

the mainland. Mr. Peary has no theories, and expects to have to modify his plans according to circumstances. He expects to reach higher latitudes than have previously been attained, but has no sentimental views as to reaching the pole. The whole of the expense of the expedition he hopes to defray by his lectures and the book describing his last year's experience, which will be published in June.

STROMBOLI.

ON June 24, 1891, an earthquake and volcanic explosion took place, followed by another shock on June 30. Some days after, the authors spent three days at Stromboli, and subsequently studied at their homes the materials they collected.

The paper commences with a description of the island, which not only adds nothing to what has already been published, but is inferior to what has been described by others. Mention is made of many changes during the last century, but great care is taken not to mention several writers who have described and illustrated the changes during the last few years. The writer, who was the first to photograph the crater of Stromboli, and has since published new photographs, is not even referred to, yet those photos are the best so far published of the volcano. It is regrettable to see the frequency with which Prof. Mercalli quotes himself to the exclusion of several of his own countrymen, and especially foreigners. Since 1887, the single crater has been replaced by a number of cones which, according to the authors, are the same as those of 1889: I myself visited the crater in 1889, and those in the plates of this paper are very different in situation, which I can confirm by photos in my possession. The matter is of little importance, but more care should be shown in such statements. Those who have a good practical experience of active volcanoes know how often, from day to day these central conettes change.

The shock of the present eruption was quite local and was unobserved at Lipari. It was much more violent on the upper part of the mountain than lower down, and the authors reasonably conclude that the explosion was limited to the actual crater. Several landslips occurred on the crumbling slopes of the island. A column of vapour and lumps of incandescent lava were ejected to a level with the summit of the island, that is for a height of 225 m. Dust and lapilli were spread over the island though not to any great amount. Lava immediately began to flow from a short rift.

On June 30, another shock occurred, sufficiently strong to disturb the Milne seismoscopes of Lipari. After the usual ejection of lava cakes, lapilli, stones, &c., another lava stream started from a point near the eastern mouths. By July 6, when the authors visited the crater, the excessive activity had so diminished that no more lapilli or dust was being ejected. Three currents of lava flowed down the Sciarra to the sea, and as one divided into two branches, four reefs were formed at the water-line which it appears are being rapidly swept away by the waves.

The microscopic and chemical examination of the lava shows it to be a basalt verging on an andesite with 50 per cent. of SiO_2 , with a little more potash than soda. The scoria ejecta resemble the lava in composition, except so far as their different rate of cooling modifies them. Besides the *essential*, some *accessory* ejecta were thrown out, which were old fumarolised materials from the new crater walls. The dust, or ashes, as the authors call it, was partly composed of black vitreous particles and glass fibres mixed with a brownish powder from the trituration of older volcanic materials.

No relation was found to exist between the eruptive spasm of Stromboli with several earthquakes that occurred before and after. A list of known eruptions of Stromboli are given, but it is a most imperfect one; for example the eruption of 1768, which was actually figured by Sir William Hamilton in his masterly work, is not even referred to, although lava not only issued from the crater, but also from a lateral opening on the western side of the Stromboli, and also was the first recorded issue of lava from this volcano. This list is more complete of late years, there being no less than fourteen eruptions from 1879 to 1888. Prof. Mercalli thinks there is a sympathetic ic

² "Sopra il perii odo eruttivo dello Stromboli cominciato il 24 Guigno, 1891." By A. Ricco and G. Mercalli. Con appendice dell' Ing. S. Arcidiacono. *Ann. d. Ufficio C. Met. e Geodinamico* ser. sec., pt. iii. vol. xi. 1889. (Paper printed 1892.)

action between the outbursts of Stromboli and Etna, and also the seismic foci of South Italy. He likewise finds a faint relationship between the position of the sun and moon when in opposition and conjunction but not with barometric pressure, but says that the daily variation in activity may so be related, as stated by the inhabitants.

H. J. JOHNSTON-LAVIS.

FORTHCOMING SCIENTIFIC BOOKS.

