Loess and Sand Dune Deposits in Vigo County, Indiana.

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Loess deposits are mentioned in various places as occurring along the bluffs of the lower Wabash river. Dr. J. T. Scovell, who in the twenty-first annual report of the State Geologist has given the most extended and detailed description of the geography and geology of Vigo county yet published,

Looking west along National Road from upland along east side of Wabash Valley.

mentions in a single sentence that "Along the eastern margin of the main valley there are extensive areas of dune sand and at some localities in the eastern bluffs there are thick beds of loess." So far as I have observed slight reference has been made to the distribution, appearance and extent of the loess or loess-like deposits of the lower Wabash valley. The loess is so involved with sandy material that it is difficult to distinguish between the two and interstratified clay. The inclination in examining these materials is to consider them but different phases of the same thing. The interstratified clay does not contain boulders and may be weathered or chemically decomposed loess, while the sandy covering may be due to wind assortment.

Occasional gasteropod shells of very small size are found. The deposits occur in ridges and dunes usually within less than a mile from the crest of

Dune in Highland Lawn Cemetery. North side National Road.
Note ridge beyond building at left and opposite a cross roads at right.

Dunes south of National Road ¼ mile. Looking west from level upland.
The valley is just beyond.

the east bluff and often within a few rods. Sometimes a single continuous ridge of uniform height and width crowns the bluff. In places there are

successive ridges two or three and in instances four. In still other places the topography takes the form of dunes, low domes with no characteristic order or grouping. The gradients of the ridges on the leeward or east side if often remarkably steep. The height of the ridges is in a few cases as much as twenty-five feet. In most instances the height is not more than half the figure stated. An interesting observation is that the dunes and ridges extend along the north sides of tributary valleys still keeping a north-south direction in the ridges, which in some places are arranged in etchelon. This is noticed on the north side of Honey creek. The surface on the north side of Otter creek valley appears as one long wave after another, cloaking the bluff front

Blake Hill. A sand dune north side National Road.

and crest. This arrangement of ridges along the re-entrant valleys indicates that the valleys were made before the deposits. The direction of the bluffs has evidently influenced the deposition of the material as a section of the river bluffs running directly east-west on the south side of Honey creek shows no dunes or ridges. The deposits also show a marked relation to the terrace area in the valley. Where a broad stretch of terrace lies below the bluffs the ridges and dunes are more strongly developed. Where flood plains approach the bluffs the deposits on the crest and bordering uplands decrease or disappear. Conclusions as to the cause of the deposits and their source seems to be amply justified by the evidence that the deposits are wind

blown, the materials, including the shells being collected from the terrace surface from the silts deposited by the valley-wide stream. This deposition probably occurred soon after the stream abandoned the terrace level and withdrew to the present deeper third of the valley width. The work was done mainly before the invasion by vegetation of the terrace, bluff front and upland border, after the retreat of the ice sheet from the region. The loess may be a wind deposit from the bare valley at the close of the Illinoisan ice invasion. This dust may have weathered through a long interglacial period of time to be covered with later deposits of dust and fine sand swept over the valley from the border of the Late Wisconsin ice which did not reach the present site of Terre Haute, but whose strong moraine lies fifteen or twenty miles upstream near Clinton and Rockville.