

Science and Art.

The Cochineal Plant.

The last report of the Patent Office relating to agriculture directs some attention to the cultivation of the above plant. The fact is, there is no difficulty connected with its cultivation; it grows abundantly in Florida and Texas; but that is a very different question from rendering it profitable. This plant of the cactus tribe is cultivated in Mexico and Honduras for the sake of the insect or bug which feeds upon it, and which is employed for the purposes of dyeing red, crimson, and scarlet colors on silk and wool. It is sold at present for about one dollar and a half per pound—retail price—and is an expensive article. It is employed with a mordant of the chloride of tin and cream tartar in dyeing, and with alum for making fine carmine inks, and lakes for painting. The colors produced from it are very brilliant and beautiful—no other known red coloring drug equals it. Were it cheaper, more of it, no doubt, would be employed, and it would save a great amount to the country every year, as *lac* which is imported from the East Indies is now used extensively as a substitute for it, simply because it is cheaper, although it requires four times more of it to produce as intense a color and is not so brilliant then.

But can we cultivate the cochineal cheap? that is the question. The dye drug is the insect, not the plant. Now the insects are small—only about the size of large rose-bugs—therefore, when they are dried it takes very many of them to make a pound. Without cheap labor to attend the plants, smoke the bugs, and gather them in sheets from the cactus, there is no use of attempting to cultivate the plant for the insect. The cultivation of the cochineal in Texas is simply a question of economy, not of climate or soil. The Indians are the only persons employed to collect these insects in Mexico, and they labor for a few cents per day.

We direct attention to this question, in order that those of our readers who own lands in Texas and Florida may know exactly what are the real difficulties in the cultivation of cochineal. It would be a source of great pleasure to us, and profit to our country if this insect could be raised cheaply and in abundance. Can this be done?

Renovating Furs.

As the season for wearing furs is at hand, a few words on the subject will be useful to many persons.

Muffs, capes, cuffs, and other articles of fur should be beaten smartly with a switch, then brushed with a stiff brush, and carefully examined. If there are any moth-eaten parts in them they should be cut out, and their places supplied with other pieces of fur which match them in color, neatly sewed in. The lining and stuffing will have to be removed for this purpose. White furs should be rubbed over smartly with a stick of pipe clay, then switched, and afterwards carefully brushed. This operation will make them look clean.

To remove grease from furs they require to be treated thoroughly by a person engaged in the business; still, any person may remove some of the grease from a muff or cape by placing the article on a table, covering the spot with a layer of soapstone dust about an inch deep, laying a sheet of blotting paper upon it, and on the top of that a warm flat iron—not too hot. The heat of the iron softens the grease in the fur, and the soapstone dust then absorbs it. Warm soapstone dust rubbed among furs, then switched out and brushed off improves their appearance. Soapstone dust can thus be employed for all kinds of fur, and of every color.

Cure for Rheumatism.

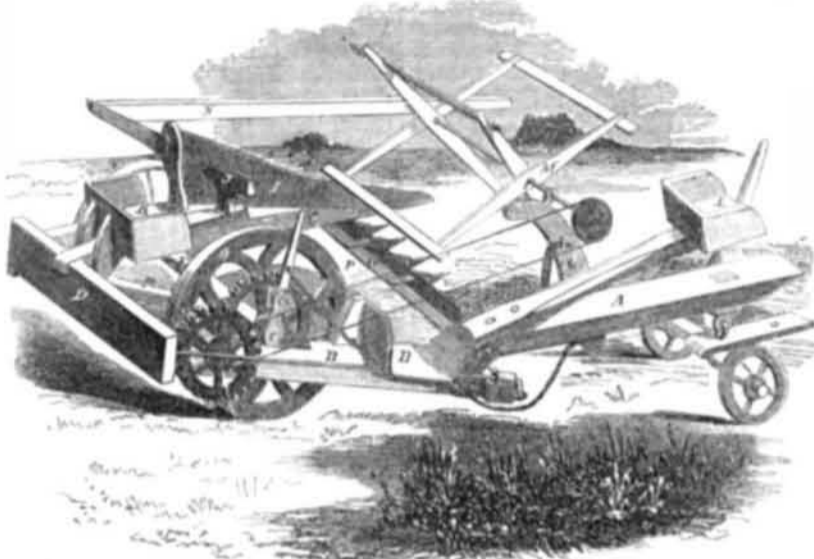
The following from the *Medical World* may be very beneficial to many persons who are suffering and subject to such a painful complaint as rheumatism:—

"Where one-third of the male population complain to some extent of rheumatic pains, in the fickle climate of New England, but more especially along the sea shore, physicians

have it in their power to mitigate an immense amount of severe suffering by prescribing the volatile oil of mustard. It is employed as a rubefacient, being first diluted in its own weight of alcohol at forty degrees. Some patients may object to its pungent odor, but that is temporary, while the remedy may, in some cases, prove a permanent cure. Make the application at least twice a day, and pro-

tect the part with soft flannel. Mustard mills are in operation in the cities generally, at which the oil may be procured, it being an article not much in demand in the arts. Were it not for detecting it by a pungent odor, this oil would have become a secret remedy for rheumatic pains years ago. A nostrum loses miraculous efficiency and curative properties on becoming known."

