

longitude $97^{\circ} 30'$ west. Here we found it forming the upper part of several isolated elevations known as the "Smoky Hills," at an altitude of about 1200 feet above the Missouri at Fort Leavenworth. At this locality, however, we saw no rocks overlying it, and consequently have no *stratigraphical* evidence that it is the same rock seen by us at other localities under Cretaceous beds; but our lithological and palæontological evidence is quite conclusive on this point, for this rock in color, composition, and all other respects, is undistinguishable from No. 1, of the Nebraska section, as seen near the mouth of Big Sioux river on the Missouri, and contains numerous fossil leaves, some of which are identical with those occurring in No. 1, at the last mentioned localities. Amongst these leaves Dr. Newberry has also identified at least one genus! (*Ettingshausiana*) peculiar to the Cretaceous system,

Bearing in mind that all the rocks here have a gentle but uniform inclination or dip to the north west; and that the formation under consideration consists of red and yellowish sandstones, and colored clays, with generally more or less impure lignite and ferruginous concretions, we will be prepared to recognize it at lower and lower elevations as we proceed northward.

Without undertaking to mention in detail the intermediate exposures, we will pass northward at once to localities where it has been seen beneath Cretaceous rocks by three different observers at various times; this is near the Kansas and Nebraska line—latitude 40° north, and in the vicinity of 97° of west longitude. Here at an elevation of above seven hundred feet above the Missouri at Fort Leavenworth, or some five hundred feet below the level of the exposures mentioned at the Smoky Hills, our deceased friend, Mr. Henry Prattan, saw near Wyeth's creek, in 1853, the following exposures in descending order:

1st. Slope, thickness not given.

2nd. Yellow and whitish limestone filled with casts
of *Inoceramus*, referred by him to *I. mytiloides* } No. 3, Nebraska Sec.
=*I. problematicus*.

3rd. Slope, thickness not given. No. 2, Nebraska Sec.

4th. Red ferruginous sandstone with leaves of di- } No. 1, Nebraska Sec.
cotyledonous trees.

A short distance west of this exposure Dr. J. G. Cooper informs us he saw outcrops of red sandstone in the valleys at about the same elevation; and above this, exposures of dark gray laminated clay answering exactly the description of No. 2, of the Nebraska section, while above the latter, near the tops of the hills, he met with outcrops of light colored limestone containing numerous casts of *Inoceramus*.

At other localities not far to the southwest of the foregoing, Mr. Hawn saw exposures of light coloured limestone forty-five feet in thickness, containing great numbers of *Inoceramus* which we referred, from specimens sent by him, to *I. problematicus*. Below this there was a slope of twenty-seven feet in which he saw no exposures, while still lower he observed outcrops of dark ferruginous and yellow sandstone, and various colored clays with impressions of leaves resembling, as he supposed, those of oaks and willows. (See his section published by us in the Proceedings of the Academy of Natural Sciences of Philadelphia. May. 1857.)