

ART. XXVI.—*A Note on Mud-Crack and Associated Joint Structure*; by E. M. KINDLE.

Mud-crack is mud-crack and nothing more to some geologists. It is not at once apparent that this familiar structure may become a more refined means of interpreting the past than we have yet made it. Among the things needed to extend and perfect our knowledge of the processes of desiccation is information concerning the type of mud-crack which various kinds of sediment yield.

FIG. 1.

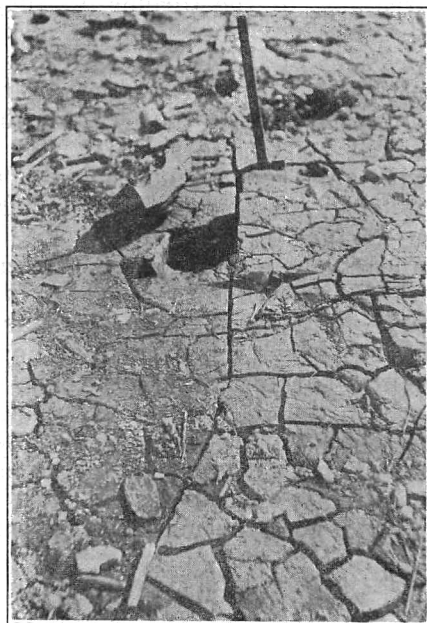


FIG. 1.—Mud-crack and associated joint plane (from hammer to bit of wood). Green's creek, Ottawa River, Canada.

The writer believes that mud-crack is worth studying and has pointed out elsewhere some of the contrasted types which can be developed by experimental work.¹

It is the purpose of this note to call attention to an

¹ Kindle, E. M.—Some Factors Affecting the Development of Mud-Cracks: *Jour. Geol.*, vol. 25, No. 2, Feb.-Mar., 1917.

example of mud-crack associated with joint structure. The association in the same sediments of these two structures is, so far as known to the writer, seldom met with.

The fine-grained blue Pleistocene clay which is uncovered in late summer along the banks of the Ottawa river develops mud-crack of the ordinary fresh-water type. Associated with the short discontinuous fissures defining the polygons of this mud-crack a long straight line is sometimes seen which has all the characteristics of a joint plane.

The mud-crack included in the photograph shows one of these shrinkage joints (marked by the hammer) and the associated mud-crack fissures. The considerable length and directness of the former distinguish it from the latter very clearly. The block of clay to the left and slightly in front of the hammer was removed from the nearby depression adjacent to the joint in order to show the smooth surface like that left by the slash of a sharp knife which marks the sides of this joint plane. In contrast with this type of surface the faces of the polygons bounded by mud-crack fissures lack the smooth clean-cut plane surface of the joint.

The joint and the mud-crack give the impression of having been developed simultaneously. It is possible, however, that the joint plane was present as a closed fissure before the mud-crack was formed and opened during the development of the mud-crack. The joint seems clearly to belong in the class of shrinkage joints. If, as seems probable, it developed during the same desiccation period as the mud-crack it must have formed in advance of the mud-crack polygons during an early stage of the drying since very few of the mud-crack fissures cross it.