MR. MURRAY has in preparation:—"The Life of Prof. Owen," based on his correspondence, his diaries, and those of his wife, by his grandson, the Rev. Richard Owen, with portraits and illustrations, 2 vols.; "Alone with the Hairy Ainu; or, 3,800 Miles on a Pack Saddle in Yezo and a Cruise to the Kurile Islands, by A. H. Savage Landor, with map and numerous illustrations by the author; "A Manual of Naval Architecture," for the use of officers of the navy, the mercantile marine, ship-owners, ship-builders, and yachtsmen, by W. H. White, F.R.S., third edition, thoroughly revised and in great part re-written, with 150 illustrations; "The Physiology of the Senses," by Prof. John McKendrick and Dr. Snodgrass, with illustrations (1) touch, taste, and smell (2) the sense of sight (3) sound and hearing; "Chapters in Modern Botany," by Prof. Patrick Geddes, with illustrations; "The Philosophy of the Beautiful, Pt. II." by Prof. Knight; "Logic, Inductive and Deductive," by Prof. William Minto; "The Metallurgy of Iron and Steel," by the late Dr. John Percy, F.R.S., a new and revised edition, with the author's latest corrections, and brought down to the present time, by H. Bauerman, with illustrations.

Messrs. Longmans announce:—"Theosophy or Psychological Religion," the Gifford lectures delivered before the University of Glasgow in 1892, by Prof. F. Max Müller; "Telephone Lines and their Properties," by Prof. W. J. Hopkins; "Essays on Rural Hygiene," by Dr. George Vivian Poore; "Abdominal Hernia," by John Langton, M.R.C.S.; "A Treatise on Electricity and Magnetism," by G. W. De Tunzelmann in 2 vols.; "Papers and Notes on the Glacial Geology of Great Britain and Ireland," by the late Prof. Henry Carvill Lewis, edited from his unpublished MSS., with an introduction by Dr. Henry W. Crosskey; "The Making of the Body, a Reading Book for Children on Anatomy and Physiology," with many illustrations and examples, by Mrs. S. A. Barnett; "A Manual of Machine Drawing and Design," by David Allan Low (Whitworth scholar) and Alfred William Bevis (Whitworth scholar), with over 700 illustrations; "Diseases and Injuries of the Teeth, including Pathology and Treatment," a manual of practical dentistry for students and practitioners, by Morton Smale, M.R.C.S., and J. F. Colyer, L.R.C.P.; "Cotton Weaving and Designing," by John J. Taylor; "Clinical Lectures on Abdominal Hernia," chiefly in relation to treatment, including the radical cure, by William H. Bennett, F.R.C.S., with twelve diagrams in the text; "The Elements of Bacteriology," a manual for practitioners and students, by Prof. S. L. Schenk, translated by Dr. W. R. Dawson, with 100 illustrations, some of which are coloured; "Esquimaux Life," by Fridtjof Nansen, translated by William Archer, with illustrations.

Among Messrs. Macmillan and Co.'s announcements are:—"William Kitchen Parker, F.R.S.," a short memoir by his son, Prof. T. Jeffery Parker, F.R.S.; "Text-book of Pathology: Systematic and Practical," by Prof. D. J. Hamilton, Vol. II.; "A Uniform Edition of Prof. Huxley's Essays," in 6 vols., comprising Lay Sermons, Addresses and Reviews, Critiques and Addresses, Science and Culture, American Addresses, Man's place in Nature, &c.; "Lectures on Sanitary Law," by A. Wynter Blyth, M.R.C.S.; "A Text-book of the Physiological Chemistry of the Animal Body," including an account of the chemical changes occurring in disease, by Prof. Arthur Gamgee, F.R.S., with illustrations, Vol. II.; "Tables for the Determination of the Rock-forming Minerals," compiled by Prof. F. L. Loewinson-Lessing, translated from the Russian by J. W. Gregory, with a glossary added by Prof. G. A. J. Cole; "Text-book of Geology," by Sir Archibald Geikie, F.R.S., with illustrations, third edition, thoroughly revised; "Atlas of Classical Antiquities," by Th. Schreiber, edited for English use by Prof. W. C. F. Anderson; "The Soil in Relation to Health," by Henry A. Miers and Roger Crosskey; "Elementary Treatise on Modern Pure Geometry," by R. Lachlan;

"Exercises in Euclid," by William Weeks; "Utility of Quaternions in Physics," by Alexander McAulay.

