Government, to carry out without charge at the National Physical Laboratory the verification, over a period of five years, of the standards to be procured by the Commonwealth Research Council for use in Australia. Full information as to the standards likely to be required was sent to Australia in a report from the laboratory. Assistance has also been given to Canada, India and South Africa in connection with standards for specific purposes. The committee feels that it is of the utmost importance that help should be given, whenever possible, towards securing uniformity throughout the empire in the standards employed.

UNIVERSITY AND EDUCATIONAL NOTES

PRINCESS HENRY of Reuss has given $300,000 to the department of electrical engineering of Stevens Institute of Technology. Both the departmental and the professorship endowments will bear the name of Anson Wood Burchard, former husband of the princess, who, at the time of his death on January 22, 1927, was chairman of the executive committee of the General Electric Company and a trustee of the college.

BY the will of the late Mrs. Mary L. Walker Peters a bequest of $25,000 for research in cancer is left to Cornell University.

DR. FRANK CARNEY, professor of geology from 1904 to 1912 and professor of geology and geography from 1912 to 1917 at Denison University, has accepted the newly created professorship of geography at Baylor University. Since 1917 he has been chief geologist for an oil company. Dr. and Mrs. Carney will spend the summer in Europe with Professor George Grant MacCurdy, director of the American School of Prehistoric Research.

DR. PHILIP E. BROWNING, assistant professor of chemistry at Yale University, has been promoted to an associate professorship.

DR. H. R. ROSEN, since 1920 associate professor of plant pathology at the University of Arkansas, has been promoted to a professorship.

DR. H. A. BARTON, now fellow of the Bartol Research Foundation of the Franklin Institute, has been appointed assistant professor of physics at Cornell University.

PROFESSOR ERNST GELLHORN, of the University of Halle a/s, has been appointed associate professor of biophysics in the department of animal biology of the University of Oregon at Eugene.

DISCUSSION

A PIERRE DINOSAUR

A QUITE unusual find of petrified palm stems and a fragmentary dinosaur in association with the great marine turtles of the Pierre was briefly noted in the *American Journal of Science* for March, 1903 (p. 215), as follows:

With *Archelon ischyros* and *Marshii*, there occur in the uppermost 100 feet of the Pierre as developed along the Cheyenne River a series of associated forms of uncommon interest. Firstly, I have obtained in this same horizon well-preserved toe bones of a Dinosaurian, nearly of the form, and nearly as large as those of *Claosaurus annectens*, which I shall (later) figure as *Claosaurus* (?) *affinis;* while presumably from the same drift from a not far-distant shore, I secured an exquisitely preserved new species of Palm stem, *Palmoxylon cheyennense.*

Secondly, associated with these land forms occur Plesiosaurs, Mosasaurs, a shark (a broad-toothed Lamna), a fish allied to *Beryx*, and the following invertebrates—*Nautilus DeKayi* (very abundant in the matrix of one of the large turtle skeletons), the splendid *Placenticeras placenta, Scaphites nodosus, Emperoceras Beecheri* Hyatt, *Baculites ovatus* and *compressus* Say, *Callista Deweyi* M. & H., etc. (The determinations rest partly on the word in person of E. D. Cope and C. E. Beecher.).—Note:

Such definitive associations of land and marine types are the actual milestones in the biologic course. Continuing the record, hence, Dr. N. E. Stevens later gave, following a previous paper on palm stems from the Upper Cretaceous of New Jersey, a finely illustrated account of the Pierre Palmoxylons. The stems are calcified, the thin sections show the finest detail and there may be several species. All the details are enhanced by my own observation during the past summer in the Mesaverde of the far west, of the frequency of palms in association with a splendid series of petrified cycadeoids. Ultimately the Mesaverde-Pierre point of equivalence must be determinable.

Not so fortunate the status of the accompanying *"Claosaurus* (?) *affinis,"* which threatens to fall into the discard as a *nomen nudum.* The specimen as held with season's collections had been compared directly with *Claosaurus.* There seemed to be no immediate need of illustration; no doubt the suggested name was one of convenience. Now, however, there is need of a further note as Dr. Hay is about to bring out his new bibliography of the fossil vertebrata of North America. My notes say that:

On September 26–29, 1902, I walked from Buffalo Gap (northeasterly) twenty-five miles out to and along the Cheyenne. Several days' search along the Cheyenne and on "Squaw Humper Creek" resulted in little of interest. On the thirtieth, the fourth of the greater specimens of the giant turtle *Archelon* was located about one mile south of "Shoemaker Creek" on the west bank of the Cheyenne. It was while excavating this specimen that there was soon found not more than 300 feet away on the

top of a small Pierre knoll various much-eroded parts of a large skeleton, apparently Dinosaurian—the only distinct elements left being toe bones. Erosion of the knoll had been conditioned by the presence of the original fossil, but ten feet below the Oligocene overlap, and about fifty feet higher up than the *Archelon*. The type of the second species of the great turtles of the Cheyenne, *Archelon Marshii*, was collected from quite the same level as the dinosaur bones at a point about five miles northeasterly within the "badlands" East of the Cheyenne in 1898. Palm stem segments were found that year as well as in 1902, and came from both banks of the Cheyenne.

