

# Proceedings of the Iowa Academy of Science

---

Volume 22 | Annual Issue

Article 28

---

1915

## The Extension of the Wisconsin Drift Southwest from Des Moines

John L. Tilton

Copyright ©1915 Iowa Academy of Science, Inc.

Follow this and additional works at: <https://scholarworks.uni.edu/pias>

---

### Recommended Citation

Tilton, John L. (1915) "The Extension of the Wisconsin Drift Southwest from Des Moines," *Proceedings of the Iowa Academy of Science*, 22(1), 229-232.

Available at: <https://scholarworks.uni.edu/pias/vol22/iss1/28>

This Research is brought to you for free and open access by the Iowa Academy of Science at UNI ScholarWorks. It has been accepted for inclusion in Proceedings of the Iowa Academy of Science by an authorized editor of UNI ScholarWorks. For more information, please contact [scholarworks@uni.edu](mailto:scholarworks@uni.edu).

THE EXTENSION OF THE WISCONSIN DRIFT SOUTH-  
WEST FROM DES MOINES.

JOHN L. TILTON.

At the last meeting of the Academy I called attention to an extension of the Wisconsin drift south past Valley Junction into the region which was generally understood to be within the area of Kansan drift. It was with a view to extending observations further south in that direction than was possible in the time previously at my disposal that trips were made in 1914 extending the area examined east to the Army Post, west to the ravines in the southwest portion of Polk county, and as far south as Norwalk, Cummings and Orillia in Warren county and west to Madison county.

In addition to the district of Wisconsin topography described a year ago, another equally distinct area has been found two miles to the south, in section 35, Nw. qr. of the Se.  $\frac{1}{4}$ . Here the eastern one of two small ponds is partly drained, but the one a few rods to the west is as distinctly characteristic of Wisconsin drift topography as the one previously described in section 23. These two small ponds are faintly marked on the map of the Des Moines quadrangle. A mile to the west in section 34, Sw. qr. of the Ne.  $\frac{1}{4}$  is another marshy area in the upland. This area is partly drained. The fact that the road extends across the outlet and that the small culvert is above the level of the pool suggests the suspicion that the water has been dammed back by the road. However, the bottom of the pool is slightly below the level that has been filled in, justifying the inference that here is a small upland pond that erosion had nearly but not fully drained. Several other ravines were noted headed in unusually dark soil along depressions in the upland. One is in the south central part of section 23, within a quarter of a mile of the section line. Another is half a mile to the south, in the north central part of section 26.

On the low ground in the eastern central part of section 22 the map locates a small pond that is of a very different character than the ones above mentioned. This pond is located in the line of drainage along the foot of the hills bounding the river

valley on the east. Just to the north of this small pond is a rather large alluvial cone and fan composed of material washed out along ravines and deposited in such a way as to dam the drainage along the bluff. To the south of the pond a smaller deposit from smaller ravines determines the western limit of the pond, leaving a shallow, circular depression in which water accumulates in wet weather. The pond is not a bayou.

In the upland which bears evidence of Wisconsin drift topography several tests to determine the depth of weathering indicated an absence of lime. In many places along the road a substratum of stratified sand was observed through which water might transport lime leached from above. Had tests revealed the presence of lime in the upland the fact would have constituted additional evidence of Wisconsin drift; but the absence of lime in so thin and porous a surface deposit is not surprising. It is possible that deeper exposures than are to be found in the upland may still remain unleached. In the low divides a mile west of Valley Junction the effect of leaching was found to a depth of two feet and eight inches, effervescence occurring below that depth.

From the evidence now obtainable it appears that the area of Wisconsin drift extends through sections 23, 26 and 35, and probably into 36 on the east and 34 on the west. In all directions from this area the erosional topography of the Kansan drift area is conspicuous. If any Wisconsin drift were ever there it has been eroded away since, or its presence rendered inconspicuous by the complete drainage of the upland.

The stratified sand, so evident along the road, is beneath the Wisconsin drift, not an outwash from it.<sup>1</sup> Along the road in the southern part of section 14 it underlies a bed of loess. While it is possible that the sand may have been washed out from the Wisconsin drift prior to the extension of that drift sheet south of the river (in which case the loess would be post-Wisconsin) that is not probable. Similar deposits of sand are found in numerous places on the top of the Kansan drift where there is no evidence whatever that the Wisconsin drift or an outwash from it could have extended there.

<sup>1</sup>Is this sand continuous beneath the Wisconsin drift to the Iowan drift; and is it then continuous with sand above or below the Iowan drift? This is an important question, in view of recent discussions. Up to the present the question remains unanswered.

With a portion of the Wisconsin drift extending south from Valley Junction, did the deposit form an obstruction to drainage that ponded the water west along what is now the valley of the Raccoon river? Such a barrier, if it ever existed, was



FIG. 5.—From evidence now obtainable it appears that the area of Wisconsin drift south of Valley Junction extends through sections 23, 26 and 35, and probably into 36 on the east and 34 on the west (township 78 north, range 25 west). (Topography taken from the Des Moines Sheet.)

too slight for the evidence of it to persist. The steep ends of the low divides a mile west of Valley Junction are in themselves not satisfactory evidence of an old shoreline; and nowhere else is any evidence noted that the flat on which Valley Junction is located is the old bed of ponded water. The border line between the flat with sand and gravel beneath it to a depth of at least thirty feet (at the pumping station of the Valley Junction water plant) and the low upland present an appearance of conditions similar to those observed in areas of Kansan drift further south. With absence of distinct evidence of ponding, this flat must be considered a portion of the terrace found along the rivers. The origin and age of this terrace I now wish to consider in a separate paper on that subject.