snow falls or in the early spring will be sufficient to start a new growth. On other portions of the area, however, where a growth of grass and weeds has covered the ground, it will probably be necessary to work the seed into the soil by raking or dragging brush over the ground. In some localities sowing by what is called the seed spot method in which several seeds are dropped together in spots and covered with soil will probably be successful. To test these various methods five experimental plots have been selected. These represent the various conditions found on the burn, such as difference in slope, altitude, exposure and vegetation. This fall a large quantity of Douglas fir seed will be collected and a quantity sown on each plot. Next spring the experiments will be repeated and it is expected that the results obtained will indicate what methods and what seasons of the year are best adapted to the conditions found on this burn. When this is accomplished the Forest Service will be in a position to commence the reforestation of the Soleduck burn on a large scale and to reseed large areas each year. It is believed also that the results obtained will be of value not only in solving the problem of restocking the burn in the Olympic National Forest, but that much will be learned concerning the best methods of reforesting denuded areas in other forests throughout the Pacific northwest, where conditions are similar, and that thus the work may be largely extended.

UNIVERSITY AND EDUCATIONAL NEWS

The University of Wisconsin, the University of Michigan, the University of Minnesota and the University of Toronto have been admitted to the regular pension system of the Carnegie Foundation for the Advancement of Teaching.

Mr. John D. Archbold has given $300,000 to Syracuse University, to pay the mortgage on the ground of the university which was placed in order to build the gymnasium.

Swarthmore College will receive $125,000 from the General Educational Board, providing the sum of $375,000 is raised within two years by the college. The sum of $187,500 has already been subscribed.

Dr. C. T. Williams, of Pembroke College, has given £2,500 to Oxford University for scholarships in physiology and human anatomy.

The School of Mining affiliated with Queen's University in Kingston, Ont., is about to erect a new chemical building which will cost nearly one hundred thousand dollars and will probably be ready for occupation in October, 1910. In the meantime, indeed very soon, two or three appointments to the teaching staff will be made. A building for mining and metallurgy will also be put up at a probable cost of fifty thousand dollars. It is the gift of a member of the staff of the school, Professor Nicol, of the department of mineralogy. The chemical building is provided by the Ontario government.

The department of zoology and geology at the Massachusetts Agricultural College will this year conduct a ten days' camp at the seashore for introductory work in marine zoology. The camp will be established at Groton, Connecticut, at the mouth of the Poquonnock River. Work will begin at the close of the college year. The department thus aims to supplement its courses in general and economic zoology. The work will consist mainly in the study of habits, habitats and ecological problems, in collecting for study, dissection and preservation and in photographic work. The privileges of the excursion are open to students of elective undergraduate courses. Reports will be required and credit will be given for the work as a part of the undergraduate courses. The work will be in charge of Professor C. E. Gordon.

The Rev. Henry H. Appel, of York, has been elected president of Franklin and Marshall College, at Lancaster, Pa. Mr. Appel is a son of the late Thomas G. Appel, who was president of the college for many years.

Dr. Harold Pender, of New York City, has been appointed professor of electrical engineering in the Massachusetts Institute of Technology.

OSCAR A. JOHANNSEN, assistant professor of civil engineering at Cornell University and author of researches on the biology of water supply, has accepted the professorship of entomology in the University of Maine.

DR. J. E. KIRKWOOD, formerly an investigator with the Continental-Mexican Rubber Company in Mexico, has been appointed assistant professor of forestry and botany in the University of Montana.

CHAS. H. TAYLOR, a graduate student in geology at the University of Chicago, has been appointed assistant professor of geology in the University of Oklahoma.

PROFESSOR H. A. WILSON, F.R.S., of King's College, London, has accepted the appointment of professor of physics in McGill University.

DR. ARTHUR LAPWORTH has been appointed a senior lecturer in chemistry at the University of Manchester. He is the son of Dr. Lapworth, F.R.S., professor of geology at Birmingham, and is at present head of the chemical department of the Goldsmiths' Institute, New-cross.

DISCUSSION AND CORRESPONDENCE

MYLOSTOMID DENTAL PLATES

IN a recent contribution by Dr. L. Hussakof on "Relationships of American Arthrodires" (*Bull. Amer. Mus. Nat. Hist.*, 26, art. 20), a peculiar dental element is made known under the caption of *Dinognathus ferox*. The designation applies to a supposed new genus and species of Arthrodires, of doubtful family relations, and whose characters are imperfectly definable. The position of the plate in the mouth is held to be indeterminate, although remark is made that "its form is not suggestive of having been set in a titanichthid mandible."

Knowledge of this unique structure is the more welcome, since, as the present writer believes, it dispels the mystery of the missing upper dentition of *Mylostoma terrelli* Newb. That the peculiar plate in question belongs to the same sort of creature, if not indeed to the identical species as that established by Newberry upon the evidence of a solitary mandibular plate (now the property of the Museum of Comparative Zoology), seems practically certain. At all events it can be provisionally associated with the type of *M. terrelli* with the same confidence that actuated Newberry's theoretical correlation of upper and lower dental plates of *M. variabile*—an hypothesis afterwards confirmed beyond peradventure by Bashford Dean.

The mylostomid nature of the novel dental plate under discussion is unmistakable, one might even say self-evident, the moment it is perceived to be a compound instead of simple element, representing in its entirety the forwardly placed pair of palato-pterygoid dental plates common to Arthrodires and Ctenodipterines. Among the latter, *Heliodus lesleyi* furnishes an analogous instance of fusion of the corresponding parts.

The newly discovered dental plate is significant for yet another reason, namely, for enlightening us as to the extent to which the components of the upper dentition of Arthrodires are capable of fusion *inter se*. Certainly in *Dinomylostoma*, and presumably, also, in *Mylostoma* proper, there is a single pair of vomerine, and two distinct pairs of palato-pterygoid dental plates. In Dinichthyids, so far as known, the two last-named pairs on either side are fused into a single "maxillary" element or "shear-tooth." *Dinognathus* is peculiar in having the forward pair of palato-pterygoid tritors fused into a single plate, whose periphery accords fairly well with the antero-external contour of the mandible—that is, on the assumption that Newberry's so-called *M. terrelli* and the newly described *Dinognathus ferox* relate merely to different parts of the same dental apparatus. It is pertinent to observe further that a rounded eminence occurs in the median line anteriorly, as shown in Dr. Hussakof's figure, corresponding in size and position to surface elevations of the homologous plates in *M. variabile*. The manner in which these eminences interact with depressions in the functional surface of the lower dentition has been discussed elsewhere. As to the occurrence of vomerine teeth and a