

stein, which are frequent towards the west, have not yet been seen in Venezuela; but it may be also observed that in the system of secondary rocks of the old continent, muschelkalk and quadersandstein are not always clearly developed, and are often, by the frequency of their marls, confounded with the lower layers of Jura limestone. The muschelkalk is almost a lias with encrinites; and quadersandstein (for there are doubtless many above the lias or limestone with gryphites) seems to me to represent the arenaceous layers of the lower shelves of Jura limestone.

I have thought it right to give at some length this geologic description of South America, not only on account of the novel interest which the study of the formations in the equinoctial regions is calculated to excite, but also on account of the honourable efforts which have recently been made in Europe to verify and extend the working of the mines in the Cordilleras of Columbia, Mexico, Chile, and Buenos Ayres. Vast sums of money have been invested for the attainment of this useful end. In proportion as public confidence has enlarged and consolidated those enterprises, from which both continents may derive solid advantage, it becomes the duty of persons who have acquired a local knowledge of these countries to publish information calculated to create a just appreciation of the relative wealth and position of the mines in different parts of Spanish America. The success of a company for the working of mines, and that of works undertaken by the order of free governments, is far from depending solely on the improvement of the machines employed for draining off the water, and extracting the mineral, on the regular and economical distribution of the subterraneous works, or the improvements in preparation, amalgamation, and melting: success depends also on a thorough knowledge of the different superposed strata. The practice of the science of mining is closely linked with the progress of geology; and it would be easy to prove that many millions of piastres have been rashly expended in South America, from complete ignorance of the nature of the formations, and the position of the rocks, in directing