his death. The collection is to be known as the Robinson-Waite Library, in honor of the donor and his wife, Dr. Lucy Waite. The whole collection amounts to over 1,500 volumes and is valued at over $4,000. Dr. Robinson's library is unusually rich in early American medical treatises and old anatomical plates, including many fine copperplates. Funds for the establishment of a scholarship in anatomy in the university medical school, valued at $550 a year, are also provided in the bequest. This will be known as the Byron Robinson scholarship in anatomy, and is to be held by men or women students in medicine. The purpose of this scholarship is to encourage the anatomical, physiological and pathological study of the sympathetic nervous system.

TEN university fellowships with a value of $300 each have been established by the board of the regents of the University of Michigan. Each fellow is liable to render service to the university to the extent of not over four hours per week and must pay all fees.

THE Catholic University of America, Washington, D. C., will recover $350,000 from the bankrupt estate of the late Thomas E. Waggaman, its former treasurer, who owed the institution $900,000 when he was adjudged bankrupt in 1904.

THE quarter centennial anniversary of the Oregon Agricultural College was celebrated on June 13 in connection with the regular commencement exercises. Mr. W. F. Herrin, of the class of '73, vice-president of the Southern Pacific Railroad Company delivered the oration.

AT the May meeting of the board of regents of the University of Michigan the following changes were made in the staff of the museum: The title of the curator, Dr. Alexander G. Ruthven, was changed to instructor in zoology and head curator of the museum, Mr. Bryant Walker was appointed honorary curator of Mollusca, and Dr. W. W. Newcomb was appointed honorary curator of Lepidoptera.

MR. WM. E. LAWRENCE has resigned an assistantship in botany at the Oklahoma Agricultural and Mechanical College to accept the instructorship in botany at the Oregon Agricultural College, Corvallis, Ore.

THE following changes occur this year in the faculty of the Oregon Agricultural College: Professor E. F. Pernot, professor of bacteriology, has resigned to enter commercial work; J. C. Bridwell, instructor in zoology and entomology, has resigned to accept a similar position in the University of California; G. W. Peavy is appointed professor of forestry to succeed E. R. Lake, who takes leave of absence; E. F. Ressler, formerly president of the Monmouth State Normal School, is appointed professor of industrial pedagogy and director of the summer school; J. F. Morel, instructor in veterinary science; W. E. Lawrence, of Oklahoma Agricultural College, instructor in botany.

THE council of Liverpool University has appointed Mr. E. C. C. Baly, F.R.S., to the Grant chair of inorganic chemistry, vacant through the death of Professor Campbell Brown. Since 1903 Mr. Baly has held the post of lecturer in spectroscopy at University College, London.

MR. F. H. HUMMEL, lecturer on civil engineering at Birmingham, has been appointed professor of engineering at Belfast.

DR. JOHANNES HARTMANN, professor of astronomy at Göttingen, has been called to Vienna.

DISCUSSION AND CORRESPONDENCE

THE APPARENT SINKING OF ICE IN LAKES

TO THE EDITOR OF SCIENCE: I have read with interest Professor Barnes's letter, in your issue of June 3, on the apparent sinking of ice in lakes. I agree completely with his explanation of the supposed "sinking" of the ice; but his theories of the precedent warming of the water are quite different from the phenomena as observed here for a good many years. Professor Barnes supposes that the water of the lake during the winter gradually rises to 4°, beginning at the bottom; when the temperature of 4° reaches the under side of the ice, melting takes place both from above and below. Hence the rapid disinte-

gration and the supposed sinking of the ice.

In Lake Mendota the mean temperature of the water immediately after the disappearance of the ice is about 2.7°, as the result of the average of seven years. It has never been above 3.5° at that time. It rarely happens that the bottom water and mud at 22 m. (the deepest water) reaches 4° before the ice disappears.

The water derived from melting snow and ice remains just below the ice, floating on the water of the lake. It becomes warmed by the sun's rays and often rises considerably above 4°. It is lighter than the lake water, having less dissolved matter, and the increase of density as the temperature rises from 0° to 4° is not sufficient to carry it down into the lake water. Immediately below the ice there is a very steep temperature gradient to the maximum and a somewhat slower decline below. The maximum usually comes about 0.5 m. below the under side of the ice. I give a series taken April 3, 1901, when the ice was about 30 cm. thick. The distances are measured from the surface of the water.

Depth	Temperature
In hole through ice	0.2°
40 cm.	3.8°
50 "	4.5°
60 "	5.5°
75 "	5.9°
100 "	5.5°
125 "	4.0°
150 "	2.5°
2 m.	2.3°
10 "	2.2°
15 "	2.4°
18.5 m.	2.8° bottom.

The ice went out April 11; on that day the temperature at 2 m. and below had not changed materially. Facts similar to these appear every year.

If a lake contains little or no dissolved matter the snow water would mingle more freely with it than in a lake like Mendota, and the rise of temperature in the surface stratum might not be so marked; although it would hardly be absent altogether. But if no surface rise occurred, I see no reason why the thawing of the ice should wait until the water below the ice has reached the temperature of 4°. From 60 per cent. to 80 per cent. of the sun's energy is delivered directly to the ice in any case, and is employed in melting it, and dissecting it into crystals. As soon as this process has gone far enough to loosen the crystals from each other they will fall apart, regardless of the temperature of the underlying water. It is always possible that the ice will disappear in this way, "all at once and nothing first"; but I have never known it to do so; in Lake Mendota a wind has been the agent which has shattered the last hold of the crystals on each other and converted the sheet of ice into a mush of crystals rapidly melting in the warmer water.

Professor Barnes thinks that much of the later part of the melting of the ice comes from the warm water below it. I have never seen evidence that such is the case. Unless the water below the ice is warmer than 4° there would be a non-conducting layer of colder water constantly between the ice and the warmer water. If the temperature rose above 4°, convection currents might be set up which would subtract heat from the ice. But at a temperature near 4° the convection efficiency is very small and the currents would be weak, especially under the peculiar stratification which obtains below the ice. From another point of view the same conclusion can be drawn. Not more than 100–125 gr. cal. per sq. cm. per day can possibly get through the ice into the water; and only part of this can be used in melting the ice.

E. A. Birge

Madison, Wis.,
June 13, 1910

The Effects of Deforestation in New England

To the Editor of Science: In their enthusiasm for the conservation of our forests the lecturers and writers on that subject have often been guilty of an over-statement of their case in an endeavor to show that not only are the forests rapidly disappearing but as a result of their removal the land itself is being