

CONTENTS.

NUMBER CIV.

	Page.
ART. XVIII. Contributions to the Chemical and Geological History of Bitumens, and of Pyroschists or Bituminous Shales; by T. STERRY HUNT, M.A., F.R.S., . . . . .	157
XIX. Origin of the Indian Race of Hayti; by J. A. VAN HEUVEL,	171
XX. Abstract of a Meteorological Journal, kept at Marietta, Ohio; by S. P. HILDRETH, M.D.—[Thirty-fifth Annual Report],	181
XXI. Waterglass; by JOHN M. ORDWAY. Part IV, . . . . .	185
XXII. On the Origin, Growth, Substructure and Chronology of the Florida Reef; by Capt. E. B. HUNT, U. S. A. (In a letter to Prof. A. D. BACHE), . . . . .	197
XXIII. Catalogue of Mineral Localities in New Brunswick, Nova Scotia, and Newfoundland; by O. C. MARSH, B.A., . . . . .	210
XXIV. On the Correction of the Elements of the Orbit of a Comet; by Prof. JAMES C. WATSON, M.A., . . . . .	218
XXV. Geographical Notices. No. XIX,—Physical Geography of the Report on the Mississippi river, by Humphreys and Abbot, 223.—Red River Basin, 224.—Arkansas and White River Basin, 225.—St. Francis Basin, 227.—Missouri Basin: Upper Mississippi Basin, 228.—Ohio Basin, 236.—Yazoo Basin: Basin of Small Direct Tributaries, 232.—Recent explorations encouraged by the Smithsonian Institution—in the Peninsula of California, by Mr. John Xantus, 230—of the Hudson Bay territory, by Mr. Kennicott, 237, by officers of the Company, 238—Northwest Boundary Survey, under Mr. Archibald Campbell: Report of the Superintendent of the U. S. Coast Survey for 1860, 239.—Desiderata in East African Exploration, 242.	
XXVI. On the existence of a Mohawk-valley Glacier in the Glacial Epoch; by JAMES D. DANA, . . . . .	243
XXVII. On certain Changes in Wine; by J. NICKLÈS, . . . . .	250
XXVIII. Observations on the Sphagna of New Jersey, with Description of a New Species; by C. F. AUSTIN, . . . . .	252
XXIX. Foreign Correspondence.—1. On the Science of the International Exhibition,—in a letter from O. C. MARSH, B.A.: Gold: Silver: Platinum and the Platinum-metals, 256.—Aluminium: Mercury, 257.—Copper: New Metals: Iron and Steel: Coal and artesian boring: Canadian collections; asterism in Mica, 258.—2. Correspondence of J. NICKLÈS: Obituary: Henri Hurran de Sénarmont, 260.—Adrian Etienne Pierre de Gasparin: Ed. François Jomard, 261.—Publication of the works of Lavoisier, 262.—Ozone and Nitrous Acid—Fixation of Nitrogen in Plants, 263.—Electro-metallurgy—A new kind of industrial Painting, 264.—Oxygen Gas to counteract Gangrene: Treatment of Tuber-	

cular Leprosy, or the Red Disease of Cayenne, 266.—Preservation of Wood, 267.—The Ceramic Arts of the London Exhibition, 268.—*Bibliography*.—Recent publications by Hachette & Co., Paris, 269.—By H. Bossange, Paris, 270.—3. Correspondence of T. STERRY HUNT, F.R.S.—On the nature of nitrogen and the theory of nitrification, 271.

### SCIENTIFIC INTELLIGENCE.

*General Chemistry*.—Report on a Memoir of Mr. Lamy relating to Thallium; by Mr. DUMAS, 273.—The discovery of the metal Thallium, W. CROOKES, 277.

*Analytical Chemistry*.—Alkalimetry, 279.—On the solubility of Sulphate of Lime in chlorhydric acid, 283.

*Technical Chemistry*.—Webster's process for producing Oxygen Gas, 283.—On the industrial applications of Cryolite, 285.

*Photography*.—The action of light upon a sensitive plate, 286.

*Metallurgy*.—On Aluminum-bronze, Lieut.-Col. STRANGE: Tensile strength: Resistance to compression, 286.—Malleability: Transverse strength, etc., 287.—Mineral and Metal products of Great Britain and Ireland, 288.—The Mining and Smelting Magazine, edited by HENRY CURWEN SALMON, F.G.S., F.C.S., 289.

*Physiological and Agricultural Chemistry*.—On the chemistry of germination; Dr. MAX SCHULZ, 290.—On the reduction of kinic acid to benzoic acid, and its conversion into hippuric acid in the animal organism, LAUTEMANN: On the composition of the urine of oxen, as related to their fodder, HENNEBERG, STOHMANN and RAUTENBERG, 291.—On some points in the composition of soils, ALEXANDER MULLER, 292.

*Mineralogy and Geology*.—Manuel de Minéralogie par A. DESCLOIZEAUX: Report on the Geological and Mineralogical specimens collected by Mr. S. C. HALL in Frobisher Bay, 293.—Note on a fossil Echinoderm from the Blue Limestone (Lower Silurian) of Cincinnati, Ohio; by J. D. DANA: On a new Crustacean from the Potsdam Sandstone; by Prof. JAMES HALL: Proceedings of the Portland Society of Natural History, 295.—On the present condition of the Crater of Kilauoa on the island of Hawaii; by Rev. TITUS COAN: Arsenids of Copper from Lake Superior, SCHEERER, 296.—Catalog einer Sammlung vom 675 Modellen in Ahornholz, zur Erläuterung der Krystallformen der Mineralien, ausgegeben vom Rheinischen Mineralien-Comptoir des Dr. A. KRANTZ, 297.

*Zoology*.—Contributions to Conchology, vol. ii.—A Monograph of the Order Pholadacea and other papers; by GEORGE W. TRYON, JR., 297.—Analytical Synopsis of the order of Squali, and Revision of the Nomenclature of the Genera; by THEODORE GILL, 299.—On the mode of development of the marginal tentacles of the free Medusæ of some Hydroids; by A. AGASSIZ, 300.

*Astronomy*.—On the double star  $\mu$  Herculis, in a note to the Editors, by ALVAN CLARK: ALVAN CLARK receives the LaLande prize: The Astronomical Association of Chicago, 301.—Shooting Stars of Dec. 10th–13th, 1862, 302.

*Miscellaneous Scientific Intelligence*.—Scientific application of the Metric System of Weights and Measures, 302.—PASTEUR chosen a member of the French Academy, 303.

*Book Notices*.—Storer's Dictionary of Solubilities of Chemical Substances, 303.—New American Cyclopaedia, 304.—The American Annual Cyclopaedia and Register of Progress and Events, 306.

*Obituary*.—James Renwick: Melins C. Leavenworth: Dr. Asahel Clapp, 306.

*Works Received*.—Mathematics and Physics, 306.—Astronomy and Meteorology: Chemistry and Agriculture, 307.—Geology and Mineralogy: Zoology, Natural History and Medicine: Serials, 308.