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S. R. CAPPS & B. L. JOHNSON

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DEPARTMENT OF THE INTERIOR
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THE ELLAMAR DISTRICT, ALASKA

BY

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AND
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PREFACE.

By Alfred H. Brooks.

Reconnaissance surveys of Prince William Sound, begun in 1898 and continued from time to time, were completed in 1908. These investigations have indicated the general distribution of the mineral resources and something of the larger geologic features. Meanwhile the advancement of both gold and copper mining made evident the need of more detailed information, and for this reason the survey of the Ellamar district here set forth was made. Studies of the other important mining localities are planned, but to carry out such a plan it is necessary to make detailed topographic base maps. The topographic map of Port Valdez district was completed in 1912 and the geologic survey and study of mineral resources was begun in 1914.

The study of the Prince William Sound region indicates that its geology is so complex that it can be mastered only by a detailed survey. This report is the first result of a series of such surveys planned. The results presented show a decided advance on those of the reconnaissance surveys, but it must be remembered that the survey of one small area, especially in the absence of any paleontologic evidence, may not yield a definite clue to the stratigraphic sequence. The survey of the Ellamar district confirms the previous larger grouping of the formations into the Valdez and Orca groups. As was expected, it also indicates that both these groups may be divided into smaller stratigraphic units. In this report the Orca group has been so subdivided. These formations are not named in this report because they are not yet sufficiently well defined to give assurance that they will have a permanent place in geologic literature.

Mr. Johnson, who is in large measure responsible for the account of the ore deposits in this volume, has arrived at somewhat different conclusions in regard to their origin from those reached by previous investigators. The occurrence of the ores in zones of fracture and shearing along fault planes is established, and Mr. Johnson has proved that the ore bodies, in part at least, are replacements of the crushed rock. Many of the facts presented indicate that the ores are in large part due to such replacement. Evidence is also adduced to show