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WALDEMAR LINDGREN & FREDERICK LESLIE RANSOME

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DEPARTMENT OF THE INTERIOR

UNITED STATES GEOLOGICAL SURVEY

CHARLES D. WALCOTT, DIRECTOR

REPORT OF PROGRESS

IN THE

GEOLOGICAL RESURVEY OF THE CRIPPLE CREEK DISTRICT, COLORADO

BY

WALDEMAR LINDGREN AND FREDERICK LESLIE RANSOME

WASHINGTON

GOVERNMENT PRINTING OFFICE

1904

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LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR,
UNITED STATES GEOLOGICAL SURVEY,
Washington, D. C., November 3, 1904.

SIR: I have the honor to transmit herewith the manuscript of a preliminary report on a "Resurvey of the Cripple Creek district of Colorado," by Messrs. Waldemar Lindgren and F. L. Ransome, under my general supervision.

Although only ten years had elapsed since a careful study of the geology of this district was made by Messrs. Cross and Penrose, the people of Colorado had been so strongly impressed with the economic importance of a scientific examination of the ground opened by mining operations during that period, that they urgently requested this resurvey and have materially assisted in its execution.

The present report, made in advance of the final laboratory examinations, is a summary of those facts that bear upon the economic development of the region and are of immediate importance to the miners. I therefore request that it be published with the least possible delay, that its results may be promptly available to all interested in the region.

Very respectfully,

S. F. EMMONS,
Geologist in Charge Section of Metalliferous Deposits.

Hon. CHARLES D. WALCOTT,
Director United States Geological Survey.

REPORT OF PROGRESS IN THE GEOLOGICAL RESURVEY OF THE CRIPPLE CREEK DISTRICT, COLORADO.

By WALDEMAR LINDGREN and FREDERICK LESLIE RANSOME.

INTRODUCTION.

The Cripple Creek gold deposits were discovered in 1891. Shortly afterwards, in 1894, an examination of the new district was undertaken by the United States Geological Survey, Mr. Whitman Cross having charge of geology and petrography and Mr. R. A. F. Penrose, jr., undertaking the examination of the mines. Their report, accompanied by a geological map, was published in the Sixteenth Annual Report of the Geological Survey, Part II, pages 1–207, and has for the last ten years served as a useful and accurate geological guide to mining operations.

With the astonishingly rapid development of the Cripple Creek mines the opportunities for geological study multiplied, revealing great complexity of vein phenomena and stimulating a desire for further investigation, particularly with a view of obtaining some evidence as to the persistence of the veins in depth. This desire found expression in a request by citizens of Colorado for a reexamination of the district by the United States Geological Survey and in an offer of cooperation, whereby the cost would be equally divided between the State of Colorado and the National Survey. The necessary amount having been subscribed in Cripple Creek, Colorado Springs, and Denver, the State contribution was put in the hands of Mr. John Wellington Finch, State geologist of Colorado, and by him disbursed. The cordial thanks of the geologists in charge of the work are due to Mr. Finch for his hearty and efficient cooperation.

The reexamination began with a thorough revision of the topographic map of Cripple Creek by Mr. R. T. Evans, Mr. E. M. Douglas in charge. This involved a great deal of painstaking work, nearly every prospect hole being located, as well as all shafts and tunnels. The new map is on the scale of 1:19,495, or about 2½ inches to the mile, and includes practically the same area as the old map, a small strip only being added on the western side, so that the total area mapped is about 40 square miles. The small developments outside of this area