In the Clarendon Press list are:—Locke's "Essay concerning Human Understanding," edited by Dr. A. C. Fraser; "Mathematical Papers of the late Prof. Henry J. S. Smith, with portrait and memoir, two volumes; "A Supplementary Volume to Prof. Clerk Maxwell's Treatise on Electricity and Magnetism," by Prof. J. J. Thomson, F.R.S.; "A Manual of Crystallography," by Prof. M. H. N. Story-Maskelyne, F.R.S.; "Analytical Geometry," by W. J. Johnston; "A Treatise on the Kinetic Theory of Gases," by Dr. H. W. Watson, new edition; "An Elementary Treatise on Pure Geometry," with numerous examples, by J. W. Russell; "Index Kewensis Nominum Omnium, Generum et Specierum, Plantarum Phanerogamarum, 1735-1885, Part I.; "Hospital Construction," by Sir Douglas Galton, F.R.S.

Messrs. Swan Sonnenschein and Co.'s list contains:—"Philosophy and Political Economy in their Historical Relations," by Dr. James Bonar; "Appearance and Reality," by F. H. Bradley; "The Principles of Psychology," by G. F. Stout; "History of Philosophy," by Dr. Johann Eduard Erdmann, translated and edited by Prof. Williston S. Hough, third edition, revised, three volumes; "A Student's Text-Book on Botany," by Prof. Sidney H. Vines, F.R.S., copiously illustrated; "Text-book of Embryology: Invertebrates," by Drs. Korschelt and Heider, translated and edited by Dr. E. L. Mark and Dr. W. M. Woodworth, fully illustrated; "The Cell: its Anatomy and Physiology," by Dr. Oscar Hertwig, translated and edited by Dr. H. J. Campbell, fully illustrated; "Text-Book of Palæontology for Zoological Students," by Theodore T. Groom, fully illustrated; "Lectures on Human and Animal Psychology," by Prof. Wilhelm Wundt, translated and edited by James Edwin Creighton and Edward Bradford Titchener; "Hand-book of Systematic Botany," by Prof. E. Warming, translated and edited by M. C. Potter, fully illustrated; "An Elementary Treatise on Practical Botany," by Prof. E. Strasburger, translated and edited by Prof. W. Hillhouse, with 140 illustrations, third edition; "The Photographer's Pocket Book," by Dr. E. Vogel, translated by E. C. Conrad, with 63 illustrations; "How Nature Cures," by Dr. Emmet Densmore; "Beauty and Hygiene for Women and Girls," by a Specialist; "A Popular History of Medicine," by Edward Berdoe, M.R.C.S.; "Introduction to the Study of the Amphioxus," by Dr. B. Hatschek and James Tuckey, illustrated; "Practical Bacteriology," by Dr. Migula, translated and edited by Dr. H. J. Campbell, illustrated; "Geology," by Dr. Edward B. Aveling, illustrated with a Geological Map and numerous woodcuts; "Zoology," by B. Lindsay, illustrated; "Fishes," by the Rev. H. A. Macpherson; "Flowering Plants," by James Britten; "Grasses," by W. Hutchinson; "Mammalia," by the Rev. H. A. Macpherson.

Messrs. George Philip and Son will publish:—"Philip's Atlas Guide to the Continent of Europe," a series of 72 plates, with descriptive letter-press, by J. Bartholomew; "Philip's Systematic Atlas for Higher Schools and General Use," a series of physical and political maps, with diagrams and illustrations of astronomy and physical geography, by E. H. Ravenstein; "Philip's Anatomical Model of the Human Body," illustrating the construction of the Human Frame and the relative positions of its various organs by means of superimposed plates printed in colours; "The Celestium, or Patent Astronomical Calendar for recording and illustrating in miniature the daily and hourly positions of the heavenly bodies as they pass through the Sign of the Zodiac."

