

groups which occur in New York, 162. Evidences of ancient denudation, 163. Source of various economic materials, 163. Devonian system, 163-166. Upper Helderberg series, 163-166. Mackinac limestone, 164-165. Gros Cap, 164. Island of Mackinac, 164-166. Arched Rock, 164. Sugar Loaf, 165. Fossil contents, 166.....162-166

## CHAPTER XI.

### MISCELLANEOUS OBSERVATIONS ON THE PALÆOZOIC SERIES.

Extension of this series into Wisconsin, 167-176. Section by Mr. Lapham, 167-171. Mr. Hall's remarks, 171-172. Section by Mr. Whittlesey, 173-176. On the origin of the basins of Lake Michigan and Lake Huron, 176-177. Mr. Hall's remarks, 177. Mr. Whittlesey's observations on the thickness, bearing, and inclination of these groups, 177-183. Evidences of denudation and subsidence during the deposition of these groups, 183-185. Effects of oscillations on animal life, 185-189.....167-189

## CHAPTER XII.

### CHEMISTRY AND ECONOMIC GEOLOGY OF THE PALÆOZOIC SERIES.

Prospects of the mining interest in the Copper Region, 190. Sandstones and conglomerates, 190. Their chemical and mineralogical composition, 190-191. Their economical application, 191. Chemical examination of the limestones, 191-197. Method of analysis, 191-192. Lower Silurian limestones, 192-194. Remarks on the composition of the lower Silurian limestones, 194-195. Upper Silurian limestones, 195-197. Marble of the Azoic series, 197. General remarks on the analyses, 197. Theory of dolomitization, 197-199. Occurrence of soda, chlorine, and sulphuric acid, 199. Probable origin of these substances, 199. Economic application of the limestones, 199-200. For calcination, 200. Building materials, 200. Occurrence of metallic ores in the limestones, 201. Gypsum, 201-202....190-202

## CHAPTER XIII.

### DESCRIPTION OF NEW AND RARE SPECIES OF FOSSILS FROM THE PALÆOZOIC SERIES.

BY JAMES HALL.

Marine fossils from the Potsdam and Calciferous sandstones, 203-206. From the Chazy, Birds-eye, and Black river limestones, and the Hudson-river group, 206-215. From the Clinton group, 215-220. From the Niagara group, 220-223. From the Upper Helderberg series, 223-225. List of organic remains, 226-228. General remarks, 229-231.....203-231

## CHAPTER XIV.

### ON THE SUPERFICIAL DEPOSITS OF THIS DISTRICT.

BY E. DESOR.

Division into drift, terraces, and alluvial deposits, 232. Drift phenomena of the northern coast of Lake Michigan, and western coast of Green Bay, 232-234. Of the Menomonee, 234-238. Of the valley of the Manistee, 238-242. Of the