GEOLeGIC ATLAS
OF THE
UNITED STATES
BOISE FOLIO
IDAHO

INDEX MAP

LIST OF SHEETS

DESCRIPTION
TOPOGRAPHY
HISTORICAL GEOLOGY
ECONOMIC GEOLOGY
STRUCTURE SECTIONS

LIBRARY EDITION

WASHINGTON, D. C.
ENGRAVED AND PRINTED BY THE U. S. GEOLOGICAL SURVEY

BAILEY WILLIS, EDITOR OF GEOLOGIC MAPS
S. J. KUBEL, CHIEF ENGRAVER
1898
EXPLANATION

The Geological Survey is making a geologic map of the United States, which necessitates the preparation of a topographic base map. The two are being drawn together in the form of an atlas, the parts of which are called folios. Each folio consists of a topographic base map and geologic maps of a small area of country, together with explanatory and descriptive texts.

THE TOPOGRAPHIC MAP.

The features represented on the topographic map are of three distinct kinds: (1) inequalities of surface, called relief; as plains, plateaus, valleys, hills, and mountains; (2) distribution of water, called drainage, as streams, lakes, and swamps; (3) the works of man, called culture, as roads, railroads, boundaries, villages, and cities.

Relief.—All elevations are measured from mean sea-level. The heights of many points are accurately determined, and those which are most important are given on the map in figures. It is desirable, however, to give the elevation of all parts of the area mapped, to delineate the horizontal outline, or contour, of all slopes, and to indicate their grade or degree of steepness. This is done by lines connecting points of equal elevation above mean sea-level, the lines being drawn at regular intervals. These lines are called contours, and the uniform vertical space between each two contours is called the contour interval. Contours and elevations are printed in brown.

The manner in which contours express elevation is shown in the following sketch and corresponding contour map:

2. Contours define the forms of slopes. Since contours are continuous horizontal lines conforming to the surface of the ground, they wind over all inequalities of surface, as ridges, confluent valleys, reentrant angles of ravines, and project in passing over prominences. The relations of contour curves and angles to features of the landscape can be traced in the map and sketch.

3. Contours show the approximate grade of an inclination. The real space between two contours is the same, whether they lie along a cliff or on a gentle slope; but to rise a given height from one level to another the steeper the slope, and therefore contours are far apart on gentle slopes and near together on steep ones. For intermediate relief contour intervals of 10, 20, 30, 50, and 100 feet are used.

Drainage.—Watercourses are indicated by blue lines. If the stream flows round the town of a city it is drawn in broken lines; but if it is a part of the year the line is broken or dotted. Where a stream sinks and reappears at the same place in another county, the course is shown by a broken blue line. Lakes, marshes, and other bodies of water are also shown in blue, approximately their drainage basins being indicated.

Culture.—The works of man, such as roads, railroads, and towns, together with boundaries of towns, counties, and States, and artificial details, are printed in black.

Scale.—The area of the United States (excluding Alaska and Hawaii) is about 9,300,000 square miles, and the map may be 1 mile to the inch. This would cover 105,000,000 square inches, and so the paper dimensions would need to be about 240 by 150 feet. Each square mile of ground surface would be represented by a square inch of map surface, and one linear mile on the ground would be represented by a line 1 inch in length on the map. This relation between distance on the ground and corresponding distance on the map is called the scale of the map. In this case it is 1 inch to 1 mile. The scale may be expressed also by saying that the number of square inches or square miles on the map corresponds to 1 square mile or 1 square mile on the ground. The symbol for the scale is: 1 inch = 1 mile, 1 inch = 1 mile. The symbol is often used for reference to the scale of the map.

Three scales are used on the atlas sheets of the Geological Survey; the smallest is 1 inch = 1 mile, the medium is 1 inch = 2 miles, and the largest is 1 inch = 4 miles. Both of these scales are used on the map of the United States.

Several maps on the atlas sheets of the Geological Survey; the smallest is 1 inch = 1 mile, the medium is 1 inch = 2 miles, and the largest is 1 inch = 4 miles. Both of these scales are used on the map of the United States. In discussing the scale of a map, the number of square inches on the map which correspond to 1 square mile is called the scale of the map. In this case it is 1 inch to 1 mile. The scale may be expressed also by saying that the number of square inches or square miles on the map corresponds to 1 square mile or 1 square mile on the ground. The symbol for the scale is: 1 inch = 1 mile, 1 inch = 1 mile. The symbol is often used for reference to the scale of the map.

Three scales are used on the atlas sheets of the Geological Survey; the smallest is 1 inch = 1 mile, the medium is 1 inch = 2 miles, and the largest is 1 inch = 4 miles. Both of these scales are used on the map of the United States. In discussing the scale of a map, the number of square inches on the map which correspond to 1 square mile is called the scale of the map. In this case it is 1 inch to 1 mile. The scale may be expressed also by saying that the number of square inches or square miles on the map corresponds to 1 square mile or 1 square mile on the ground. The symbol for the scale is: 1 inch = 1 mile, 1 inch = 1 mile. The symbol is often used for reference to the scale of the map.
forming another graduation into sedimentary deposits. Some of this glacial wash was deposited in
channels and created by the action of the argillaceous rocks and muds of sand and gravel, known as sandstone and conglomerates. The material deposited in the ice is called glacial drift; that washed from the ice onto the adjacent land is called modified drift. It is usual also to class as surficial rocks deposits of the sea and rivers that were made at the same time as the ice deposit.

Ages of Rocks

Rocks are further distinguished according to their relative ages, for they were not formed all at one time, but from age to age in the earth's history. Classification by age is independent of origin; igneous, sedimentary, and surficial rocks may be of the same age, and

When the predominant material of a rock mass is essentially the same, and it is bounded by rocks of different materials, it is convenient to call the mass throughout its extent a formation, and such a formation is the unit of geologic work. Several formations considered together are designated a system. The time taken for the deposition of a formation is determined by the time taken for that of a system, or some larger fraction of a system, a period. The rocks are mapped by formations, and the formations are classified into systems. The rocks composing a system and the time taken for its deposition are given in the system chart, for instance, Cambrian system, Cretaceous period.

As sedimentary deposits or strata accumulate the younger rest on those that are older, and the relative ages of the deposits may be discovered by observing their relative positions. This relationship holds, except in regions of intense disturbance; sometimes in such regions the disturbance of the beds has been so great that their position is reversed, or it is often difficult to determine the relative ages of the beds from their positions; then fossils, or the remains of plants and animals, are guides to show which of two or more formations is the oldest.

Strata often contain the remains of plants and animals which lived in the sea or were washed from the land into lakes or seas or were buried in surficial deposits on the land. Rocks that contain the remains of life are called fossiliferous. By studying these remains, or fossils, it has been found that the species of each period of the earth's history have a great extent different from those of other periods. Only the simpler kinds of marine life existed when the oldest fossiliferous rocks were deposited except the carboniferous period, and many of these species have been found that the kinds of each period of the earth's history have a great extent different from those of other periods. Only the simpler kinds of marine life existed when the oldest fossiliferous rocks were deposited except the carboniferous period, and many of these species have been found that the kinds of each period of the earth's history have a great extent different from those of other periods. Only the simpler kinds of marine life existed when the oldest fossiliferous rocks were deposited except the carboniferous period, and many of these.