MANNY'S REAPING MACHINE.



This figure is a perspective view of Pell's Manny's improved Harvester, embracing the result of several patents—two being granted on the 21st of October last. These two cover improvements in preventing the cutters from choking; also in preserving them horizontally, while the finger also conforms to the inequalities of the ground. Another, granted on the 4th of last month, relates to an improvement in the raking operation.

A B C D represent part of the framing supported on the truck or running part. E is the main driving axle, and F is the adjusting bar. O is the driving wheel. The reel, M, is revolved by a band passing over pulleys, as shown. I is the guide wing board of the machine bounding the platform, P, on which the cut grain is received. K is the raker's seat. The grain is raked out at the discharge chute, H. G is the finger bar; L the driver's seat; N is the reel rail, and J the raker's rest.

The cutters receive their traversing motion from the crank on the end of their connecting rod (which passes under the discharge chute, H,) and which is revolved in the usual way.

The fingers connected with the cutters are inclined on their upper surfaces downwards and towards the back ends, and they are also of a concave form. There is a space allowed between the cutters and the finger bars, and the cutters are prevented from clogging, for when cutting grass, which is the most liable to clog, it has an opportunity of passing backwards underneath the cutter bar, and it is cut and cleared by a set of back cutters on the bar.

The adjusting bar, F, is placed diagonally underneath the frame, and its ends are connected to the finger bar of the machine; a screw passes through the axle, E, and bears upon bar F, therefore by operating the screw, the bar, F, may be depressed in the center, so as to keep the finger bar perfectly horizontal. This bar prevents the front end of the frame from sagging.

By the form of the guide wing board, the cut grain is received on the platform, to allow the raker to rake it off at the side, in gavels or bundles with the heads of the grain outwards. By the manner in which this bar is connected with the front wheels, and the back part of the frame, supporting the cutter bar, the cutters are allowed to conform in position to inequalities of ground, and at the same time they are held firmly in position for cutting in the heaviest grass or grain.

The claims of the two recent patents alluded to, of Mr. Manny, will be found on page 58 this volume *SCIENTIFIC AMERICAN*, where the objects of the improvements are briefly set forth.

Mr. Manny is one of the original inventors of the successful combined Reaper and Mower, and has devoted many years of time, study,

and labor to improve this great labor saving machine for farmers. It has now been demonstrated that such machines can do the work of reaping or mowing, as well as it can be done by hand, saving an immense amount yearly to farmers, who—to their praise be it spoken—have duly appreciated the benefits conferred upon them, by their liberal patronage of such machines. Mr. Manny is devoting himself to the improvement of other agricultural machines, believing that great improvements can yet be made in them all, and he is right. He has lately invented some new improvements for which he has applied for patents, these he adds to all his new machines.

More information may be obtained from him by letter (or otherwise) addressed to Wad-dam's Grove, Stephenson Co., Illinois.

New Seedling Strawberry.

Mr. Charles A. Peabody, of Columbus, Ga., has originated a new seedling strawberry of the *Hartbois* species, which promises to be of great value. The *Soil of the South* says:—

"It is hermaphrodite in its character, producing fruit without an impregnator, being itself a capital impregnator for pistillate varieties. It is a hardy, vigorous grower, withstanding both cold and heat without injury. In good soil the vine grows to an enormous size, we have single plants that cannot be covered by a half bushel measure. The fruit is borne upon tall stalks, suspended on stems from three to five inches long, attached to the calyx by a coral-like neck, without seeds—there being very few seeds in the berry. It is of singular and beautiful form, somewhat irregular, and sometimes compressed, of the largest size, frequently measuring seven inches in circumference; flesh firm, melting, and of the most exquisite pine flavor, requiring no sugar for the dessert, rivaling the far-famed Burr's New Pine. It is a prolific bearer, opening its blossoms during the mild days of winter, and perfecting its fruit as soon in the spring as the weather will permit. When fully ripe, the color is of a rich, dark crimson. But its rich color, beautiful form, magnificent size, and exquisite flavor, are not all its recommendations; through its firmness and lack of acidity, it bears transportation better than any strawberry ever introduced."

We have seen an elegant colored drawing, showing the plant in full bearing, the very sight of which made our mouth water. The "Peabody" seedling will become all the rage if it thrives as well at the North as it does down South.

Entomology.

Professor Agassiz says that more than a lifetime would be necessary to enumerate the various species of insects and describe their appearance. Meiger, a German, collected and described 600 species of flies which he col-

lected in a distance of ten miles circumference. There have been collected in Europe 20,000 species of insects preying on wheat. In Berlin, two professors are engaged in collecting, observing, and describing insects and their habits, and already they have published five large volumes upon the insects which attack forest trees.

