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PART I.—METALS AND NONMETALS EXCEPT FUELS

F. L. RANSOME AND HOYT S. GALE

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CONTRIBUTIONS TO ECONOMIC GEOLOGY, 1913.

PART I. METALS AND NONMETALS EXCEPT FUELS.

F. L. RANSOME and HOYT S. GALE, *Geologists in charge.*

INTRODUCTION.

This volume is the twelfth of a series that includes Bulletins 213, 225, 260, 285, 315, 340, 380, 430, 470, 530, and 540, "Contributions to economic geology" for 1902, 1903, 1904, 1905, 1906 (Pt. I), 1907 (Pt. I), 1908 (Pt. I), 1909 (Pt. I), 1910 (Pt. I), 1911 (Pt. I), and 1912 (Pt. I), respectively. These bulletins are prepared primarily to insure prompt publication of the economic results of investigations made by the United States Geological Survey.

As the subtitle indicates, the papers included are of two classes—(1) short papers giving comparatively detailed descriptions of occurrences that have economic interest but are not of sufficient importance to warrant a more extended description; (2) preliminary reports on economic investigations the results of which are to be published later in more detailed form.

These papers are such only as have a direct economic bearing, all topics of purely scientific interest being excluded. They have been grouped according to localities or subjects treated, and each group has been issued as an advance chapter as soon as it was ready.

By means of the bibliographies accompanying the several groups of papers, these volumes also serve as a guide to the economic publications of the Survey and afford a better idea of the work which the organization is carrying on for the direct advancement of mining interests throughout the country than can readily be obtained from the more voluminous final reports.

Brief abstracts of the publications of the year are given in the annual report of the Director. The complete list of Survey publications affords, by means of finding lists of subjects and of authors, further aid in ascertaining the extent of the Survey's work in economic geology.

Since 1905 the annual economic bulletin has been printed in two parts, the second part comprising papers on mineral fuels. These volumes for 1906, 1907, 1908, 1909, 1910, 1911, and 1912 are Bulletins 316, 341, 381, 431, 471, 531, and 541. Bulletin 581 forms Part II of the "Contributions" for 1913.

The reports on work in Alaska have been printed in a separate series since 1904, the volumes so far issued being Bulletins 259, 284, 314, 345, 379, 442, 480, 520, 542, and 592.