

Scientific American.

ESTABLISHED 1845.

MUNN & CO., Editors and Proprietors.

PUBLISHED WEEKLY AT

No. 261 BROADWAY, NEW YORK.

O. D. MUNN.

A. E. BEACH.

TERMS FOR THE SCIENTIFIC AMERICAN.

One copy, one year postage included. \$3 20
One copy, six months postage included. 1 60

Clubs.—One extra copy of THE SCIENTIFIC AMERICAN will be supplied gratis for every club of five subscribers at \$3.20 each; additional copies at same proportionate rate. Postage prepaid. Remit by postal order. Address

MUNN & CO., 261 Broadway, corner of Warren street, New York.

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. Terms of subscription for SUPPLEMENT, \$5 00 a year, postage paid, to subscribers. Single copies, 19 cents. Sold by all news dealers throughout the country

Combined Rates.—The SCIENTIFIC AMERICAN and SUPPLEMENT will be sent for one year postage free, on receipt of seven dollars. Both papers to one address or different addresses as desired. The safest way to remit is by draft, postal order, or registered letter. Address MUNN & CO., 261 Broadway, corner of Warren street, New York.

Scientific American Export Edition.

The SCIENTIFIC AMERICAN Export Edition is a large and splendid periodical, issued once a month. Each number contains about one hundred large quarto pages, profusely illustrated, embracing: (1) Most of the plates and pages of the four preceding weekly issues of THE SCIENTIFIC AMERICAN, with its splendid engravings and valuable information; (2) Commercial, trade, and manufacturing announcements of leading houses. Terms for Export Edition, \$5.00 a year, sent prepaid to any part of the world. Single copies 50 cents. Manufacturers and others who desire to secure foreign trade may have large and handsomely displayed announcements published in this edition at a very moderate cost. The SCIENTIFIC AMERICAN Export Edition has a large guaranteed circulation in all commercial places throughout the world. Address MUNN & CO., 261 Broadway, corner of Warren street, New York.

NEW YORK, SATURDAY, SEPTEMBER 2, 1882.

Contents.

(Illustrated articles are marked with an asterisk.)

Table listing various articles and their page numbers, including Agricultural inventions, Air pump, Antisepsis, and various technical reports.

TABLE OF CONTENTS OF

THE SCIENTIFIC AMERICAN SUPPLEMENT

No. 348,

For the Week ending September 2, 1882.

Price 10 cents. For sale by all newsdealers.

Detailed table of contents for the supplement, listing articles such as Engineering and Mechanics, Technology and Chemistry, Natural History, Electricity, Ethnology, Architecture, Hygiene, and Astronomy.

THE MONTREAL SCIENTIFIC MEETINGS.

Montreal is the summer gathering-place of American science this year, the convention of the American Association there having been preceded by a Congress of Foresters, August 21-23, and a meeting of the Association for the Promotion of Agriculture, August 21.

Undaunted by the ill-success of their first gathering at Cincinnati, four months before, the promoters of the

AMERICAN CONGRESS OF FORESTRY

came bravely forward to the number of two hundred or more, with many papers on subjects relating to the culture and conservation of forests. Among the members present were Dr. Franklin H. Hough, Chief of the Bureau of Forestry at Washington; Dr. Charles Mohr, of Mobile, Ala., of the Census Bureau, who assisted in preparing the forestry statistics of the Gulf States for the Census Bureau; Dr. John A. Warder, of Ohio; S. J. Russel, Crown Timber Agent for the Dominion; C. E. Bell, Crown Timber Agent for the Province of Quebec; William Saunders, representing the Ontario Government; and Professor Albert S. Bickmore, of the American Museum of Natural History, in New York. The Committee on Forest Fires presented a report recommending, first, the reservation of all pine and spruce lands unfit for settlement for lumbering purposes exclusively; second, the prohibition of the burning of brush by settlers in the vicinity of fir trees during the months of May, June, September, and October; third, the division of the timber country into districts, and the appointment of police, under a superintendent with magisterial powers, whose duty it shall be to detect and punish offenders and provide for the extinguishment of fires; fourth, the cost of maintenance of this protection against fire might partially be met by the imposition of a moderate tax on those owning or leasing timber lands.

