

	Page
ART. XLVIII.—On the Crystallization of Native Copper; by EDWARD S. DANA. (With Plates X to XIII).....	413
XLIX.—On the Trap and Sandstone in the Gorge of the Farmington River at Tariffville, Conn.; by WILLIAM N. RICE .....	430
L.—Comparative Studies upon the Glaciation of North America, Great Britain and Ireland; by H. CARVILL LEWIS .....	433
LI.—On certain fossiliferous Limestones of Columbia Co., N. Y., and their relation to the Hudson River Shales and the Taconic System; by I. P. BISHOP.....	438
LII.—Crystallized Vanadinite from Arizona and New Mex- ico; by S. L. PENFIELD .....	441
LIII.—The Viscosity of Steel and its Relations to Temper; by C. BARUS and V. STROUHAL.....	444
LIV.—Remarks upon the Journey of André Michaux in December, 1788; by C. S. SARGENT.....	466
LV.—Note on the Age of the Swedish Paradoxides Beds; by S. W. FORD.....	473

## SCIENTIFIC INTELLIGENCE.

*Chemistry and Physics.*—Determination of Fusing points, ROTH: Determination of Molecular Weights of Substances by means of the Freezing points of their Solutions, PATERNO and NASINI, 476.—Magnetic Rotation of mixtures of the Fatty Acids, of Alcohol and of Sulphuric Acid, with Water, PERKIN, 477.—Behavior of Alkali-earths and their Hydrates to dry Carbon dioxide, SCHEIBLER, 478.—Synthesis of active Conine, LADENBURG: Identity of Cadaverine with Pentamethylenediamene, LADENBURG, 479.—Method of obtaining Hydrochloric acid absolutely free from Arsenic, 480.—Fluorescence: Instantaneous Photography, M. MAREY: A Potential strengthener for measurements, HALLWACHS: Compressibility and Surface Tension of Liquids, W. C. RÖNTGEN and J. SCHNEIDER: Observations on pure Ice and Snow, T. ANDREWS, 481.

*Geology and Natural History.*—Gaseous constituents of Meteorites, ANSDALL and DEWAR, 482.—Recent discovery of Emeralds and Hiddenite in North Carolina, W. E. HIDDEN, 483.—Mineral Physiology and Physiography, T. STERRY HUNT, 484.—Index der Krystallformen der Mineralien, VICTOR GOLDSCHMIDT, 485.—Botanical Notes: Lamarck's Herbarium. etc., 485—Absorption of coloring matters by the living protoplasm of vegetable cells, 486.

*Miscellaneous Scientific Intelligence.*—The Astronomical Journal: National Academy of Sciences, 486.—Catalogue of the Collection of Minerals of A. Dohrmann, 487. *Obituary.*—CHARLES WHITTLESEY, 487.

INDEX TO VOLUME XXXII, 488.

## ERRATA.

p. 77, 11 l. from top, for California read Greenland.

Page 78, 23 l. from foot, for HENMAN read HERMAN.