SCIENCE

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MSS. intended for publication and books, etc., intended for review should be sent to the responsible editor, Professor J. McKeen Cattell, Garrison-on-Hudson, N. Y.

THE GEOLOGY OF ORE DEPOSITS.

II.

WE have now traced the metals of many ores to their first positions in the veins. In order to understand other cases, we must recall the facts as to the relations of 'richness with depth.' At this point I take my illustrations from regions outside of Colorado. James Douglass says that in the Appalachian region every copper mine has diminished in richness with depth. Near the surface rich oxidized products were found. Near the level of ground-water rich belts of sulphides occurred—in some instances extraordinarily rich. Below the level of rich sulphides every old mine has passed into cupriferous pyrrhotite, a sulphide of iron bearing a very small percentage of copper. In the Sierra Nevadas, of California, Mr. Lindgren states that near the surface the values range from $80 to $300 per ton; but a little way below the level of ground-water these values fall to $20 or $30 per ton, and no exceedingly rich deposits are found. You all know the history of the Comstock lode; and of the great bonanzas found above or about the 2,000-foot level, and which did not extend deeper. In the Lake Superior region the greatest iron-ore mines in the world occur; four-fifths or more of the entire product of iron of the United States comes from that region; but at the present time vastly more