Literary Notices.

DR. KANE'S ARCTIC EXPEDITION—This splendid work has just been issued in two volumes. It is illustrated with a great number of beautiful steel plates and wood cuts, and the paper and typography are excellent. It is full of thrilling adventure. The many perils which Dr. Kane and his companions encountered in the lonely, dreary, dangerous Arctic regions are detailed in a graphic manner. Dr. Kane discovered the open polar sea and although much suffering has been endured by all Arctic expeditions, and the North-West Passage discovered, we are of opinion that we have not seen or heard of the last of them. This open Polar Sea will attract the daring navigators to go and seek to explore its boundaries. This work is published in two handsome volumes, by Childs & Peterson, of Philadelphia, and it has already had a deservedly large sale. It is a book which should be in every respectable library. For sale by Putnam & Co., publishers, Broadway, this city.

PORTER'S CHEMISTRY—Messrs. A. S. Barnes & Co., John St., this city, have just issued this excellent work, by Professor Porter, of Yale College. It is intended to be a hand and class book for practical study. It contains the elements of the science, describing easy methods for acquiring a very good knowledge of it. It is illustrated with excellent wood cut, of simple apparatuses, to show how the experiments may be performed. The style of the author is brief and clear, containing a great deal of information in a very small space. We welcome this work as a valuable contribution to our scientific literature. It is adapted for the higher schools and academies, and for private study.

If any of our readers desire to take a journal devoted to metallurgy and mining, we recommend the *Mining Journal*, edited by Wm. J. Tenny. It is a good work. Published monthly by John F. Trow, 377 Broadway.—Terms, \$5 per annum.

GARDNER ON STERILITY—This is a work by Dr. Augustus K. Gardner, of this city, on the above subject; published by Dewitt & Davenport, Nassau St. It is illustrated with excellent colored plates, and is well printed, making a handsome volume. It has caused considerable controversy among the faculty; some speaking of it in the highest terms, and others expressing a reverent opinion. It is admitted to be ably and clearly written, containing much not before known on the subject.

THE KRICHEBROCKER—This old favorite lively and intellectual magazine for this month, contains eighteen original papers—stories, poetry, &c., besides literary notices, and the usual *Best of Humor* in the Editor's Table. It contains a criticism of Bothwell—Professor Ayton's late poem. Published by S. Hueston, No. 38 Broadway.



Inventors, and Manufacturers

TWELFTH YEAR

PROSPECTUS OF THE
SCIENTIFIC AMERICAN.

This work differs materially from other publications being an ILLUSTRATED PERIODICAL, devoted chiefly to the promulgation of information relating to the various Mechanic and Chemic Arts, Industrial Manufactures, Agriculture, Patents, Inventions, Engineering, Mill-work, and all interests which the light of PRACTICAL SCIENCE is calculated to advance.

The *SCIENTIFIC AMERICAN* is printed once a week, in convenient quarto form for binding, and presents an elegant typographical appearance. Every number contains *Eight Large Pages*, of reading, abundantly illustrated with ORIGINAL ENGRAVINGS—all of them engraved expressly for this publication.

All the most valuable patented discoveries are delineated and described in its issues, so that, as respects inventions, it may be justly regarded as an ILLUSTRATED REPERTORY, where the inventor may learn what has been done before him, and where he may bring to the world a KNOWLEDGE of his own achievements.

REPORTS OF U. S. PATENTS granted are also published every week, including *Official Copies* of all the PATENT CLAIMS. These Claims are published in the *SCIENTIFIC AMERICAN* in advance of all other papers.

Mechanics, Inventors, Engineers, Chemists, Manufacturers, Agriculturists, and People of every Profession in Life, will find the *SCIENTIFIC AMERICAN* to be of great value in their respective callings.

Its counsels and suggestions will save them *Hundreds of Dollars* annually, besides affording them continual source of knowledge, the experience of which is beyond pecuniary estimate.

Much might be added in this Prospectus, to prove that the *SCIENTIFIC AMERICAN* is a publication which every Inventor, Mechanic, Artisan, and Engineer in the United States should patronize; but the publication is so thoroughly known throughout the country, that we refrain from occupying further space.

TERMS OF SUBSCRIPTION—\$2 a year, or \$1 for six months.

CLUB RATES.

Five Copies for Six Months,	\$4
Five Copies for Twelve Months,	\$8
Ten Copies for Six Months,	\$8
Ten Copies for Twelve Months,	\$5
Fifteen Copies for Twelve Months,	\$22
Twenty Copies for Twelve Months,	\$28

For all Clubs of 20 and over, the yearly subscription only \$140.

Post-pay all letters, and direct to

MUNN & CO.,
128 Fulton street, New York.

For list of Prizes, see another page.