

Grass Cloth.

Grass cloth is manufactured from the fibers of a plant called by the Chinese *Ma*; it is a generic term, under which several varieties of that species are included. It is a *canna* *bis*, or hemp.

It has an irregular cellular root of a yellowish white color, which sends up annually ten, fifteen or more stems, to the height of from 7 to 10 feet. The stems are upright, slightly fluted, pilous and herbaceous; its leaves are on long petioles, alternate, ovate, roundish, serrate, simple. The upper surface pilous and dark green, the lower of a silver gray. The flowers are described as minute, numerous, of a light green color, on a catskin-like receptacle or spike. It is found at the base of hills and on dry soils, from Cochinchina to the Yellow river, and from Chusan to the farthest west that reaches for the present can extend, and abounds chiefly in Kiang-su, Kiang-nau, Chih-kiang, Fuh-kiang, and the Canton provinces.

The plant is mentioned in the Chinese classics, and was undoubtedly cultivated and employed by them a thousand years prior to our era.

The plant yields three crops every year. The first cutting takes place in June. On being cut, the leaves are carefully taken off with a bamboo knife by women and children, generally on the spot. It is then taken to the house and soaked in water for an hour, unless it is already wet by recent showers. In cold weather, the water should be tepid. After this the plant is broken in the middle, by which the fibrous portion is loosened and raised from the stalk; into the interstice thus made, the operator, generally a woman or child, thrusts the finger nails and separates the fibers from the center to one extremity and then to the other. The stripping process is very easy.

A partial bleaching is effected on the fibers before they undergo further division, sometimes by boiling and at other times by pounding on a plank with a mallet. These operations are in some places repeated. After being dried in the sun, an important operation then proceeds by women and children, to whom is entrusted the tedious process of splitting the fibers, which they do with their finger nails. Expert hands are able to carry this division very far. When this process has been preceded by hatcheling, the threads are finer and softer. The threads are formed into balls and subjected to frequent soakings and washings. The ashes of the mulberry leaf are recommended to be put in the water with the hemp (some use lime) for a whole night. Others simply expose it to dew and sun. In rainy and cloudy weather, it should be exposed to a current of air in the house; moisture darkens it. The threads are now ready for splicing—the work of women and children, the labor of the agriculturist being concluded—when the threads are rolled into balls after being sized or stiffened with congee. Before the thread is ready for the weaver, the balls are steamed over boiling water in a closed oven. They are then spread out to dry.

Grass cloth is superior to linen for garments in hot climates; the latter, being a rapid conductor of caloric, is often unsafe; the former is not so good a conductor and is therefore more suitable. This may be owing to the fact that the latter is hotpressed, by which it is rendered compact and smooth, while the process to which the other is subjected for the same purpose but partially affects it, or there are original differences in the fibers of European and Chinese linen.

Convulsions of Nature.

A tornado on its windy way struck the earth at St. Louis recently, demolished one large building, demoralized several others, caused the loss of one life and the serious personal hurt of several persons, and then bounded up into the air and has been heard of no more, though the St. Louis people surmised that Illinois might be struck by the same hurricane. This was a strange storm, and was organized on novel principles. It is one of a class not uncommon in the West, though rare in the cold season. But the whole winter has been prolific in meteorological wonders. Snowstorms of intense severity in the Rocky Mountains, winds of fierce and cruel coldness in Iowa and Minnesota, steady cold in the East, little rain and snow over large portions of the North, and frequent snow falls in the States below the Potomac—these are some of the peculiarities of a season which will be long remembered for its eccentricity.

Now, too, we have an account of a terrible earthquake in Southern California. Three hundred shocks were felt in the space of three or four hours. The first shock destroyed the small town of Lone Pine, and buried its inhabitants in the ruins of their low adobe huts. Thirty persons were killed and three hundred wounded. The earth was cracked and torn up, and a volcano is reported. The water in Owen's Lake was raised four feet, and Owen's river overran its banks. The district visited is volcanic, and so far removed from the more populous and better known portions of the State that no fear is apprehended of seismic commotions at San Francisco.—*Commercial Advertiser.*

WEBSTER'S spelling book has been on sale for the past ninety years, and more than fifty millions of copies have been sold. During a period of twenty years, the author received a royalty of less than one cent per copy; but his net income from the sales was sufficient to support his family while he prepared his greater work, "Webster's Dictionary."

COMMODORE BROWN, Chief of the Virginia Oyster Police force, expresses the opinion that the whole Chesapeake may be made an oyster bed by a judicious policy. The water is nowhere too deep for the oyster to live and flourish.

