ILLINOIS STATE GEOLOGICAL SURVEY, BULLETIN NO. 6; THE GEOLOGICAL MAP OF ILLINOIS

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Illinois State Geological Survey, Bulletin No. 6; The Geological Map of Illinois by Stuart Weller

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STUART WELLER

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ILLINOIS
STATE GEOLOGICAL SURVEY.

BULLETIN No. 6.

The Geological Map of Illinois

[Second Edition]

BY

STUART WELLER

Urbana
University of Illinois
1907

State Geological Commission.

GOVERNOR C. S. DENEEN, *Chairman.*

PROFESSOR T. C. CHAMBERLIN, *Vice Chairman.*

PRESIDENT EDMUND J. JAMES, *Secretary.*

H. FOSTER BAIN, *Director.*

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LETTER OF TRANSMITTAL.

STATE GEOLOGICAL SURVEY,
UNIVERSITY OF ILLINOIS,
URBANA, ILL., NOV. 5, 1907.

To Governor C. S. Deneen, Chairman, and Members of the Geological Commission:

I respectfully submit herewith manuscript for a second edition of Dr. Stuart Weller's geological map of Illinois with the recommendation that it be printed as bulletin 6 of the present series.

In June, 1906, in transmitting the manuscript for the first edition I made the following statement:

"It is a well founded practice to begin new work with a careful digest of material already on hand and available. With this thought in mind Dr. Weller was instructed soon after his appointment as geologist of this survey, to compile in the form of a geological map such existing information regarding the formations of the State as might be available. It was believed that such a compilation would throw into sharp relief the areas in which accurate and inaccurate surveys already had been made, and would permit of economical direction of future work. The map herewith transmitted is the result. It will be seen that it is very greatly generalized, and the need of additional detailed work in many portions of the State is evident. The present map will, however, serve as an excellent base upon which to make corrections as the present survey progresses. Since it will be impossible to cover the entire State with detailed maps for some years, and since no geological map of the State is now available for general distribution, it is recommended that a small edition be printed for the use of the field parties of the survey, the schools of the State and the persons interested in its mineral resources.

"In using this map it should be remembered that it is merely a summary of the best information available at the time of publication. There are probably many gross errors, which it will be the purpose of the present survey to correct. The map, as Dr. Weller indicates, is based largely on that published some years ago by Dr. Worthen, and the conditions under which the Worthen survey was made were not such as to permit of the modern degree of detail and accuracy. Geology

is a progressive science, and in the years since the older survey was discontinued, study of the geology of the adjacent states, together with the development of more refined methods of research, render it possible not only to make a more accurate, but a more useful map than formerly was expected. It is proposed from time to time to issue new editions of the present map, incorporating in each such additional data as may be available at the time of publication and suitable to its scale."

At the time it was not anticipated that a new edition would be so promptly demanded, but early in the present year the small number of copies of the first remaining, and the large number of corrections which it was possible to make were deemed sufficient to warrant a new edition. The map was accordingly revised in February and printed and delivered in June. Owing to various causes the sending forward of the text has been delayed till the present. This is fortunate in that it permits a somewhat fuller revision than would have been possible and it illustrates the rapidity with which development is taking place that the map itself it somewhat out of date. In the text Dr. Weller discusses briefly the various formations and the changes in their delimination and definition which now seem necessary.

On the present map, as before, the shipping coal mines of the State are indicated on the basis of the Peabody atlas prepared by Mr. A. Bement and courteously placed at our disposal by Mr. Francis S. Peabody. These locations have been revised in places by our own field men as well as by the State mine inspectors to whom we are therefore under obligations. The lead, zinc and fluorspur producing localities are indicated as are also the producing oil pools. The developments of the present season have greatly extended the latter and many of the smaller pools shown separately on this map are now known to be connected. The scattered occurrences of oil and gas in the State are not indicated. It is to be hoped that before a new edition of the map is called for some of these may be in regular production.

It is hoped in future editions of this map to show not only revisions of the geology but the location of more and more of the mineral industries of the State as the data in our possession becomes sufficiently complete.

Very respectfully,

H. FOSTER BAIN,
Director.

THE GEOLOGICAL MAP OF ILLINOIS.

[*Second Edition*]

By Stuart Weller.

INTRODUCTION.

Purpose of a Geological Survey—The position of the natural economic products which exist within the crust of the earth in any region, is determined either by reason of the physical conditions present at the time of formation of the rocks in which they are contained, or by reason of subsequent dynamic changes. Thus beds of coal, limestone, sandstone, clay, etc., which may be termed primary economic products, are where they are in the earth's crust by reason of certain peculiar local conditions which have been present in that locality at some past time in the history of the earth; the present position of most metallic mineral deposits, on the other hand, and also of petroleum, is usually determined first, by certain structural features within the earth's crust, such as faults and folds, which have influenced the secondary segregation of these deposits; and, second, by the peculiar character and texture of the rocks which are affected by the folding and faulting.

It is the task of the geologist to investigate the ancient history of the earth, to observe the peculiar characters of the rock strata, and to determine, if possible, the conditions under which they have been formed; also to investigate the changes through which the strata have passed since their deposition. All these observations are recorded graphically upon the geological maps which the geologist constructs. These maps may be of little or of great value from an economic or a historical point of view, dependent wholly upon the accuracy and detail with which the facts of the earth's history are recorded upon them.

Sources of Material—The accompanying geological map of Illinois makes no pretense of entire accuracy, or of properly differentiating in all cases the geological formations of the State. This second edition of the map has been compiled from such published and unpublished data as are available, including such information as has been gathered during the first season's field work of the survey. The text accompanying the map, however, has been written after the close of the second