

Scientific American.

ESTABLISHED 1845

MUNN & CO., EDITORS AND PROPRIETORS.

PUBLISHED WEEKLY AT

No. 361 BROADWAY, NEW YORK.

TERMS FOR THE SCIENTIFIC AMERICAN.

(Established 1845.)

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, 20 lbs. 5d. 4.00

The Scientific American Supplement

(Established 1876)

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, for the U. S., Canada or Mexico. \$6.00 a year, or £1 4s. 8d., to foreign countries belonging to the Postal Union. Single copies 10 cents.

Building Edition of Scientific American.

(Established 1855.)

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. Each number is illustrated with beautiful plates, showing desirable dwellings, public buildings and architectural work in great variety.

Export Edition of the Scientific American

(Established 1878)

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. Every number contains about 100 pages, profusely illustrated. It is the finest scientific industrial export paper published.

MUNN & CO., Publishers, 361 Broadway, New York.
The safest way to remit is by postal order, express money order, draft or bank check. Make all remittances payable to order of MUNN & CO.

NEW YORK, SATURDAY, JULY 31, 1897.

Contents.

(Illustrated articles are marked with an asterisk.)

Table listing various articles such as 'Occupations of Americans', 'Ozone, atmospheric', 'Patents granted, weekly record', etc., with corresponding page numbers.

TABLE OF CONTENTS OF

Scientific American Supplement

No. 1126.

For the Week Ending July 31, 1897.

Price 10 cents. For sale by all newsdealers.

Table listing contents of the supplement by page, including sections like 'ARCHAEOLOGY', 'ASTROPHYSICS', 'BOTANY AND HORTICULTURE', etc.

THE SUGAR INDUSTRY IN THE UNITED STATES.

There is every indication that during the next few years the beet sugar industry is destined to occupy a very prominent place among the great industrial and commercial questions of this country.

The statistics of the sugar industry for the year 1896 show that the total consumption of sugar in the United States amounted to 2,093,819 tons, equal to a per capita consumption of 63 pounds. Of this amount 1,739,313 tons were imported from abroad and 354,506 tons represent domestic production—that is to say, for one ton of sugar manufactured in the United States we brought in five tons from other countries.

Of the two sources of sugar, sugar cane and sugar beets, the former is the older and better known. It is said that it was the blockade of France during the Napoleonic wars that turned the attention of the French people to the culture of the sugar beet, and that to this emergency Europe owes its present sugar beet industry.

The question naturally arises: Is there any difficulty of soil or climate which at once renders us dependent upon these countries for our own supply and prevents us from taking part in this vast and profitable industry? To which it must be answered that no such difficulties exist, inasmuch as there is a broad belt of country reaching in a continuous line from the Atlantic to the Pacific, several hundred miles wide and over three thousand miles long, which is admirably suited to the growth and harvesting of the sugar-producing root.

which lie well outside of this limit. Mr. Herbert Myrick, who should speak with authority, draws the northern boundary of the belt from Troy, N. Y., through Lake Ontario, central Michigan, central Wisconsin and Minnesota, northern North Dakota and Montana, terminating it at the western end of the border line between the latter State and Canada, thus including the whole of Washington and Oregon.

A soil, loamy and not too stiff, abundant sunshine, a moderate amount of moisture and favorable weather during the period of ripening and harvesting are the elements which constitute a good sugar beet country, and whenever these have been present the experiments which have been made in beet culture have met with encouraging success. To render the cultivation of beets profitable, however, it is necessary that the beet farm should be within easy reach of a beet factory, for it is evident that the amount of profit realized by the farmer will vary, other things being equal, as the distance which his crop has to be hauled.

Altogether it must be admitted that the possibilities of this new industry, both for the farmer and the capitalist, are great and not easily overestimated. If the cultivation of the sugar beet and the manufacture of beet sugar can be once widely and firmly established, our farmers will be largely delivered from the anxiety and risks which attach to a "one crop" country, and the country itself will be keeping at home a sum of money equal to the value of our whole export of wheat and flour.

JEOPARDIZING TRADE MARK PROPERTY.

It is strange that a very considerable number of business men should, through carelessness or ignorance, seriously jeopardize this species of property. One of the greatest dangers is unwittingly to give an otherwise valid trade mark a descriptive significance. This occurs when the trade mark is a word which, though it be fanciful in itself, takes on a descriptive value so as directly to convey a meaning descriptive of the goods, their quality, grade, nature or character.

Another result of not registering, but relying merely on common law protection: We have in mind one or two notable trade marks lost to the originator by failure to register. It will answer to call one the Lion brand. The originator thought a red lion very proper. The trade mark was not registered, and so it came to pass that ingenious imitations in different parts of our enterprising country eventually became as numerous as the great Barnacle family and more discriminating, until, like old country inns, we had the blue lion and the white lion and lions piebald; lions rampant and lions courant; lions passant and lions couchant and their kindred. To the complaint of the originator, it