

PREFACE

THE different sections of Economic Geology are intimately connected. Thus some ore deposits are dependent on deep-seated solutions and others on coastal action, the characteristics of soils illustrate rock decay and the circulation of underground water, earthquakes connect superficial and plutonic action as they arise from faulting at the depth of hundreds of miles, and the problems of water supply show that the surface is nourished by new material from the interior. Hence it is convenient to consider together the various branches of civil and mining engineering and of agricultural geology. To cover so varied a field in a short book renders necessary omission of reference to some metals that throw no special light on general principles, and to some agencies and processes that are adequately dealt with in geological text-books. The examples chosen illustrate various principles and processes, the selection being often determined by my having had the privilege of examining them personally.

The literature of the Economic Geology is now so overwhelming, that reference to it has had to be sternly limited, or it would have taken an undue share of the space; no reference has been given to much of the better-known literature, the references given being to those that would be useful to students, or to the authorities for evidence relied on in the conclusions adopted.

I may refer here to a few convenient sources of information, such as the monographs on useful minerals and ores by the Imperial Institute, to the statistics in the annual volumes of *Mineral Industry*; for the original literature on the ores of North America, which are often mentioned in the text, to W. Lindgren's *Mineral*