The Dinosaur toe bones as found on confrontation to correspond with II, I and IV, 1, 4 of the right hind foot of *Claosaurus*, are of course only casually referable to or comparable with that genus. One, of robust form, is in very good condition, the others only relatively so. The important fact is that such material occurs in the upper Pierre and must again be found. Certainly it is regrettable that such scattered but significant fossils are so seldom made the objects of early, utterly careful search. Twenty-seven years ago the Pierre of the valley of the Cheyenne was to the vertebrate collector still an all but untouched horizon. It had first attracted my attention in July-August, 1895, with results which are remembered. But always as such new and untouched regions are occupied, human curiosity, or rather unreason, cupidity and destructiveness of the untutored mind begins, and so many clues to the finest fossil types disappear. This is something that science should avert. The facts of the past, the lesson they teach are the necessitous heritage of all.

In the main, Dinosaurian occurrence in marine beds is a subject but scantly noted because the number of identified forms is being added to rather slowly. More than maps showing larger areas and too often introducing overlarge margins of vertical and horizontal error, short tracings of shore-lines, lacustrine and marine, for the times when the Dinosaur record appears to view, must help first in determining the absolute landscapes and their chronology. That the Dinosaurs of Como time lived in lagunal regions near the sea-level or arms of the sea, like those of the lower Amazon, and maybe in much colder estuarial plains like those of the Hoang Ho, is the usual statement. Curiously enough, certain of the armored Dinosaurs, presenting in their armor distinct analogies with the shells of turtles, are more or less marine in their occurrence, and may have been sea-haunting in habit. Such are the *Hierosaurus* (Wieland) of the Niobrara chalk, *Nodosaurus* as so well described by Lull from the Benton, and allied European types.

Of direct concern here is the Dinosaurian "from the chalk of the Smoky Hill River," called by Marsh in 1872 *Hadrosaurus agilis*. Later (1898), Williston said the occurrence might be in the Pierre, as the distinction between the Pierre and the Niobrara "was not known to Marsh." I have taken the trouble to examine the original type, which includes some fairly good but flattened toe bones of medium size, with appearance usual to Niobrara vertebrates and rather unlike those from the Pierre. This fossil has been bandied somewhat in the synonomy, but could be left where Marsh placed it under the genus *Hadrosaurus* (if merely queried). In the fifty-seven years subsequent to this first find, therefore, the Niobrara has yielded as its quota of described land forms the one additional Dinosaurian just noted and also one characteristic armor fragment from a silicified monocarpic cycadeoid; while in the Pierre occur the one Dinosaur and the Palms as renoted above, it being extremely likely that more such material has been seen without finding record.

In reality the Pierre is an outstanding horizon to the collector of vertebrates. There is no need to depend on or wait chance discovery. Especially along the valley of the Cheyenne, the upper Pierre, where much cut by cross currents of closing Pierre time, and where scored by a great Oligocene river channel, promises much to the patient collector and geologist.

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ZYGOPHYLLUM FABAGO IN COLORADO

THE perennial plant, *Zygophyllum fabago* L., also known as Syrian bean-caper, has been reported by Pellett[1] to be naturalized over a considerable area near Mesilla Park, New Mexico, and to be useful there as a honey plant, but its presence in Colorado has not been recorded before. During an inspection of weeds in the San Luis valley of Colorado in August, 1926, attention was called to the presence of a perennial plant apparently new to the region and unknown to any one in the valley. It could be found in only one field southwest of Alamosa, Colorado. None of the specimens taken in 1926 were in flower at the time and were not identified. In July, 1928, County Agent Max C. Grandy sent to the Colorado Agricultural Experiment Station a quantity of this plant from the infestation visited in 1926. It was identified by Dr. S. F. Blake, of the U. S. Department of Agriculture, as *Zygophyllum fabago* L. There has as yet been no satisfactory explanation of how the plant was brought into Colorado.

Zygophyllum fabago is a native of the region extending from the steppes of Russia southeast to Afghanistan. It may be easily recognized by its suc-

[1] Frank C. Pellett, "A New Plant in the United States," SCIENCE, 63: 637. 1926.