

## Scientific Museum.

For the Scientific American.

### Tanning—Practical Remarks.

(Continued from page 232.)

It is very important to have a fine grain upon the leather, when finished, to please the eye as well as the hand; attention to the suggestions which follow will greatly improve the appearance and quality of the leather. It should be scrubbed thoroughly in clean water, when first taken out, before exposure to the air. Formerly this was done by hand—a laborious operation, seldom effectual. It is now done by a machine. A cylinder of wood four and a half feet long, twelve in diameter, with a wrought iron shaft secured to a stout frame and geared to run 4 to 600 per minute, with three rows of stiff brushes inlaid on the surface, breaking joints with each other. Another frame hung before the cylinder by bolts through the side pieces, with a four inch roller of wood at the top, and an apron below, raised at the pleasure of the operator,—a lead pipe perforated with small holes on one side, placed over the cylinder, allows a stream of water to flow on to the face of the leather, as it is passed over the roller and before the brushes. The sides drop at the feet of the operator, when they are changed and once more put through the machine the other face being brought against the brushes as before, cleaning both grain and flesh thoroughly. They are passed into another vat of clean water—rinsed and drawn out and spread in a pile at full length, the flesh side up, the backs all one way, where they are allowed to lay and drain over night.

A light dressing of tanners oil is rubbed over every part of the flesh, with a woolen cloth, and the side shifted to another pile, with the grain up. Enough oil for the purpose is imparted to the grain by the contact. The following morning the woolen cloths are passed over the whole grain dry, the sides are wheeled to the drying loft, usually the second story or garret over the yard, where they are hung on poles, without touching each other. This apartment is closed against the light and air, until the edges begin to dry, when more or less air is admitted, as is the atmosphere abroad, or the sides are removed to the rolling loft and hung up by one end, on hooks or nails, where the air circulates freely. The oil being applied in small quantity, when the leather is wet, principally affects the surface, checks rapid drying, leaving the leather pliable and fair, while, without this application, it is often darkened, and sometimes brittle, when strong liquors have been used. As the sides become dry they are gathered and piled upon a platform, erected a few inches above the floor in the rolling loft, flesh up. They are springled with clean water by a common broom, on both side, (as a laundress sprinkles her clothes before ironing) and laid in a snug pile to temper over night, the parcel being covered with a sail cloth, or they are packed into a box of common rough boards, large enough to receive them spread and covered over until morning, when they are in order for rolling—which we shall describe in our next.

### The Works of Science.

There is a general confidence in the mighty power of science as a wonder-worker, applying the inventions to objects of practical utility. Unless a new discovery is good for something, it is good for nothing. Gutta Serena would be valueless if it could not be moulded into tubes, and a thousand other things of practical benefit. Cullodion is used for healing wounds, and gun cotton for blasting rocks. Chemistry scours and dyes, bakes, brews, cooks and compounds drugs with contented composure. Electricity leaves her thunderbolt in the sky, and, like Mercury dismissed from Olympus, acts as a letter carrier and message boy. Even the mysterious magnetism, which once seemed a living principle to quiver in the compass needle, is unclothed of mystery, and set to driving turning lathes. The public perceives all this, and has unlimited faith in man's power to conquer nature. The credulity which formerly fell upon unicorns, phoenixes, mermaids, vampires, krakens, pestilential

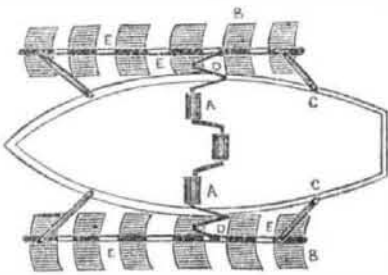
comets, fairies, ghosts, witches, charms, spectres, curses, universal remedies, pactions with Satan, and the like, now tampers with chemistry, electricity and magnetism, as it once did with the invisible world. Shoes of swiftness, seven league boots and Fortunatus's wishing caps, are banished from the nursery; but an electro-magnetic steam fire balloon, which will cleave the air like a thunderbolt, and go as straight to its destination as the crow flies, is an invention which many hope to see realized, before railways are quite worn to pieces. We can harness the lightning easier than the human mind. Who has been able to limit the constructive powers of man? The Chinese have a fine proverb, "Nothing under heaven is impossible to man, if he has only resolution of purpose."

### History of Propellers and Steam Navigation.

(Continued from page 232.)

#### THE WINGED BOAT.

FIG. 34.



Some of the most extraordinary inventions have burst upon the world, astonishing nobody but their projectors, except it may be surprise at their futility, instead of utility. One man imagines that the wings of birds are the grand subjects for copying after in works of art, to propel balloons, and another imagines that the fins or tails of fishes are the true forms to copy after for propellers in water. But as balloons are not eagles, neither are steamboats sharks, whales or dolphins. Who would have thought, however, that wings were the best appendages for a steamboat, because they are the best for aerial locomotion. Nevertheless, here we have them. The invention is now 30 years old, and does credit to the name of Mr. Dixon Vallans.

A A is the crank; B B are the wings; C C are the arms, which have moving joints; D D are the shafts, which give motion from the crank to the wings; E E E E are the leaves or feathers of the wings, which, by the forward motion of the crank, folds nearly close to the wing; and by the backward motion folds back, and forms a strong pressure against the water; and by that means impels the boat forward with great velocity. The feathers may be either of hard wood or sheetiron, six or eight inches broad, and one foot six inches or two feet long, or they may be made any size according to the size of the vessel.