Examples for the Ladies.

Mrs. T. M. Scullin, Troy, N. Y., has used her "dear friend," a Wheeler & Wilson Machine, since 1858, in dress and cloak making. The last six months she earned \$332, and the year before, \$117.

Mrs. Mary Hacher, Muscatine, Iowa, has used her Wheeler & Wilson Machine since September, 1857, and earned from \$10 to \$20 a week, making dresses and cloaks, from the finest to the heaviest, and her machine is now in as good order as when she bought it.

Mrs. C. D. Goodman, Cleveland, Ohio, has used her Wheeler & Wilson Machine 4½ years with the same No. 2 needle that came in it without breaking or blunting it.

Mrs. J. R. Bowen, Wellsboro, Pa., has used her Wheeler & Wilson Machine almost constantly since 1859 on all kinds of material, without any repairs or personal instruction.

The Public have for years endorsed *Burnett's Cocoon* as an unrivaled hair dressing.

Watch No. 12003, Stem Winder—bearing Trade Mark "United States Watch Co., Marion, N. J."—manufactured by the United States Watch Co. (Giles, Wales & Co.), has been carried by me two months; its total variation from mean time being six seconds in the entire time.—W. S. DUNN of H. B. Clafin & Co., New York.

Business and Personal.

The Charge for Insertion under this head is One Dollar a Line. If the Notices exceed Four Lines, One Dollar and a Half per Line will be charged.

The paper that meets the eye of manufacturers throughout the United States—Boston Bulletin, \$4 00 a year. Advertisements 17c a line.

Millstone Dressing Diamond Machine—Simple, effective, durable. For description of the above see Scientific American, Nov. 27th 1869. Also, Glazier's Diamonds—John Dickinson, 64 Nassau st., N. Y.

Over 800 different style Pumps for Tanners, Paper Makers, Fire Purposes, etc. Send for Catalogue. Rumsey & Co., Seneca Falls, N. Y.

Portable Mulay Saw Mill, that may be run profitably by the power of a Threshing Engine. Manufactured by Chandler & Taylor, Indianapolis, Ind. Send for circular.

For Diamond Turning Tools for Trueing Emery Wheels and Grindstones, address Sullivan Machine Co., Claremont, N. Hamp.

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If you want a perfect motor, buy the **Baxter Steam Engine**.

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Improved Foot Lathes, Hand Planers, etc. Many a reader of this paper has one of them. Selling in all parts of the country, Canada, Europe, etc. Catalogue free. N. H. Baldwin, Laconia, N. H.

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The **Baxter Steam Engine** is safe, and pays no extra Insurance.

We have a soft white rock, entirely free from grit of any kind. I wish to know the most feasible plan of cutting, dressing, and preparing for market. It is easily cut with any kind of saw, and will polish easily. Please give me reliable information as to the best tools used—how used, where made, and also if there is any planer or dresser for finishing the same. My engine is twenty horse power. W. S. Almond, Sherman, Texas.

Wanted—Peck's Patent Lifter, medium size, second hand, in good order, at reasonable price. Kittredge, Clark & Co., Mfr's Sheet Metal Architectural work, Salem, Ohio.

For Circulars of Miter Dovetailing Machines, with or without the Angular Attachment, patented Nov. 23, 1871, address, for price and particulars, Asahel Davis, Lowell, Mass.

Tested Machinery Oils—Kelley's Patent Sperm Oil, \$1 gallon; Engine Oil, 75 cts.; Filtered Rock Lubricating Oil, 75 cts. Send for certificates. 116 Maiden Lane, New York.

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Hoisting and Pumping Engines (Locomotive principle); best and simplest, from 6 to 40 H.P. J. S. Mundy, 7 R. R. Av., Newark, N. J.

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Mowing Machine Grinders, new plan—Mitchell, Phila., Pa.

Wanted, Cuts of Stave and Heading Machine by horse power. J. B. Moorcroft, Thebes, Alx Co., Ill.

Wanted—A Partner in a well established Machine Shop—with from \$3,000 to \$7,000. Must be a practical man, and capable of taking charge of the manufacturing. Address John Lane, Jr., 95 Liberty St., N. Y.

Patent Sheet Iron Roofing, Fire, Water, Wind and Rust Proof. No Nails, Screws, or Solder used. C. A. Scott, Patentee, Cincinnati, Ohio.

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The most economical Engine, from 2 to 10 H.P., is the **Baxter**.

Presses, Dies, and Tanners' Tools. Conor & Mays, late Mays & Bliss, 4 to 8 Water st., opposite Fulton Ferry, Brooklyn, N. Y.

