CONTRIBUTIONS TO ECONOMIC GEOLOGY
(Short Papers and Preliminary Reports)

1920

Part I.—Metals and Nonmetals Except Fuels

F. L. Ransome, H. S. Gale, and E. F. Burchard
Geologists in Charge
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CONTRIBUTIONS TO ECONOMIC GEOLOGY, 1920.

PART I. METALS AND NONMETALS EXCEPT FUELS.

F. L. RANSOME, H. S. GALE, and E. F. BURCHARD, Geologists in charge.

INTRODUCTION.

The Survey's "Contributions to economic geology" have been published annually since 1902. In 1906 the increase in the number of papers coming under this classification made it necessary to divide the contributions into two parts, one including papers on metals and nonmetals except fuels and the other including papers on mineral fuels. In 1915 the year included in the title was changed from the year in which the field work reported in these papers was done to the year of publication, and in consequence there was no volume entitled "Contributions to economic geology, 1914." The subjoined table gives a summary of these bulletins.

United States Geological Survey "Contributions to economic geology."

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* The date given is that of the complete volume; beginning with Bulletin 285, the papers have been issued as advance chapters as soon as they were ready.

As the subtitle indicates, most of the papers in these volumes are of three classes—(1) short papers describing as thoroughly as conditions will permit areas or deposits on which no other report is likely...
to be prepared; (2) brief notes on mining districts or economic deposits whose examination has been merely incidental to other work; and (3) preliminary reports on economic investigations the results of which are to be published later in more detailed form.

Although these papers set forth mainly the practical results of economic investigations they include brief theoretical discussions and summary statements of conclusions if these appear to require prompt publication.

Beginning in the spring of 1917 and continuing throughout the period of the war the United States Geological Survey made special field explorations, surveys, and laboratory studies of deposits of ores of metals used in the manufacture of ferroalloys, pig iron, and steel, including manganese, chromium, tungsten, molybdenum, titanium, uranium, vanadium, zirconium, and iron.

Summaries of the data were promptly published by the Geological Survey in the form of press bulletins, and several longer papers on these subjects were published in Survey Bulletin 710 and in the Transactions of the American Institute of Mining and Metallurgical Engineers. Other papers prepared largely by Federal Survey geologists have been published by several State surveys. The papers on manganese and iron ore in this bulletin are some of the results of this war work, and other papers, now in preparation, will be published in "Contributions to economic geology, 1921."