Dr. Loring, of the Agricultural Department, was elected president.

THE AGRICULTURAL CONVENTION.

The membership of the Society for the Promotion of Agriculture is limited to forty, a number too small to admit of its becoming popular in the broader sense of the word; yet its contributions have usually been of high scientific value, so that the quality of its work may more than compensate for any lack in quantity. This was its third annual meeting. Mr. W. J. Beal, Professor of Botany and Agriculture in the Michigan Agricultural College, Secretary of the American Pomological Society, and President of the Society for the Promotion of Agricultural Science, occupied the chair. Among those present at the opening were C. Lewis Sturtevant, Director of the New York Agricultural Experiment Station, who officiates as Secretary of the Society; L. B. Arnold, Lecturer on Dairy Husbandry, of Cornell University; George H. Cook, Professor of Chemistry and Agriculture in Rutgers Scientific School, and State Geologist of New Jersey; B. D. Halsted, editor-in-chief of the American Agriculturist; Levi Stockbridge, President and Professor of Agriculture in the Massachusetts Agricultural College; W. W. Tracy, Professor of Botany and Entomology, Superintendent of Garden Mission University, Secretary of the Mississippi Valley Horticultural Society; John Dougall, and a number of others.

Four new members were elected: Major Alvord, of Houghton Farm; Dr. Dabney, Director of the North Carolina Experiment Station; Professor C. V. Riley, of Washington, and Dr. Ormsby, of the Storrs Agricultural School, making the total membership thirty-eight. Papers were read by Professor Arnold, on "The Origin of Butter Fats;" by Professor Caldwell, on the "Maintenance Ration;" by Professor Tracy, on "Seed Testing and the Influence of Light and Air on the Germination of Seeds;" by Professor Gully, of the Agricultural College of Mississippi, on the "Food Value of Cotton Seed;" and by Dr. E. W. Hilgard, on the "Absorption of Moisture by Soils." Among the other papers contributed were "Mineral Constituents in Plant Growth;" "The Yellows in Peaches;" "Non-albuminoid Nitrogen in Timothy in Different Stages of its Growth," by Professor W. H. Jordan; on "Vaccination," by D. E. Salmon, Veterinarian of the Department of Agriculture, and others.

THE AMERICAN ASSOCIATION.

The thirty-first meeting of the American Association for the Advancement of Science began August 23, with a large attendance of members and many prominent visitors. Among those from Europe were Dr. Samuel Houghton, and Professors Fitzgerald and Ormsby, of Trinity College, Dublin; John Rae, of London; Dr. Gilbert, President of the Chemical Society; Dr. Phine and Professor Wiltshire, of London; Professor Ernest Cook, of Bristol; Dr. Kowalesky, of Moscow; Dr. Szabo, of Hungary; Dr. Koenig, of Paris; and Professor William B. Carpenter, the eminent microscopist, from London.

After the brief address of welcome by Dr. Dawson, President-elect, a review of the growth of Montreal and of the growth of the association since the meeting of the association there twenty-five years ago, was given by Dr. T. Sterry Hunt, who expressed the hope that by another quarter century, or less, a meeting might be held in the City of Mexico.

The scientific work began in the afternoon with the customary addresses of the Vice-Presidents of Sections. The addresses were as follows:

Professor T. C. Mendenhall, of Columbus, section of Physics; Professor H. C. Bolton, of Hartford, section of Chemistry, on "Chemical Literature;" Professor William P.

Trowbridge, of New Haven, section of Mechanical Science; Professor William H. Dall, of Washington, section of Biology on "The Biology of American Mollusks;" Professor A. H. Little, of Columbus, section of Histology and Microscopy; Professor Daniel Wilson, of Toronto, section of Anthropology, on "Some Physical Characteristics of Native Tribes of Canada;" and Professor B. Elliott, of Washington, section of Economic Science and Statistics. The address of Professor William Harkness, section of Mathematics and Astronomy, on the "Transit of Venus," was read by Professor Eastman. The paper of Professor E. T. Cox, of San Francisco, section of Geography and Geology, was given the next day.