In the Wakefield Earth Closet are combined Health, Cleanliness and Comfort. Send to 36 Dey St., New York, for descriptive pamphlet.

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If you want to know all about the **Baxter Engine**, address Wm. D. Russell, office of the Baxter Steam Engine Co., 18 Park Place, N. Y.

Shive's Patent Watchman's Clock and Time Detector—the best ever made. Price \$15. Shive Governor Company, Philadelphia, Pa.

Save your Boilers and Save Fuel—Use Thomas's Scale Dissolver, pr. 5c. per lb., in bbls. and ¼ bbls. N. Spencer Thomas, Elmira, N. Y.

Enameled and Tinned Hollow-Ware and job work of all kinds. Warranted to give satisfaction, by A. G. Patton, Troy, N. Y.

Best and Cheapest—The Jones Scale Works, Binghamton N. Y.

Mining, Wrecking, Pumping, Drainage, or Irrigating Machinery, for sale or rent. See advertisement, Andrew's Patent, inside page.

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Peck's Patent Drop Press. For circulars address the sole manufacturers, Milo, Peck & Co., New Haven, Ct.

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All kinds of Presses and Dies. Bliss & Williams, successors to Mays & Bliss, 118 to 122 Plymouth St., Brooklyn. Send for Catalogue.

For Steam Fire Engines, address R. J. Gould, Newark, N. J.

Notes & Queries.

[We present herewith a series of inquiries embracing a variety of topics of greater or less general interest. The questions are simple, it is true, but we prefer to elicit practical answers from our readers.]

- 1.—**REVOLVING SHAFT.**—Is there a point in a revolving shaft that does not move?—C. C. H.
- 2.—**BATTERY POWER FOR SUBMARINE CABLES.**—What battery power is used on the Atlantic cables, and how little will work them?—S. B. P.
- 3.—**DURABLE WHITEWASH.**—What will render whitewash as durable as paint? Will sugar of lead do it? White zinc and barytes cause it to wash off.—E. C. W.
- 4.—**POLISHING SHELL.**—Will some one be kind enough to inform me the best way to obtain a fine polish on shell combs and eyeglasses?—H. E. R.
- 5.—**CONDUCTING POWER OF SILVER WIRE.**—Can you inform me which is the best conductor of electricity, hard drawn or annealed silver wire?—G. F. G.
- 6.—**FINISHING FURNITURE.**—Will some of your correspondents inform us of the cheapest and best method of staining and finishing common bedsteads?—A. & M.
- 7.—**LAMP CEMENT.**—I would like to know if there is anything that I can use to soften the material used to fasten on the tops of kerosene lamps, so that the tops can be easily removed?—T. S.
- 8.—**ASBESTOS PACKING.**—Will some one, of the host of engineers who read your journal, inform me of the method of using asbestos packing on piston and valve rods? Can the powdered asbestos be used for packing?—D. A. N.
- 9.—**PACKING RINGS.**—Should cylinder packing rings have the recess for Babbitt's metal turned out, or should a place be left solid through which to cut them? Also what is the proper thickness of rings for a 14 inch cylinder?—S. S. L.
- 10.—**DOMESTIC EMPLOYMENT.**—E. S., of Canada wants to know a branch of industry which will enable him and his children to find constant home employment without necessitating the separation of the family.
- 11.—**POLISHING PICTURE FRAMES.**—I wish to know in what manner moldings for picture frames are polished. They are of black walnut. I wish to know the process and the materials. I wish also to know the process of varnishing chromo pictures, and the necessary material.—E. B.
- 12.—**CANVAS BOAT.**—How can I make a canvas sporting boat, composed of two sections, to be handy for transportation? What should be the length and breadth, and of what should the framework be? How can I shrink the canvas on the frame and make it water tight? The boat is to be large enough for two persons.—W. V. J.
- 13.—**MORTAR FOR DRYING OVENS.**—I use four inch brick walls, in drying ovens exposed near the furnaces to a temperature of 250° Fahr.; and I find that lime mortar crumbles and soon loses its adhesive properties. What can I use that will be free from the above objections, and that will give a strong and durable bond?—J. K. C.
- 14.—**DOUBLE BASS.**—Will some one give me the size and proportions for a double bass, and the best material and varnish for the purpose?—M.
- 15.—**PRESERVING BIRD SKINS.**—I wish to cure some bird skins. Can any of your numerous readers give me the desired information?—W. J. L.
- 16.—**TEMPERING BARREL SAW.**—How can I best temper a barrel saw to saw staves? Is there any way to temper it after it is rolled?—J. E. R.