

are intermediate in kinds, some Cycads being present in Greenland as well as Kansas, and evidently indicate an intermediate temperature. The flora of the Laramie, without Cycads, is, according to the same authority, "not a tropical, but a temperate flora."

The testimony as to temperature from the animal life of the Cretaceous seas bears in the same direction with that from plants. There appear to have been no true coral reefs in the British seas; but they were present beyond doubt in the Mediterranean basin. The facts lead to the inference that the temperature of the waters about the British Islands was below a mean of 68° during the coldest winter month, but not much below, while a large part of southern Europe was within the Coral-sea limit. Texas was in all probability included by the same temperature boundary, although no true coral reefs and not many species of Corals have yet been reported from the region.

The distribution of a like fauna, for the most part, in the Lower Greensand group of New Jersey, the Ripley group of the Gulf border, and the Montana division of the Cretaceous of Texas and the Western Continental Interior testifies to a nearly common temperature in the waters through this long geographical range. But it cannot be inferred that in the earlier Colorado epoch, or the later Laramie, the temperature was alike in the waters on the Atlantic border and in those of Texas or of the Interior Continental sea; for the influencing conditions were widely different; and hence, even if there were a full series of fossils, there would be marked differences in the cotemporaneous beds of the Interior and the Atlantic border. The Texas waters were within the subtorrid influences of the Mexican Gulf, with no probable source of cold in Arctic currents. But on the Atlantic border the Labrador current may have much modified the temperature of the waters, even if partly shut off by the closing of the Straits of Belle Isle. The coast had, apparently, no Cape Hatteras, and the waters of the Gulf, therefore, had free sweep from the tropics to Cape Cod; and this would have reduced the effect of any Arctic flow to a minimum.

GONDWANA LAND.

The belt of emerged land between India and South Africa, mentioned on page 737, is supposed to have continued to exist through the Jurassic and Cretaceous periods. R. D. Oldham remarks, in his paper of 1894, speaking of the contrasts of the fauna of eastern and western India, that in western India the Jurassic fossils belong to a fauna that is represented in the north of Madagascar, in northern and eastern Africa, and also in Europe, differing so completely from the fauna of eastern India, that "only a few species of world-wide range are found in both." Further, the remains of plants in the Jurassic Rájmahál series of the east coast of India are mostly identical with, or closely allied to, the species of the Uitenhage series occurring near the coast of South Africa, and now regarded as