

MAN AND TOPOGRAPHY IN SOUTHWESTERN WISCONSIN

W. O. BLANCHARD, UNIVERSITY OF ILLINOIS

The topography of southwestern Wisconsin, south of the Wisconsin River and west of the glaciated section, is in marked contrast to that farther east. The first is characterized by a rough, maturely dissected surface with precipitous slopes and castellated rocks; the second by gently rolling topography with the rounded hills, gentle slopes and shallow valleys typical of a recently glaciated region.

Within the district itself the degree of dissection is not uniform. Roughly parallel to, and about 10 to 12 miles south of the Wisconsin River is the Military Ridge. It represents the crest of the Galena Trenton cuesta. The escarpment slope of the cuesta drops off rapidly from the Ridge to the flood plain of the Wisconsin River 500 feet below. On the opposite side the back slope dips gently southward to the Wisconsin-Illinois state line about 35 miles away. This latter slope is about one-fourth the former and the dissection of the surface is, therefore, correspondingly less.

Of the various geographical factors which have operated to differentiate man's activities in this region as a whole from those in the region to the east, as well as those on the escarpment from those on the back slope, topography has by all odds been the most important. Differences of climate, position and resources are negligible in comparison with those of relief.

The handicap of a maturely dissected terrain is felt directly or indirectly by all the inhabitants and in all occupations. Along two lines—communications and agricultural activities—the influence is most marked. Some of these are indicated below.

Because of the geographical location of southwestern Wisconsin on an air line between the great transportation centers of Chicago and the Twin Cities, one would expect it to be on the line of the great transcontinental

route. However, the topography of the region repels rather than invites the great trunk routes, and they bend to avoid it, leaving this section an island in the stream of traffic which sweeps by on either side. As a result the railroad service here is typical of branch lines—second rate rolling stock and limited accommodations in general.

In the matter of highways, rough topography has placed a heavy burden in the cost of construction, operation and maintenance as compared with the glaciated counties immediately to the east.* By selecting items of construction which bear intimate relations to topography such as the cost of (1) surveying, (2) grading, (3) bridges and culverts, and (4) guard rail, some idea may be gained of how real an expense these communities are put to in road construction. For the items named the difference in cost of construction of the state aid highways from 1914-1917 inclusive averages \$1,531.73 per mile of road greater than in the level counties to the east. This is added cost due, not to greater expense in unit cost of materials, but to greater mileage of guard rail, more bridges, more grading and greater difficulty in surveying. The total additional cost for these 4 items for the state aid roads built during this period was almost \$25,000 for three counties.

The absence of gravel in this region, so common as mounds and ridges in glaciated sections, has resulted in a large proportion of the roads remaining unsurfaced. Of the state aid road constructed in this region from 1912-1917 (202 miles) about 1/3 (35%) was hard surfaced. The glaciated counties built in the same period twice the mileage and hard surfaced over 9/10 of the total.**

Important as is this excessive initial cost, it is, of course, in the time and energy required to transport goods over such inferior roads as well as in the high cost

* Grant, Iowa, and Lafayette counties in southwestern Wisconsin are compared with Rock, Columbia and Jefferson counties, the nearest counties on the east wholly glaciated.

** Wisconsin Highway Commission Reports.

of maintenance that the burden bears most heavily. And it must be remembered that this region is almost entirely agricultural where commodities to be moved are heavy and comparatively cheap.

Let us now turn to the effect of topography upon the utilization of the land. Conspicuous examples illustrating their intimate relationship may be found within the region itself in contrasting conditions upon the escarpment and back slope of the cuesta.

Thus we find that the back slope in proportion to its size had, because of its more favorable relief, 50% more of its total land classed as improved. While the average farm was smaller by 37.5 acres, its value, equipped, was about 75% greater and the farmer's income was estimated at about 1/3 more than on the escarpment. Chiefly because of its more favorable topography specialization* in corn was 21% higher on the back slope, and since corn growing is usually associated with swine and butter production, specialization in these two ran 200% and 100% higher respectively. The dairy speciality of the escarpment, on the other hand, with its relative scarcity in corn and hogs, turns to cheese, in which its specialization ran 30% higher.

And finally, because of its greater agricultural productivity, we have, on the back slope, better social and economic conditions being maintained in a population twice as dense as on the rougher escarpment.

* The degree of specialization is obtained by taking the square root of the production per capita and production per acre of improved land." B. H. Hibbard.