

SCIENCE:

A WEEKLY NEWSPAPER OF ALL THE ARTS AND SCIENCES.

PUBLISHED BY

N. D. C. HODGES,

47 LAFAYETTE PLACE, NEW YORK.

SUBSCRIPTIONS.—United States and Canada.....\$3.50 a year.

Great Britain and Europe..... 4.50 a year.

Communications will be welcomed from any quarter. Abstracts of scientific papers are solicited, and twenty copies of the issue containing such will be mailed the author on request in advance. Rejected manuscripts will be returned to the authors only when the requisite amount of postage accompanies the manuscript. Whatever is intended for insertion must be authenticated by the name and address of the writer; not necessarily for publication, but as a guaranty of good faith. We do not hold ourselves responsible for any view or opinions expressed in the communications of our correspondents.

Attention is called to the "Wants" column. All are invited to use it in soliciting information or seeking new positions. The name and address of applicants should be given in full, so that answers will go direct to them. The "Exchange" column is likewise open.

VOL. XIV. NEW YORK, DECEMBER 27, 1889. No. 360

CONTENTS:

THE HALL AIR-COMPRESSOR..... 431	Hygiene and Sunday..... 436
GARBAGE CREMATION..... 432	Italian Sausages..... 436
A NEW PROCESS OF PROTECTING IRON EFFECTUALLY AGAINST CORROSION..... 432	NOTES AND NEWS..... 436
SUPPOSED SHOWERS OF METEORITES IN THE DESERT OF ATACAMA... 433	BOOK-REVIEWS.
THE PULSION TELEPHONE..... 434	A Text-Book of Animal Physiology 440
HEALTH MATTERS.	The Lost Inca 440
Preventive Inoculation for Yellow- Fever..... 435	AMONG THE PUBLISHERS..... 440
Antipyrine Habit..... 435	LETTERS TO THE EDITOR.
	Is Man Left-Legged Richard Owen 442
	On Physical Fields A. E. Dolbear 442
	The Waters of the Great Salt Lake James E. Talmage 444

BOOK-REVIEWS.

A Text-Book of Animal Physiology. By WESLEY MILLS. New York, Appleton. 8°.

UP to the present time no work on physiology has been written which has been based on the comparative method. Hardly a book which treats of zoölogy has been published, within recent years, but has this method as a foundation. The book before us is an attempt on the part of the author to do for physiology what has already been done for morphology. In his preface he calls attention to an error which is found in too many works on human physiology,—the application to man of conclusions which have been deduced from experiments on lower animals. That this is thoroughly illogical goes without saying, and yet many writers of physiological text-books constantly err in this direction.

Professor Mills commences his treatment of the subject with the consideration of general biology, describing the cell, both animal and vegetable, and then passing on to unicellular, parasitic, and multicellular organisms. The origin of the forms of life finds a place in the author's plan for a concise and yet sufficiently extensive statement of the arguments of evolution. Reproduction, which is usually left until the last subject for consideration, is taken up early for discussion, and this portion of the work is one of the best. The general treatment of special physiology is excellent. The "summary" which is found at the conclusion of each subject treated is a most valuable addition. Especially worthy of com-

mendation is the table of contents, than which we do not remember ever to have seen one more full or more convenient for reference. The five hundred illustrations are well selected and admirably executed. As a whole, this text-book will be acceptable to all teachers and students of physiology, and, as it contains matter not found in any book on the subject which has as yet appeared, no other can take its place. It certainly deserves the name of being unique, especially in the plan upon which it is written.

The Lost Inca. A Tale of Discovery in the Vale of the Inti-Mayu. By the INCA-PANCHO-OZOLLO. New York, Cassell. 12°.

THIS is a pleasing novel by a writer evidently possessed of more genius than art, who hides his identity behind a pseudonyme, and makes himself the hero of his own story. The scene is laid in the Peru of the present, geographically modified to meet the demands of the occasion, and the action is a curious blending of the past with the present, and the possibilities of the future. Peru is a land rich in romantic traditions, which are lifted from the realm of fiction by the evidences of her antiquities; and it is strange that novelists, to whom these traditions should be suggestive and fruitful material, have so long neglected them.

The writer of this novel, who has evidently travelled in Peru, and given some attention to its antiquities and traditions, bases his work upon the mysterious disappearance of Manco-Capac, the last of the Incas, from the presence of his conquerors, as detailed by Prescott in his "Conquest of Peru." In working out his plot, the author sometimes outdoes Jules Verne in his inventions, though his evident lack of patient attention to details, so characteristic of that author, leads him into blunders that will furnish mirth to historians, engineers, and electricians. For instance, he travels on the Mollendo and Puño Railroad some three years before the contract for its construction was signed. Reaching Lake Titicaca, he embarks on a flat-bottomed, stern-wheel steamboat, constructed some time previously, under his own supervision, at Wilmington on the Delaware. One of the peculiar features of this boat is that the engines are located on the upper deck, amidships. Besides the engines, she was provided with electric motors, "served by six immense storing batteries disposed symmetrically on both sides the keelson." These batteries are charged by the "economical utilization of the nearly constant north-east winds of the lake, which generated electricity by means of machinery designed for the purpose." This was in 1865. But these are only slight flaws. When the author reaches the hidden fastnesses of the Lost Inca's ideal kingdom, all is beyond criticism. Here Verne, Bellamy, and Henry George seem to have combined forces in an attempt to improve on More's Utopia, and the result might furnish suggestions to Edison as an inventor and to Ingersoll as a reformer. The book is certainly interesting and edifying, if not instructive.

AMONG THE PUBLISHERS.

AMONG the contents of *Outing* for January, we note "Wabun Anung," a tale of sport in the Great Lake region, by F. Houghton; "The Merits and Defects of the National Guard," by Lieut. W. R. Hamilton (second paper); "Gymnastics for Ladies," by W. G. Anderson, M.D.; "Fly-catcher," a tale of the hunt cup, by Hawley Smart; "Brant Shooting on Smith's Island," by Alexander Hunter; "Haak Fishing off Ireland's Eye," by Robert F. Walsh; "Alligator Shooting in Florida," by J. M. Murphy; "California Winter Resorts," by C. H. Shinn; "Ice Yachting, the Prospects of the Sport," by W. W. Howard; "Catching Frost Fish with a Shot-Gun," a story of Australian sport, by Edward Wakefield; and "Instantaneous Photography," by W. I. Lincoln Adams.

— P. Blakiston, Son, & Co., medical and scientific publishers, booksellers and importers, 1012 Walnut Street, Philadelphia, will publish in January "Massage and the Original Swedish Movements: their Application to Various Diseases of the Body," a manual for students, nurses, and physicians, by Kurre W. Ostrom, from the Royal University of Upsala, Sweden; a text-book on mental diseases, having special reference to the pathological aspects of insanity, by Bevan Lewis, medical director, West Riding