

A PHYSIOGRAPHIC SURVEY OF THE TERRE HAUTE AREA— REPORT OF PROGRESS.

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The physiographic survey of the Terre Haute area reported last year has been continued during the past season and extended across the Wabash valley to the top of the east bluffs. A strip six miles wide, north and south, has been completed, and we have been brought face to face with the problem of the sand and gravel terrace, three miles and more in width, 50 feet above the river and more than 100 feet deep, which extends along the east side of the valley a distance of 30 miles. Within the area surveyed its generally level surface is traversed by several irregular north-south ridges, which rise to a nearly uniform height of 510 feet A. T. These are interpreted as being bars laid down by a loaded and probably braided stream. In some places these bars are capped by subsequent eolian deposits. The materials of the terrace are everywhere fairly well assorted and stratified, with frequent cross bedding, where the strata dip down stream and suggest local delta formation. The strata in vertical section often display a great variety and testify to frequent local changes in the velocity of the depositing stream. Boulders up to two or three feet in diameter are common and are attributed to the melting of floating ice.

The terrace heads 12 miles north of Terre Haute in Parke Co., where the Shelbyville moraine of the Wisconsin ice sheet crossed the Wabash valley. At this point the problem is complicated by the extension of the terrace up the valley of Raccoon creek to the northeast where it is more than a mile wide. The final solution requires the extension of the survey to the Shelbyville moraine and up the Raccoon valley to a distance not yet determined. This work has been begun, but is not yet completed. So far as studied, the terrace appears to be an outwash plain, or valley train, laid down by a constantly overloaded stream, or streams, which issued from the margin of the Wisconsin ice sheet. Whether this is the true interpretation, whether the train originally occupied the whole width of the valley, and, if so, what were the agencies and conditions of its removal from

the west side of the valley, are problems which we hope to attack in the future.

The margin of the east bluff is capped by a broad ridge of sand, standing 20 to 30 feet above the general level of the till plain to the east of it, and exhibiting in many localities characteristic eolian topography. The surface sands are underlaid by loess, and the whole deposit is interpreted as having been blown up by westerly winds from the valley below.

The small streams from the east which break through the bluff have wide flat-floored valleys opening upon the terrace with accordant grades. In their natural state, none of them ever extended their channels across the terrace to the river. Their waters, ponded in depressions between the bars, sunk into the sand or evaporated. The depressions are generally puddled with a thin coat of lacustrine silt.