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.

culent, alternate, bifoliate leaves, with rounded leaflets 2 to 3 cm long; bright, salmon-colored flowers usually borne singly in the axils of the leaves; and green, five-angled, ribbed pods which vary from slender to rather stout, and from 3 to 8 cm in length. The stem, which sometimes grows to a height of five decimeters, is single at the collar with numerous branches above. The plant comes up each year from a tough, crooked, light brown perennial root that is about 1 cm in diameter. The root grows horizontally at a depth of from 10 to 15 cm below the surface, and sometimes extends several meters in the same direction, giving rise to shoots at irregular intervals. More than half of the cross-section area of the root is storage cortex.

In so far as is known, this field is the first and only place in Colorado where the Syrian bean-caper has become established. It has not been found to be troublesome in New Mexico and is even useful there. According to those who have watched this infestation of *Z. fabago* in Colorado, plowing alone has little effect upon it, alfalfa does not smother it out, and yet it does not seem to spread rapidly. The bean-caper has been controlled in this location by lifting the roots from plowed ground with a pitchfork, which exposes the roots and shoots to desiccation that eventually results in death. The roots apparently do not extend to any great depth in this one known infestation in Colorado where the soil is open and rather light. The enormous root system, however, looks dangerous, and gives reason to fear that if the plant becomes as abundant in heavier tilled soils as have Russian knapweed (*Centaurea picris*) and perennial peppergrass (*Lepidium draba*), it would be an equally persistent and noxious pest.

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PROPOSED AMENDMENTS TO THE INTERNATIONAL RULES FOR BOTANICAL NOMENCLATURE

Article 36. Substitute for the present text the following:

Descriptions of new groups should be in a language generally understood by the scientific botanists of the world.

Note: Any person who has had sufficient botanical training and experience to qualify him to describe new genera and species of plants must be familiar with at least one of the more generally known languages.

Article 39—Recommendation XVIII ter.

In selecting the nomenclatorial type or standard species of the genera of non-vascular cryptogams to choose species that will fix the generic names as they are now commonly applied.

Example 1. Hypoxylon Fr. Summa Veg. Scand. 383–4. Fries first used the name for a genus to include 25 species now distributed in Ustulina, Anthostoma, Nummularia, Daldinia, Sordaria, etc. To take the first species, *H. ustulatum*, as type would displace the name Ustulina, and most of the other species which are now known as Hypoxylon would require another generic name. If, however, *H. coccineum*, species No. 11 in Fries' list, a well-known and widely distributed species, be taken as the type or standard species, the name Hypoxylon would be retained in its present general application and the nomenclature stabilized.

Example 2. The genus Valsa, Fr. Summa Veg. Scand. 410 contains 44 species representing several different genera. The first species *V. sorbi* is now known as Eutypella. By selecting *V. ceratophora* Tul. (*V. decorticans* Fr.) the name Valsa is retained in its present general application and many nomenclatorial changes are avoided.

Note: Numerous cases of this kind might be cited among the fungi. Following the above recommendation would largely obviate the need of a lengthy list of *nomina conservanda.*

A permanent nomenclatorial committee should be appointed to decide disputed questions regarding the choice of generic names and their types.

The writer will be pleased to receive notes of approval or otherwise from botanists.

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QUOTATIONS

THE CARNEGIE INSTITUTION OF WASHINGTON

ANDREW CARNEGIE was one of the first to appreciate the benefit that science could derive from being competently organized and directed. Although he never applied true research in his own mills and set up only testing laboratories, he knew what leadership had accomplished in his own enterprises. Laboratory research in pure science before his day had been conducted by gifted individual professors, and by 1900 they were complaining that they had become specialists who could not follow one another's work. What an enormous impetus science would receive if they could work together!

Thus was conceived the Carnegie Institution of Washington, which now celebrates its twenty-fifth anniversary. The six hundred volumes published by the institution, all devoted to research, testify to the clarity of Carnegie's vision and to the brilliant competence of Gilman, Woodward and Merriam as administrative presidents.