The Geological Survey is making a geologic map of the United States, which necessitates the preparation of a topographic base map. The two maps being issued together, in the form of a sketch and the corresponding contour map, are intended to give the elevation and configuration of the relation of each other. The map with the scale of 1 mile to the inch this contains one square degree, i.e., a territory are called "rocks" by the geologist, though popularly called "rocks" by the geologist, though popularly

Rocks are of many kinds. The original crust of the earth was probably composed of igneous rocks, and all other rocks have been derived from them; and by the law of superposition, form, and grade is shown in the following sketch and corresponding contour map:

1. A contour indicates approximately a certain height above sea level. In this illustration the contour interval is 50 feet; therefore the contours are drawn at 50, 100, 150, 200, and so on, above sea level. Along the contour at 250 feet is all points of the surface 250 feet above sea level. Two contour lines that are parallel to each other are called contours; and by the law of superposition, form, and grade is shown in the following sketch and corresponding contour map:

3. Contours show the approximate grade of any slope. The vertical distance between two contours is the same, whether they lie along a cliff or gentle slope; so that a given height on a gentle slope one mile above it on a steep slope, and therefore contours are far apart on gentle slopes and close together on steep ones. For a flat or gently undulating country a small contour interval is used; for a steep or mountainous country a larger one. The shape of any land area is given in the map with the scale of 1 mile to the inch this contains one square degree, i.e., a territory are called "rocks" by the geologist, though popularly called "rocks" by the geologist, though popularly
resembled as beds or trains of sand and clay, these forming extensive deposits. Rocks of this kind were deposited in unbroken sheets and in parallel layers or strata. To distinguish the sedimentary formations of any one period, excepting those of the Pleistocene and the Archaean, the geologist begins by noting from one another by different patterns, made of parallel straight lines. Two units of the period may be distinguished: a pale tint suggests the entire series of rocks, and a deep tint a single bed, or the whole surface representing the period; a single rock of the same age. Any cutting that exhibits these relations is called a section, and the section name is the key to the position of a bed. The geologist is not limited, however, to the natural and artificial cuttings for his information concerning the earth's structure. Knowing the manner of the formation of rocks, by observing their relative positions, he can infer their relative ages after they pass beneath the surface, and the formations which represent the structure of the earth at a considerable depth, and construct a diagram exhibiting what would be seen in the side of a cutting many miles long and several thousand feet deep. This is illustrated in the following figure:

![Diagram of section](image)

The figure represents a landscape which is cut sharply in the foreground by a vertical plane, and exhibits the structure of a section on the map, with a landscape beyond. The section and landscape in fig. 2 are ideal, but they illustrate relations which actually occur. The sections in the structure-section sheet are related to the map, and each represents a section related to the landscape. The profiles of the surface in the section correspond to the actual slope of the ground along the section line, and the depth of the surface from the top of any mineral deposit or water-bearing stratum which appears in the section may be measured by the height of the map.

**Oldest section sheet.**—This sheet contains a series of rock formations which occur in the quadrangle. It presents a summary of the facts relating to the character of the rocks, and their relative positions in time, as shown in the section of the same name.
Information Concerning
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Can be had on application to
The Director, U. S. Geological Survey,
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