conducted in the region of Devils Lake, Wisconsin, the area studied covering about 300 square miles. The party is to camp at the north end of Devils Lake, near the center of the area studied, and the field work continues a month. After the field work a report is made, after the general plan of the United States Geological Survey. Another region for field work in geology is to be Ste. Geneviève County, Missouri, where are shown a large number of geological phenomena in a small area, as many as twenty distinct formations being exposed. Collections of fossils from the various formations will be made, which later may be used as the basis for laboratory study at the university. Another area designated for geological study during the summer quarter is that part of the Cascade Range between Mt. Hood and the Columbia River, where may be had first-hand acquaintance with valley glaciers, a great volcanic cone, recent lava flows and the records of at least six geological epochs. This course is open only to men who can "rough it," and the party is to meet at Portland, Oregon, on August 1, for a month's work. A field course is also to be given in the Lower St. Lawrence Valley, one of the most interesting regions geographically in eastern North America, where plain, highland and maritime conditions are often found in close proximity. Scenically also the region is famous, and Montreal, Quebec, French Canada and the eastern provinces afford many opportunities to relate geography to history as well as to present conditions. September will be given to this course and only graduate students can enter it.

UNIVERSITY AND EDUCATIONAL NEWS

At Yale University, Harry Nichols Whitford, B.S., Ph.D., has been appointed assistant professor of tropical forestry in the Forest School, and Alois Francis Kovarik, to be assistant professor of physics in the Sheffield Scientific School.

Dr. Percy Edward Raymond, assistant professor of paleontology in Harvard University, has been promoted to an associate professorship. Dr. Cecil Kent Drinker, of the Johns Hopkins Medical School, has been appointed instructor in physiology in the Harvard Medical School.

At Cornell University, the following promotions to the grade of professor have been made by the trustees: Sidney G. George, C.E., from assistant professor of applied mechanics; Frank O. Ellenwood, A.B., from assistant professor of power engineering; Calvin D. Albert, M.E., from assistant professor of machine design; Albert E. Wells, from assistant professor of machine construction; Lewis Knudson, Ph.D., from assistant professor of botany; Ralph W. Curtis, M.S.A., from assistant professor of landscape art; E. Gorton Davis, B.S., from assistant professor of landscape art.

Four graduate students of psychology have been appointed as fellows for the coming year in the Bureau of Salesmanship Research affiliated with the Carnegie Institute of Technology, as follows: Dwight L. Hoopingarner, of the University of Texas; C. P. Stone, University of Minnesota; Russell L. Gould, Columbia University; Edward S. Robinson, University of Cincinnati. In addition to these appointments, Dr. Kurt Th. Friedlaender, of San Francisco, has received appointment as honorary fellow.

DISCUSSION AND CORRESPONDENCE

RESULTS OF A STUDY OF DOLOMITIZATION

The writer believes that most dolomites were formed in the sea. Facts favoring this view are: (1) Dolomites and limestones are frequently interstratified. (2) Dolomitization is often related to original structures such as bedding, worm borings, etc., but rarely to faults and joints and other secondary structures. (3) Both mineralogical and chemical studies of limestones and dolomites show that limestones free or nearly free from dolomite, and dolomites nearly free from calcite are vastly more common than beds composed of mixtures of limestone and dolomite. If most dolomites had resulted from the action of underground waters, gradations between limestone and dolomite ought to be common. (4) Calcite fossil casts are often embedded in dolomite. Hollow casts are frequently enclosed by perfect dolomite molds. In either case the calcitic shells evidently were deposited in a dolomite ooze. (5) Perfect dolomite rhombs are sometimes embedded in compact, horn-like calcitic beds. (6) Dolomitization bears no relation to the present pore space of beds as it probably would if it had been affected by underground waters.

That replacement was an important process in dolomitization is shown by the bunchy distribution of dolomite in mixed beds of dolomite and limestone, by the invasion of calcitic fossil casts by dolomite rhombs, and by local dolomitization adjacent to or within pervious marine structures, worm borings, shell cavities, etc. Dolomite grains in contact with calcite were all rhombohedral, but had no calcite inclusions. Anhedral form was the rule for dolomite grains in contact with their own kind. Certain facts suggest that dolomitization may take place by direct precipitation near the sea bottom, and by recrystallization of magnesia-bearing skeletons. Proof for the latter processes was not obtained.

Fossils and the shallow water structures of most dolomites show that, like most limestones, they were laid down in shallow warm seas. Salinity seems to have favored dolomitization, since dolomites are common in the enclosed basin deposits. Chemical and mineralogical studies show that dolomites contain isomorphously combined ferrous oxide. This shows positively that dolomites were laid down under reducing conditions.

The writer was able to differentiate calcite from dolomite very successfully with a modified form of the Lemberg solution consisting of 4 grams of fresh $AlCl_3$ crystals, 6 grams extract of logwood, 1,400 grams of water, boiled for 20 minutes with constant stirring and then filtered. Dolomite turns blue in a dilute solution of HCl about 1/10 normal with a few drops of freshly prepared potassium ferricyanide because of its ferrous iron content. Sedimentary calcite in all cases did not show a trace of ferrous iron.

EDWARD STEIDTMANN
GEOLOGICAL DEPARTMENT,
UNIVERSITY OF WISCONSIN

CELLOIDIN PARAFFIN METHOD

MANY of the difficulties encountered in sectioning hard and brittle objects (chitin, eggs with yolk, etc.) may be overcome by the use of a method which I find is not generally known or used in this country, and which I have been asked to publish in SCIENCE. It is the celloidin-paraffin method of Apáthy,[1] published by him in detail in 1912. Although long, this method combines the advantageous qualities of both the paraffin and celloidin methods, without introducing any disadvantages of either of these methods. There is no shrinkage as in the cooling of paraffin; ribbons can be cut and spread out on the slide by warming as with paraffin; thin sections may be cut even in warm weather, due to the firm nature of the infiltrated celloidin. The method consists of embedding the object in celloidin, clearing and dehydrating the hardened celloidin block, and then infiltrating with paraffin the celloidin block with its contained object. The chief advantage of Apáthy's technique lies in the use of his oil mixture, which is given below.

The method is as follows:

1. Fix, wash and dehydrate material in the usual way, finally putting through three changes of absolute alcohol.

2. Put into a tube of ether-alcohol at least 5 hours, keeping the object high in the tube. (Test tubes of various widths serve nicely for this, the object being held wherever desired by a loose plug of dry cotton wool inserted in the liquid.)

3. Two per cent. celloidin for twenty-four hours, deep in the tube.

4. Four per cent. celloidin for twenty-four hours, deep in the tube.

5. Put object into paper embedding box (or small dish) of four per cent. celloidin, and harden in chloroform vapor twelve hours.

6. Quickly trim excessive celloidin from the object, leaving a few millimeters on each side, and put deep into tube of chloroform for 12 hours.

7. Put into a tube of Apáthy's oil mixture

[1] Apáthy, S., 1912, "Neuere Beitraege zur Schneidetechnik," *Zeitschr. wiss. Mikr.*, Bd. XXIX., S. 449–515, 4 textfiguren.