In the evening, the retiring President, Professor George J. Brush, delivered the customary address. His subject was "The Progress of American Mineralogy."

The next morning, Dr. Carpenter, of London, gave, in the section of Histology and Microscopy, a lecture on "Angular Aperture in Relation to Biological Investigations," taking the ground that a dissolving lens of wide angle is not so good for general biological work as a lens of more moderate angle and higher defining power. During the day papers were read by Professor Samuel Lockwood, of Freehold, N. J., on "The Mastodon in New Jersey;" Professor Meehan, on "The Fertilization of Yucca;" Professor Elliott, on "International Time;" Professor Brewer, on "The Apparent Size of Magnified Objects;" W. L. Stevens, on "Vision by Electric Spark;" Joseph Letoile, of Ottawa, "A Review on Subjects of Atmospheric Currents, Electricity, and Gases, with a view to Practical Aerial Navigation by Balloons;" and Professor Mupan, on "Variations in Nature." A paper on, "How Physical Law should be Taught," was read by Vice-President Mendenhall. Professor Trowbridge, of Harvard University, delivered an address on "The Importance of Experimental Research in Mechanical Science." Vice-President Cox, of San Francisco, read a paper on "Geography and Geology: Topography of the Rockies and Sierras." Professor Mason, of the Smithsonian Institution, presented "A Scheme of Anthropology," and Professor Rau, of the same institution, described a stone grave of a Kaskaskia Indian, the first find of this form of burial among natives known to be modern.

This day, August 24, was also marked by an assembly of the

ONTARIO ENTOMOLOGICAL SOCIETY.

An address was delivered by the President, William Saunders, editor of the Canadian Journal of Entomology. Many prominent entomologists from the United States were present, including Professor C. V. Riley, of Washington; Dr. Hagan, of Cambridge; Dr. J. Lintner, New York State Entomologist; Dr. J. H. Comstock, of Ithaca; and B. Pickman, of Maine.

THE KEELY MOTOR DECEPTION.

Mr. William Boekel, mechanic, has reported the results of his instruction by Mr. Keely, as required by the Court of Common Pleas in Philadelphia, and the stockholders of the Company are as wise as they were before.

The report was filed August 23, and runs in part as follows:

"First—That Mr. Keely has discovered a new force or motive power.

"Second—That the force or substance evolved by him through the instrumentality of his structure, designated by him under the varying nomenclature of 'vaporic force,' 'etheric force,' and approximate designations, possesses properties peculiar to itself, and wholly phenomenal in character, differing essentially in many particulars from those of compressed air or other gases, and requiring special machinery for its proper utilization."

Mr. Boekel begs for more time for Mr. Keely to perfect the utilization of his discovery, and for himself to enable him to master the subject so as to be able to give such a technical description of the motor as the law requires before the issuance of a patent. Though Mr. Keely, he thinks, has so far perfected his invention as to entitle him to Letters Patent, yet he (Mr. Boekel) does not yet "possess that intimate degree of knowledge of the entire subject to make it expedient, in his judgment, to recommend that the Court should now order such application to be made."

Those who have followed the history of this deception will remember that Mr. Boekel has been associated with Mr. Keely from the first, and has repeatedly given testimony quite as valuable as the foregoing. In 1874 he was one of the signers of the report of tests, on the strength of which the first stockholders were led to put money into the enterprise. In 1875 he wrote a letter (printed in this paper July 17, 1875), in which the correctness of Mr. Keely's claims were certified upon "personal knowledge," and "intimate knowledge of the construction of the machine and its operation."

It is strange that the company should expect, or pretend to expect, from such an old ally of Mr. Keely, the information they are ostensibly seeking. In 1875, Mr. Boekel professed to have intimate knowledge of the subject; now after years of experience and a long course of special instruction by Mr. Keely, he professes a lack of such knowledge. Whether the change is due to poverty of memory, or to the bewildering character of Mr. Keely's teaching, does not appear. But it is pretty certain that somebody pulled wool over the eyes of the stockholders in getting Boekel appointed as their representative. It is practically the same as if poor Keely himself had been appointed.