Messrs. Percival and Co. give notice of:—"The School Euclid," an edition of Euclid, Books III. to VI., with notes and exercises, by Daniel Brent; The Beginner's Text Books of Science: "Chemistry," by G. Stallard; "Geology," by C. L. Barnes; "Electricity and Magnetism," by L. Cumming; "Heat," by G. Stallard; "Light," by H. P. Highton; "Mechanics" (treated experimentally), by L. Cumming; "Physical Geography," by C. L. Barnes; "Practical Physics," an introductory handbook for the physical laboratory, in three parts, by Prof. W. F. Barrett; Part II. Heat, Sound, and Light. Part III. Electricity and Magnetism, Electrical Measurements; "Practical Lessons and Exercises in Heat for use in schools and Junior University classes, by A. D. Hall.

In Messrs. A. and C. Black's announcements we notice:—"Illustrated Text-Book of Invertebrate Zoology," by A. E. Shipley; "History of Astronomy during the

Nineteenth Century," by Agnes M. Clerke, third edition, revised and enlarged; "Algebra, an Elementary Text-Book for the Higher Classes of Secondary Schools and Colleges," by Prof. George Chrystal, Part I., third edition.

Messrs. Crosby Lockwood and Son have in hand:—A new and enlarged edition (the third) of Prof. R. Wallace's "Farm Live Stock of Great Britain," containing additional phototype engravings of notable specimens of live stock; and a new volume by Prof. Sheldon on "British Dairying."

Mr. Walter Scott will issue in the "Contemporary Science Series":—"Modern Meteorology," by Dr. Frank Waldo, with 112 illustrations.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

OXFORD.—Two Radcliffe Travelling Fellowships, each of the value of £200 per annum, and tenable for three years, have been awarded this week. One, which has been gained by Mr. E. A. Minchin, of Keble College, was thrown open last year to candidates in all branches of science, and the usual declaration that the Fellow intends to graduate in medicine and to travel abroad with a view to his improvement in that study has been dispensed with. Mr. Minchin was placed in the first class in the Honour School of Natural Science (Morphology) in 1890. The other Fellow, Mr. W. Ramsden, of Keble College, is subject to the usual conditions attached to these Fellowships. Mr. Ramsden obtained a first class in Natural Science (Physiology) in 1892.

The new laboratories for the department of human anatomy are rapidly approaching completion, and will, when finished, add very much to the convenience and advantages of medical students. The buildings have been designed after the plans of Mr. Arthur Thompson, and include a large dissecting room and several additional laboratories and private rooms, a lecture theatre, and a large basement.

CAMBRIDGE.—The Council of the Senate report that the Royal Geographical Society have renewed their generous offer to provide £150 a year as part of the stipend of a geographical lecturer for the ensuing five years, and to award biennially exhibitions or prizes for the encouragement of geographical research in the University. The Council recommend that the proposals of the society be accepted, and that a lecturer be appointed, under the supervision of a joint committee of management, before the end of the Easter Term, 1893.

The Sedgwick Memorial Syndicate report that they have made certain alterations in the plans for the proposed Geological Museum in Downing Street, with a view to meeting objections that were raised and to reducing somewhat the cost of the building. The Syndicate ask to be authorised to obtain tenders for the immediate construction of the museum.

SCIENTIFIC SERIALS.

American Meteorological Journal, February.—Hot winds in Texas, May 29 and 30, 1892, by I. M. Cline. Hot winds occur to some extent every year, but rarely with sufficient intensity to injure vegetation. It was estimated that in the present case 10,000 acres of cotton were destroyed, and corn suffered severely. The temperatures reported ranged generally from 90° to 100°, and in some parts from 105° to 109°. These winds appear to have resulted from the same causes which produce the Föhn in Switzerland, the descent of dry air which has deposited its vapour during its ascent.—The electrification of the lower air during auroral displays, by A. McAdie. The author gives an account of some experiments made at Blue Hill observatory, for obtaining, by means of a kite flown during thunderstorms, a better record of the potential of the air than could be given by a collector near the ground, by which plan some remarkable results were obtained, and he suggests similar experiments for showing the electrification of the lower air during displays of aurora. He also proposes a new classification of the various auroral phenomena, distinguishing between the highly coloured displays, and those of less intensity, which probably occur in the lower atmosphere.—Practical koinology, by Prof. Cleveland Abbe. He applies this term to the study of atmospheric dust and floating germs, and shows how their injurious effects on