

Scientific American.

ESTABLISHED 1845.

MUNN & CO., EDITORS AND PROPRIETORS. PUBLISHED WEEKLY AT No. 361 BROADWAY, NEW YORK.

TERMS FOR THE SCIENTIFIC AMERICAN.

One copy, one year, for the U. S., Canada or Mexico, \$3.00. One copy, six months, for the U. S., Canada or Mexico, \$1.50. One copy, one year, to any foreign country, postage prepaid, \$4.00.

The Scientific American Supplement

is a distinct paper from the SCIENTIFIC AMERICAN. THE SUPPLEMENT is issued weekly. Every number contains 16 octavo pages, uniform in size with SCIENTIFIC AMERICAN.

Building Edition of Scientific American.

THE BUILDING EDITION OF THE SCIENTIFIC AMERICAN is a large and splendidly illustrated periodical, issued monthly, containing floor plans and perspective views pertaining to modern architecture.

Export Edition of the Scientific American

with which is incorporated "LA AMERICA CIENTIFICA E INDUSTRIAL," or Spanish edition of the SCIENTIFIC AMERICAN, published monthly, uniform in size and typography with the SCIENTIFIC AMERICAN.

NEW YORK, SATURDAY, APRIL 17, 1897.

Contents.

Academy of Sciences, New York 246
Aluminum soldering 243
Archaeological news 247
Armies of Europe, the 245
Armor plate, no bids for 243

TABLE OF CONTENTS OF

Scientific American Supplement

No. 1111.

For the Week Ending April 17, 1897.

Price 10 cents. For sale by all newsdealers.

I. ANTHROPOLOGY.—Aboriginal Remains in Verde Valley, Ariz.—By COSMOS MINDELEFF. Abstract of an important and elaborate paper on structures and caves in the far West, examined under the auspices of the United States Bureau of Ethnology.—3 illustrations. 17751

TRIAL TRIP OF THE BATTLESHIP IOWA.

First-class sea-going battleship Iowa completed her trial trip over the official course on April 7, when she maintained an average speed of 17 knots during a continuous run over a 66 mile course. The run was completed after about eight hours of continuous steaming, at the end of which her boilers and machinery were in first-class working condition.

The Iowa was designed for a speed of 15 knots under an indicated horse power of 11,000. As the power necessary to drive a ship varies as the cube of the speed, it is evident that on this occasion she must have indicated some thousands of horse power more than she was designed to do.

ENGLAND'S NAVAL POLICY.

The latest advices regarding the proposed increase to the English navy plainly indicate that there is to be no cessation in the activity which has characterized naval shipbuilding in that country for the last few years. The amount of money that has been appropriated for increasing and carrying on the naval establishment is something over \$115,000,000.

The current programme is one of the largest ever laid down by Great Britain, as may be judged from the fact that during the next twelve months she will have built or will be constructing 14 first-class battleships of between 13,000 and 15,000 tons displacement, 8 first-class cruisers of 11,000 tons, 9 second-class cruisers of 5,800 tons, 10 third-class cruisers, 2 sloops of war, 4 twin screw gunboats, 52 torpedo boat destroyers, 8 light draught steamers for river service, besides the royal yacht above mentioned.

ABANDONMENT OF A SOCIAL EXPERIMENT.

Two schemes for insurance against want of employment have existed for two or three years past in Switzerland, one in the canton of Berne and one in that of St. Gall. The former was voluntary, but in St. Gall the laborer was compelled to insure. The American consuls at Chemnitz and St. Gall have both recently reported on the subject, and the former states that men whose work is steady and likely to continue so complain bitterly that they are compelled to support in idleness others whose labor is uncertain, but who, for that very reason, are better paid when they are at work.

THE GOVERNMENT'S SCIENTIFIC EXHIBITS AT THE TENNESSEE EXPOSITION.

The preparation of the exhibits to be made by the Smithsonian Institution and its dependencies at the Tennessee Exposition at Nashville is well advanced. The exhibit of the National Museum has not yet been fully arranged, but it will consist essentially of a representative exhibit taken from each of its numerous departments, and will probably be confined to this.

The collections of the Smithsonian proper will embrace a complete set of the publications, including the Half Century book, which latter great work will here be seen by the public for the first time, and will also include portraits of James Smithson and Thomas G. Hodgkins and a plaster model of Joseph Henry.

The Bureau of American Ethnology will concentrate its energies on a Kiowa camping circle, and this will be one of the most interesting features of the government's exhibits. The Kiowa Indians, together with an affiliated branch of the Apaches, have a highly elaborate social organization which is embodied and expressed in the grouping of their tepees and mode of camp life.

The National Zoological Park at Washington is to be reproduced with accuracy of detail in the form of a model about seven feet square, the work of a local modeler. Photographs of important features of the park, which is a very beautiful tract, including groups of animals, etc., will be shown.

The Bureau of International Exchanges, in the Smithsonian building, will exhibit a map of the world showing the number and location of its branches in all countries, these branches being in nearly every corner of the globe. One set of government documents will show the number of publications annually sent abroad, and this, together with a bound list of the foreign correspondents, will show how extensive are the bureau's activities.

The exhibit of the astro-physical observatory will be quite interesting, including, among other objects, photographs of the spectrum showing the progress of the observatory, photographs of apparatus, and the bolometer, the marvelous invention so invaluable to astro-physics. Prof. Langley's aerodrome, or air ship, will be shown only by photographs.

The exhibit of the United States Geological Survey will embrace two cases of minerals and a case of fossils. It will also include a suite of the rocks of the educational series. The last named is worthy of especial note. It is one of a number of duplicate suites, each consisting of 156 typical rocks which the Geological Survey has been preparing for a number of years, to be distributed to the great universities and colleges of the land for purposes of instruction.

W. T. MORSELL.

BUSINESS CHANGES.

An elderly gentleman engaged in business for some twenty years past in New York and its vicinity, and which requires him to visit various lines of trade, said recently: "I find in the last few months that I am obliged to begin all over again. I go into a concern with which I have had dealings for years, and am surprised to find that the man with whom I have been transacting my business no longer sits at the desk. I ask for him and am told that he is no longer with the concern. Another, and in many cases a younger, man is there instead. It is almost like presenting my business anew. There is a perceptible interruption to relations, and an immense amount of new work to be done before I can get back to the position I occupied under the old management. This I meet almost universally. Some establishments have seized upon the present opportunity to rid themselves of dead wood. Others have hired cheaper help. Others have seen the opportunity of pensioning men long in their employ and superseding their somewhat old-fogy management by that of younger men up to date. Were I to tell you the number of cases in which these circumstances come to light, you would be astonished."—Business.

BAZIN'S ROLLER STEAMBOAT.

Dispatches from London, dated April 3, say that the reports of the recent trial trips of the roller steamer at Rouen have been discouraging, the engines not proving powerful enough. Their power was nearly trebled, but the increased weight submerges the rollers so deep that they only turn ten times a minute instead of forty. The rollers throw up such quantities of water behind that each acts like a brake and reduces the thirty knots an hour to six or seven. Rubber scrapers are being experimented with to prevent the upheaval of the water.