hydration caves, because of the fact that, as previously shown, the process of hydration has been such an important factor in their formation.

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A PRELIMINARY NOTE ON CLOVER DISEASES IN TENNESSEE.

FOR a few years past there has been considerable complaint among Tennessee farmers of the failure of the red clover crop. A careful investigation of the question was begun by the botanical department of the Tennessee Experiment Station early in the present season, and a short account of the present stage of these investigations may be of some interest.

While the whole state has been more or less explored with reference to diseases affecting clover, the immediate region about Knoxville has been more carefully studied, and may be assumed as typical of the situation throughout Tennessee, and perhaps adjoining states.

The crop begins to die in the summer following late winter sowing. The trouble has been popularly attributed to some supposed condition of the soil, and so termed 'clover sickness' of the land. It was soon learned, however, that the malady is independent of soil conditions, and there was at the outset a strong presumption in favor of some fungous or bacterial disease. Our later investigations have fully justified this opinion.

Early in the season a few leaves were found to be attacked by the clover rust, *Uromyces trifolii* (Hedw.) Lev. This disease occurs so sparingly that it may be left out of consideration. Careful search frequently reveals the presence of *Pseudopeziza trifolii* (Bernh.) Fuck. While this fungus caused considerable damage in some instances, it may also be left out of account.

A rather destructive disease, apparently caused by *Macrosporium sarcinæforme* Cav.,[1] is very frequent and widely disseminated. It often appears on stray alsike plants (*Trifolium hybridum* L.) associated with the red clover, which is not true of any other parasites discussed in this paper. The *Macrosporium* disease appears capable of destroying the clover plant unassisted by any other parasite, though this statement is based only on inspection in the field.

The most destructive disease thus far found is what appears to be an undescribed species of *Colletotrichum.* In its general appearance this disease very closely simulates the anthracnose of clover (*Stengelbrenner*), described by Mehner[2] and Kirchner[3] and by the latter attributed to the attacks of *Glœosporium caulivorum* n. sp.

The *Colletotrichum* species here referred to causes considerable injury to young clover plants in early summer, where it confines its attacks to the petioles of the leaves. Its greatest damage, however, is done to blooming and fruiting plants, where it attacks the stems most often just below the flower heads, but frequently at other points, causing the sudden blackening and death of a limited region, eventually destroying the entire plant.

A description and characterization of this species will shortly appear, and further experiments now under way will be described in a forthcoming bulletin of the Tennessee Experiment Station.

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[1] Cited in Tubeuf and Smith, 'Diseases of Plants,' 1896, p. 517; also Malkoff, *Zeits. f. Pflanzenkr.*, Bd. XII., pp. 283–285.

[2] *Zeits. f. Pflanzenkr.*, Bd. XI., p. 193, 1901.

[3] *Ibid.*, Bd. XII., p. 10.

A NEW ARMORED DINOSAUR FROM THE UPPER CRETACEOUS OF WYOMING.

THE writer has recently been fortunate in the discovery, near Lander, Wyoming, of the larger part of a skeleton of a remarkable dinosaur, evidently new. The animal is about half the size of *Stegosaurus,* to which it is allied, but is peculiar in having a heavy bony carapace, two inches or more in thickness. This carapace is covered with, and for the most part firmly united to, a mosaic of pentagonal dermal bony plates, much like those of *Glyptodon.* Each plate is about four inches

in diameter, scrobiculate and somewhat elevated in the middle. The whole was evidently covered with a dermal shield, and probably each eminence bore a more or less elongated horny spine. How much of the creature was covered by this heavy shield it is yet impossible to determine; possibly only the pelvic region was so protected, as in *Polacanthus,* since there is also preserved a series of large bony plates or scutes, each of about the size of one's hand, united transversely with each other, and bearing in the middle a prominent longitudinal keel. In addition, numerous flattened bony scutes were preserved, each measuring about three inches in diameter. There are no osseous spines. The bones of the skeleton are solid; the front legs are smaller than the hind ones; the dorsal centra are amphiplatyan, 75 mm. in width by 70 in length, with elevated arches, as in *Stegosaurus* or *Polacanthus.* The head is small, the teeth in size and form resembling those of *Paleoscincus* Leidy. The tibiæ measure 145 mm. in width distally.

The beds in which this interesting specimen was discovered are composed of dark blue shales, from 30 to 75 feet in thickness, immediately overlying and conformable with the Benton Cretaceous. They have been traced continuously for more than forty miles, becoming thinner to the west, where they plainly show littoral and river disturbances. Two continuous lines near the middle, the upper one of white clay, the lower of ferruginous shales, everywhere permit the exact allocation of the fossils. The associated fossils are three or four species of plesiosaurs, one of them clearly belonging in the genus *Polycotylus,* hitherto unknown from above the Niobrara; a large species of a teleosaur crocodile; and a half dozen species of small gastropods and pelecypods, the latter occurring in myriads, in oft-times massive concretions, about twenty feet above the clay line; plesiosaur bones are sometimes found mingled with shells in the concretions. The invertebrates are of a fresh-water or brackish-water facies.

About thirty feet above these shales there is a layer of sandstone containing rarely a species of *Ostrea;* above which there are about six hundred feet of sandstones and shales containing many characteristic Pierre invertebrates and a varied flora of dicotyledonous leaves. Surmounting the whole are not less than two thousand, and more probably three thousand, feet of light-colored Pierre shales. Fox Hills deposits have not been detected, unless in the massive sandstones immediately below the Laramie deposits.

I believe that the beds containing the vertebrates are of Niobrara age, and they may possibly represent the Belly River. That the dinosaur may prove to be generically identical with *Paleoscincus,* known from the Belly River and Laramie deposits by teeth only, is not impossible. I venture, however, to suggest the name of Hailey shales for the beds containing it, and the name *Stegopelta landerensis* for the dinosaur itself.

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University of Chicago,
September 28, 1905.

QUOTATIONS.

SHALL THE UNIVERSITY BECOME A BUSINESS CORPORATION?

In the settlement of the larger questions of administration—the choice of president and of professors, the fixing of greater questions of policy—may not some council composed of trustees and faculty jointly share the responsibility to advantage? Whatever may be said in favor of the sound judgment of the well-trained business man, I can not doubt that he would be a wiser councilor for education if he could hear first-hand the views of devoted, intelligent scholars. On the other hand, will not the scholar profit equally by such contact, and is there any surer way to widen his horizon and to give him the experience which ripens judgment than to offer him a share in the responsibility of settling these larger questions, while relieving him at the same time of part of the pressure of the daily routine? In a word, recognition of scholarship in the choice of a president, an adjustment of duties which shall relieve the pressure upon the professor and student, a better contact between the governing body and the teaching body, with a common responsibility in the settle-