

# Topography of Indiana—Map.

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1st. Highest elevation in the State—1,285 feet above sea level, Summit, Randolph County, eight miles south of Winchester.

2d. Lowest elevation in the State—313 feet above sea level, at the confluence of the Wabash and Ohio rivers, Posey County.

3d. Average elevation above sea level—estimated to be 700 feet.

A topographic map of an area is an expression of the surface features of that area. Such a map could be absolutely true in detail only when based upon a system of contour lines having the smallest possible intervals.

The map herewith is not offered as a piece of perfect workmanship. The elevations were derived from the data published in the Thirty-sixth Annual Report, and in the absence of complete topographic contours the boundaries of areas of different elevations could not be established with exactness, but the boundaries are generally true. The writer is willing to bear the criticism of inexactness in this first attempt at a topographic map if he can but point out the necessity for a topographic survey of the State. Indeed, any criticism will but serve to emphasize the necessity for exact information.

*A Word as to Geologic Horizons and Elevations.*—Could one but stand at some point in southeastern Indiana, say between the southeastern corner of Switzerland County and the southeastern corner of Union County, and look westward or southwestward and see the outcropping features of the geological formations of the State, they would present an ascending series, geologically speaking, from the Lower Silurian, in the extreme southeastern part of the State, up to the highest formation, the Merom sandstone, along the Wabash River on the western side of the State. Above this of course is the glacial drift. Or, to put the matter in another way, the formations are successively younger as we ascend geologically from the eastern and southeastern parts of the State to the western part, the sediments and drift of the western part having been laid last.

The picture is more difficult to draw from any viewpoint along the eastern margin of the State, from Union County northward,

The State Supervisor of Natural Gas, in his report for the year for the reason (1) that the northern two-thirds of the State are covered with a thick mantle of glacial drift; and, for the further reason, (2) that erosion has not played such a prominent part in the northern part of the State as in the southern part, where it has profoundly influenced the topography of the State.

While the above is true from a geologic standpoint, the reverse is true from a topographic standpoint. Topographically speaking, the eastern parts of the State are the highest, the slope or dip being to the south and southwest. The only exception to this southwestern slope worthy of notice is a small area in the extreme northern end of the State, which area is drained by the Pigeon, Elkhart and St. Joseph rivers. The lower courses of these rivers have been largely influenced, if not entirely changed, by the deposition of drift materials during the later glacial periods.

The elevation along the eastern margin of the State, from Franklin County to Steuben County, is from 800 to about 1,200 feet above mean sea level. Along the western margin of the State, from Posey County to Lake County, the elevation varies from 313 feet in the extreme southeastern part of Posey County to about 750 feet in Lake County.

Indiana is not a mountainous State. It has never been such. There is no geological evidence within the State of violent agitation or upheaval in the formative period of the portion of the earth's crust now known as Indiana. All of the valleys and hills and undulations in the State were formed by the erosive power of water, either glacial or stream. The differences in elevation above sea level in the State are not sufficient to cause any marked difference either in climate or in vegetation, either native or cultivated. The oak, the maple and the ash grow as vigorously in Randolph County, where the altitude is greatest, as in Posey County, where it is the least. The same thing is true of corn and wheat. The slight difference in seeding time in the southern part of the State, and seeding time in the northern part is due to latitude and not to altitude. Perhaps spring is incidentally encouraged in the southern part of the State by the prevailing south to southwestern slopes, and retarded somewhat by the flat and slopeless areas in the northern part of the State. The same thing would be true of harvest time. While differences in life and crop zones of the State have not been profoundly influenced by altitude, nevertheless an intimate knowl-

edge of the topography of the State is of inestimable value to the people in the several ways enumerated under the head of Hypsometry of Indiana in the Thirty-sixth Annual Report of the Department of Geology, as follows:

1. As preliminary maps for planning extensive irrigation and drainage projects, showing areas of catchment for water supply, sites for reservoirs, routes of canals, etc.

2. For laying out of highways, electric roads, railroads, aqueducts, and sewage systems, thus saving the cost of preliminary surveys.

3. In improving rivers and smaller waterways.

4. As bases for the compilation of maps showing the extent and character of forest and grazing lands.

5. In classifying lands and in plotting the distribution and nature of soils.

6. In locating and mapping the boundaries of the life and crop zones, and in mapping the geographic distribution of plants and animals.

7. As base maps for the plotting of information relating to the geology and mineral resources of the country.

8. In connection with questions relating to State, county and town boundaries.

9. As a means of promoting an exact knowledge of the country and serving teachers and pupils in geographic studies.

10. In connection with legislation involving the granting of charters, rights, etc., when a physical knowledge of the country may be desirable or necessary.