

GEOLOGY. — *Discovery of dinosaurs, associated with a reptile and fish fauna, in the Lower Cretaceous of extreme southern Tunisia.* Note by Mr. **ALBERT F. DE LAPPARENT**, presented by Mr. Paul Fallot.*

The Dahar cliff is developed over 150 km in extreme southern Tunisia between Médenine and Dehibat. The talus, 300 m high in the middle, is constituted by a clayey-sandy continental series comprised between the Upper Jurassic and the marine Cenomanian. Ph. Thomas (1909), L. Pervinquière (1912), A. Robaux, G. Choubert, J. Flandrin, and A. Drosdoff (1942) noted fish scales and fossil wood in these facies, which much recall the “Continental Intercalaire” of the Algerian Sahara.

On the basis of these indications, and thanks to the facilities put at our disposal by Mr. G. Castany, Director of the Geological Service of Tunisia, we methodically prospected chosen points in the Dahar cliff in January 1951. The result of these researches was the recovery of an abundant and varied vertebrate fauna, whose study is in process. Dinosaur remains are recognized there as of now, the first noted in the territory of Tunisia. They are distributed as follows.

THEROPODS: 9 teeth of *Megalosaurus saharicus* Dep. and 3 teeth of another species of *Megalosaurus*.

SAUROPODS: the presence of a herbivore, close in size to *Diplodocus* but belonging to the genus *Titanosaurus*, is manifest by 6 caudal vertebrae, some dorsal vertebral processes, portions of ribs, and limb bones, especially the femur.

ORNITHOPODS: a good *Iguanodon* tooth from the upper maxilla of the right side, and a fragment of another tooth. This is the first time that *Iguanodon* is noted in Africa.

The dinosaur levels are gravels and conglomerates with very rounded elements; this fact diminishes the chances of finding whole carcasses. From this point of view, the dinosaur beds of extreme southern Tunisia much recall those of the Touat and the

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Gourara ⁽¹⁾, with this nuance that the emergent terrains where such animals could have lived, undoubtedly the Hoggar massif in the broad sense, were still further away here.

The remains of other reptiles are found with the dinosaurs.

CROCODILES: a giant crocodile, identical to that found by us first at Aoulef and collected since then in southern Morocco by R. Lavocat; more than a hundred teeth, among which at least two other species can be distinguished; a dozen vertebrae; and a coprolite.

CHELONIANS: numerous plates of a large turtle.

OPHIDIANS: a portion of a snake vertebral column, including three articulated vertebrae.

The fishes are represented by the following types of ELASMOBRANCHS: *Hybodus*, *Strophodus* (large pavement teeth), *Lamna*, vertebrae of *Platyspondylus foureaui* Haug; GANOIDS: a very large *Lepidotes* is abundant everywhere, represented by hundreds of scales and button-shaped teeth; DIPNOANS: eight teeth of *Ceratodus africanus* Haug. These fish will have to be compared to those from the Wealden, collected by Italian geologists in Tripolitania in the continuation of the same cliff; these are forms typical of the Saharan “Continental Intercalaire”. The continental character of the sediments, manifest by the facies and the presence of *Ceratodus*, is not cancelled by the presence of elasmobranchs because certain forms are known in fresh waters: hybodonts in the Karoo, selachians in the Ganges, and *Pristis* in the Ogôoué and Lake Onange (Gabon).

Besides their paleontological importance, our discoveries also bore a stratigraphic importance. Indeed, the vertebrae described above are found in the three superposed formations in the Dahar cliff: the lower sandstones, the middle green marls, and the large sandstones or conglomerates and pebbly sands or clays of the upper “Albian” part. To cite only one example, we collected some elements of this fauna along the entire height of the Cretaceous continental series in the magnificent section offered by the northern slope of the Touil Dehibat (Tripolitanian frontier).

Moreover, moving from south to north, the upper “Albian” part of the clays and sands is seen to pass laterally into marls and marine limestones with *Exogyra* and *Astarte*: they are increasingly developed from Douiret to Rhomerassen, and were mapped as

⁽¹⁾ A. F. DE LAPPARENT, *Comptes rendus*, 225, 1947, p. 754.

marine Cenomanian by Mr. Berkaloff further to the north on the 200,000 scale Médenine page. Because large *Lepidotes* scales with fossil wood are found again north of Rhomerassen. Therefore I think that the vertebrate fauna of the Dahar cliff goes up into the lower Cenomanian.

Two conclusions are revealed by our geological exploration of the Dahar.

On the one hand, from now on the homogenous vertebrate fauna of the “Continental Intercalaire”, known from Egypt to southern Morocco and passing by the Djoua and the Touat, is extended into extreme southern Tunisia, that is 400 km north of the Tinrhert cliff.

On the other hand, here better than anywhere else, the age of this series and this fauna can be specified, which had the tendency to be attributed too strictly, sometimes to the base of the Cretaceous (Djoua, Touat) and at other times in contrast to the Cenomanian alone (Egypt, southern Morocco). In reality, the two points of view are not opposed: we are in the presence of a homogenous reptile and fish fauna that accompanied a similar “Wealden” continental facies covering the entire Lower Cretaceous up to the lower Cenomanian included.