixth session of the graduate school of agriculture will be held at the College of Agriculture of the University of Missouri, beginning on June 29, 1914, and continuing four weeks. Only persons who have completed a college course and taken a bachelor's degree will be admitted to the privileges of the school, except that admission may be granted to non-graduates who are recommended by the faculties of the college with which they are associated as persons properly qualified to profit by advanced instruction in agriculture. The faculty will include leading scientific men and experts from the U. S. Department of Agriculture, the agricultural colleges and experiment stations, and other universities, colleges and scientific institutions in America and Europe.

MERRITT BERRY PRATT, now deputy supervisor of the Tahoe National Forest, has been

appointed assistant professor of forestry in the University of California, in the new department of which Walter Mulford, now professor of forestry at Cornell, is next August, to become the head.

DR. ALBERT N. GILBERTSON has charge of the instruction in anthropology at the University of Minnesota in the absence on leave of Dr. A. E. Jenks.

DR. OSCAR PERRON, of Tübingen, has been called to a professorship of mathematics at Heidelberg.

DISCUSSION AND CORRESPONDENCE

WHAT WAS THE CAUSE OF THE ESKERS?

TO THE EDITOR OF SCIENCE: Eskers are features of the earth's surface well known to all students of glacial phenomena. They are more or less well defined ridges composed of mixtures of sand, gravel, clay and boulders, having a direction generally parallel to that of the movement of the latest ice sheet that covered the region where they occur, or normal to the front boundary of the sheet, and they often have a length of many miles, though entire continuity rarely exists throughout the length of any one such ridge or series of ridges having such relations as to be considered as one esker. In some cases such ridges have a striking uniformity in height and cross section, with an abruptness of side slopes and an alignment that suggest an artificial embankment like that for a railroad or a levee. Other forms that have been called eskers are flattened and spread out, broken into detached ridges that often depart from parallelism, and these are frequently associated with knolls and irregular hummocks and valleys that would not be considered as related in any way to esker forms if they stood by themselves. Eskers in the United States have been described and illustrated in several publications of the United States Geological Survey, as well as in various papers and geological text-books. They are numerous and extensive in the eastern part of that portion of North America that was covered by the latest ice sheet, particularly in Maine, New Brunswick and the

eastern Canadian provinces. Several examples on a smaller scale are found in the Great Lakes region of the United States. The writer has examined more especially the eskers near Circleville, south of Norwalk, and near Kenton, in Ohio; the one north of Muncie, Indiana, the fine example near Kaneville, Ill., and the strikingly uniform and conspicuous esker ridge at Mason in southern Michigan. Casual examination has also been made of similar ridges in Ontario, Canada.

The theory to account for these ridges which is most often met with is that they were formed by stream action, in crevices or in tunnels under the ice, during the period of recession or withdrawal of the ice sheet. From the published descriptions and views and sketches of eskers and from the examinations above referred to, I became satisfied that this theory was untenable, although there are some evidences that stream action has had a secondary and modifying effect on the final esker forms in some cases. I concluded that the eskers resulted primarily and principally from cracks in an ice sheet of moderate thickness covering approximately smooth and level areas of considerable extent; these cracks becoming the locus of the accumulation of the esker material from the lateral "shove" of the separated parts of the ice sheet under the influence of seasonal changes of temperature. This action resulted in the upheaval and breaking of the ice along the initial crack, and the melting of the resulting broken ice at a rate greater than that of the main ice sheet due to increase of exposed surfaces, with the accumulation of the general surface earthy material as well as that imprisoned within the ice itself along a more or less well-defined line. This earthy material remained, of course, after the ice disappeared, and it was often modified to a greater or less extent by flowing water during the melting of the ice. I prepared a tentative memorandum setting forth this view some three years or more ago, but it was not published. The illustrated supplement of the *New York Times* of November 23 contains a photographic view of a "pressure ridge" in a sheet