mechanical engineering and Dr. Albin H. Beyer in civil engineering.

AT Yale University, Dr. H. L. Seward and W. J. Wohlenberg have been promoted to be professors of mechanical engineering, and Dr. G. A. Baitsell to be professor of biology.

AT Vassar College, Associate Professor C. J. Beckwith has been promoted to professor of zoology and Ruth C. MacDuffie has been appointed instructor in zoology and anthropology. Assistant Professor H. M. Allyn has resigned to become academic dean of Mt. Holyoke College.

DR. JACOB C. GEIGER, executive secretary of the Chicago Health Department under the administration of Dr. Herman N. Bundesen, has accepted a position as professor of bacteriology at the George Hooper foundation of the University of California Medical School.

LARS G. ROMELL, of the Swedish Forestry Experiment Station at Stockholm, assumed his duties on April 1 at Cornell University as first incumbent of the Charles Lathrop Pack research professorship for the study of forest soils. Professor Romell will be associated with Professor T. L. Lyon, head of the department of agronomy and soils, and Professor Ralph Hosmer, of the forestry department. Professor Romell's appointment is for three years.

PROFESSOR J. J. R. MACLEOD, associate dean of the faculty of medicine at the University of Toronto, co-sharer of the Nobel prize in 1923 with Dr. F. G. Banting, the discoverer of insulin, will leave Canada in the autumn to become Regius professor of physiology at the University of Aberdeen, in succession to Professor J. A. MacWilliam, who recently resigned.

## DISCUSSION AND CORRESPONDENCE

### DEAFNESS IN PRE-COLUMBIAN PERU

THE determination of the causes of deafness in an ancient race of people, such as the pre-Columbian Peruvians, is well worth undertaking. The subject has already received some attention. Burton[1] has given an extremely useful survey of the nature of aural exostoses in general, with a brief account of otosclerosis.

The aural exostoses in the external auditory meatus in pre-Columbian crania from Peru are often definite osteomae with a typical ivory-like luster, and extremely hard and dense. These never grow very large, and I do not know that a single osteoma ever closes the auditory canal, but the presence of three tumors *does* close the canal completely, on one and on both sides. In addition to this the walls of the auditory canal itself often become swollen and sclerotic and close the canal, thus producing deafness.

The assignment of strain, brought on by the mastication of tough food, as a cause of the exostosial growths, and possibly the cause also of otosclerosis in general, requires an anthropological survey for confirmation. Infections played a part in deafness, for I have seen cases of pre-Columbian middle ear infections.

Aided by a grant of $300 from the Committee on Scientific Research, American Medical Association, a more exact investigation of the ancient conditions will be undertaken. Dr. L. C. Kinney, of San Diego, will do the roentgenological work on the pre-Columbian crania, and I have at my disposal scores of roentgenograms of unopened mummy-packs.

ROY L. MOODIE

SANTA MONICA, CALIFORNIA

[1] Burton, Frank A., 1927, "Some Considerations on Prehistoric Aural, Nasal, Sinus Pathology and Surgery." Santa Fe, N. M., pp. 1–38, Figures 1–17.

### PRODUCTION OF POTATO TUBER NECROSIS

IN the course of investigations, chiefly histological and cytological, carried on during 1926–27 at the University of Wisconsin, but under the auspices of the Vermont Experiment Station, experiments were conducted by the writer to throw more light on the real relationship existing between leafroll and net necrosis of the Irish potato. Through the use of cages to exclude undesirable insects, potato plants were grown in the field both from healthy and from leafroll tubers and aphids of the species, *Myzus Persicae,* were colonized on leafroll vines under cage and transferred at intervals to the foliage of healthy vines also under cage. Some four or five such transfers were made, each transfer involving the introduction of 25–50 aphids into each of five cages where they were allowed to migrate from the detached leafroll leaves to the foliage of the enclosed healthy plants. Two cages of healthy plants from the same lot of tubers were kept as checks. One cage contained leafroll plants on which aphids were colonized for increase and distribution.

When the harvested tubers from these cages were first examined on October 25, very interesting results were found. Necrosis, of the phloem necrosis type, was found in abundance, even at this early date, in all the treated cages. In one of the five cages practically 100 per cent. of the tubers showed the characteristic discolorations. The necrosis was in early stages of development, that is, not extending far from the stem end of the tubers and not showing as extreme necrotic discolorations as are found in tubers later on in the storage period. Microscopic study of stained sections