

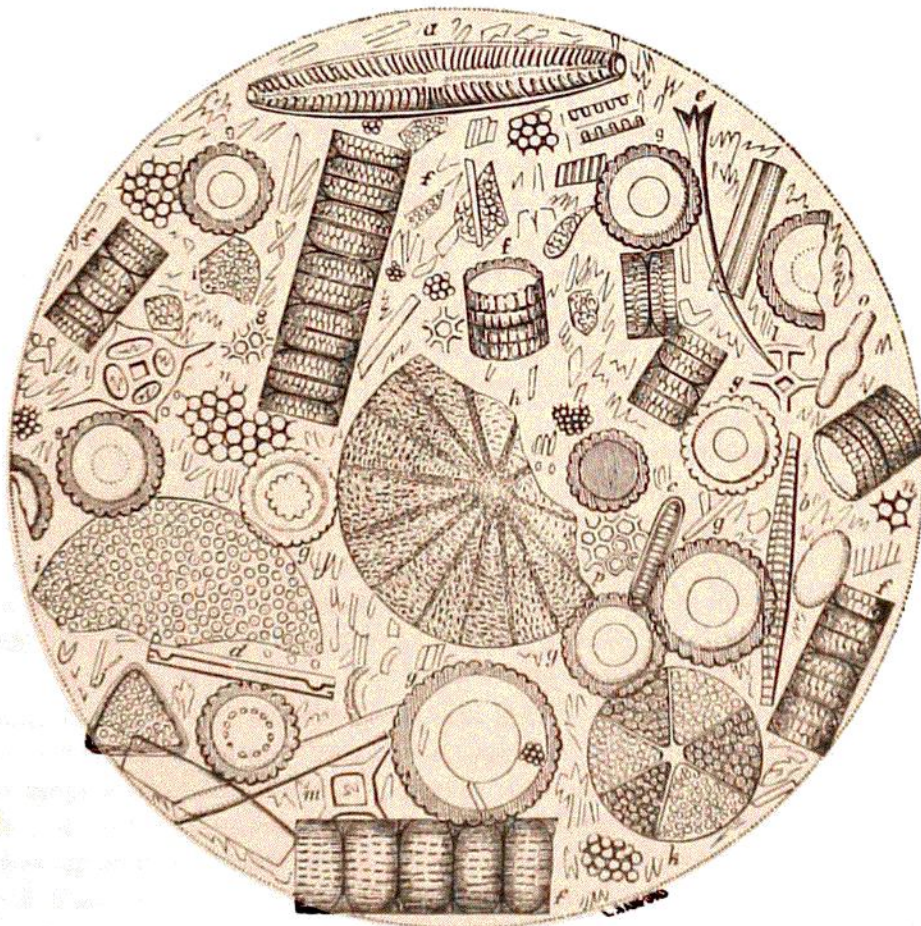
Oreodon beds of sandstones and clays, often nodulous, about 150', with 100' of overlying clays (Wortman); and above these the *Protoceras* beds, sandy below, but clayey above, 150', in all 480' thick (Wortman).

In the region of these basins the strata, owing to erosion by rills and streams from occasional rains, stand in isolated earthworks or embankments, pyramids and spires, over the great plain, looking like a field of desolate ruins, parched and barren in the dry climate. To this region was first applied the term "Mauvaises Terres," or Bad Lands.

In Oregon, on John Day and Des Chutes rivers, near 120° W., is another lake-basin, the *John Day basin* (D, Fig. 1468), hardly 500 square miles in area. The *Miohippus* beds of Marsh, the upper portion, have afforded remains of Miocene Mammals, apparently of a little later date than the White River beds. Marsh correlates with the Oregon *Miohippus* beds the *Protoceras* beds of Wortman, stating that the latter contain the Oregon species *Miohippus annectens* Marsh; and he further makes his *Ammodon* beds of the Miocene on the Atlantic border essentially of the same horizon.

The *Loup Fork Group*, of the Upper Miocene, was so named from a river in Central Nebraska. The beds cover for the most part the Nebraska lake region (marked N on the map), and its extension southward to Texas, New Mexico, and Mexico. King gives the thickness in Wyoming as 2000'. To the eastward, on the White River, it is 150'. The *Deep Creek beds* of Montana, first made known by S. B. Grinnell and E. S. Dana (1876), or the *Ticholeptus beds* of Cope, are referred by W. B. Scott to the earlier part of the *Loup Fork* epoch. The basin is situated near Camp Baker, 50 miles east of Helena, along

1469.



RICHMOND INFUSORIAL EARTH. — *a*, *Pinnularia peregrina*; *b*, *c*, *Odontidium pinnulatum*; *d*, *Grammatophora marina*; *e*, *Spongiolithis appendiculata*; *f*, *Melosira sulcata*; *g*, transverse view, *id.*; *h*, *Actinocyclus Ehrenbergii*; *i*, *Coscinodiscus apiculatus*; *j*, *Triceratium obtusum*; *k*, *Actinopterychus undulatus*; *l*, *Dietyocha crux*; *m*, *Dietyocha*; *n*, fragment of a segment of *Actinopterychus senarius*; *o*, *Navicula*; *p*, fragment of *Coscinodiscus gigas*.