FIG. 35.

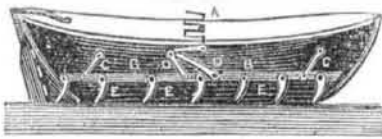


Figure 1 is a horizontal view. Fig. 2 is a side view. The same letters refer to like parts.

When this invention was first brought out, it was to make a boat run three times faster than with paddle wheels, but it never did it. It affords a useful lesson for others, and not a small number either, for inventions for the same purpose, less plausible than this, have been brought forward frequently since the above was first brought into notice.

### Potatoes.

Messrs. Editors—As every thing connected with science and usefulness worthy of a place, finds the same in your widely extended journal, I propose to give a few hints by which the disease of this root may be prevented. Now is the seed time, and farmers may take immediate advantage of this plan. All vegetation deteriorate and change from lapse of time, some kinds sooner than others, particularly where the soil is of a nature unfavorable to the growth. This is sometimes assisted by the application of manure, inapplicable to the wants of the pro-

duce, 1st, It is proposed to plant whole tubers from the 3rd or 4th year from the seed; the practice of cutting them, hastens the change, and does not afford the nourishment nature requires.

2nd, They contain, among other ingredients, a large proportion of magnesia, and they will not attain perfection unless this substance be in the soil or applied as manure. Bran, urine and epsom salts, contains this substance, and are therefore useful.

3rd, After the plants shall have arrived to six or nine inches above the soil then pinch off half an inch of each twig, and repeat this operation at the end of 10 or 11 weeks from planting, no matter at what time of the day. This method checks the transformation by the leaves and increases the power of the roots.

4th, If the above has not been done to the crop, the amount of produce may be much augmented by taking off the flowers as soon as they appear; this increases the crop, as they are prevented from forming their seed.

The third position is a discovery of Dr. Klotzsch, presented to the King of Prussia, and was tried in 1845-6-7, with complete success. Should this prove true by extended experience, after three years' trial, he is to receive \$2,000 remuneration from the government. J. C.

### Evaporation from the Thames.

Upon Mr. Glaisher's estimate, 678,505 gallons evaporate from an acre of water in a year, which is at the rate of 1,857.6 gallons daily. The bed of the Thames, in London, is estimated approximately at 2,245 acres, consequently 4,170,000 gallons are raised from the Thames, on an average, daily through the year. The quantity evaporated at low water is, perhaps, much less than this; on the other hand, the evaporation in summer is more active than in winter; and the proportion of decomposing organic matter in the water, and on the banks exposed to evaporation, is greater at low than at high water. Upon the whole, it is probable that in summer four million gallons, or about 900 tons of water are raised from the polluted Thames daily, and discharged into the atmosphere which is breathed by the inhabitants of London.

### To Drive Away Rats.

This may be done by stuffing their holes after the following manner, which will banish them away so that they will not return while the taste or smell remains: take one pound of common tar, half an ounce of pearl ash, as much oil of vitriol as will ferment a handful of common salt; mix them all together, spread the mixture thick on brown paper, and lay a piece in the bottom of the holes for them to walk on; then stuff some into the holes and fill them up with lime. Or another way: get a paper bagful of human hair, from a barber's shop, and stuff the rat holes with it—they will never appear there again.—[Gardener's Chronicle.

[This plan can be easily tested, a thing which we like to do with receipts, when the experiments are not too expensive. We have not tested the above but give it for what it is worth, as the periodical to which it is credited is very respectable.

### Cure for a Ringworm

The editor of the Plough, the Loom and the Anvil furnishes the following recipe, which he says is infallible for the cure of ringworm:

Heat a shovel to a bright red—cover it with grains of Indian corn—press them with a cold flat-iron. They will burn to a coal and exude an oil on the surface of the flat-iron, with which rub the ring worm, and after one or two applications it will be kilt as dead as Julius Cæsar.

### Sulphate of Silver.

This sulphate is best made by adding subcarbonate of soda to a nitric solution of silver, to throw down the carbonate of silver then dissolving this carbonate in weak sulphuric acid.

It is used to ascertain the presence of muriatic acid in mineral waters.

### Acetate of Silver.

Is formed by dissolving in hot acetic acid

the carbonate of silver, which is precipitated, when subcarbonate of soda is added to the nitric solution of silver.

It is also used to ascertain the presence of muriatic acid in mineral waters.

### A Singular Cure of Disease in the Spine.

The Glasgow Examiner relates a case, endorsed by the most respectable authority, of a young woman, named Jane Carrick, who had been a confirmed paralytic confined to her bed for 8 years, that has been completely cured by the application of airvessels, on the principle of cupping on the back (without extracting blood) and taking no medicine. Her spine has been restored to its proper position, and by two weeks' treatment was enabled to walk about. Experiments can easily be made to test the correctness of this mode of treatment for a disease which generally baffles the skill of our most eminent physicians. If there is any truth in the statement, it cannot be too widely known, nor too soon.

### LITERARY NOTICES.

DRAMATIC WORKS OF SHAKESPEARE.—No. 13 of the Dramatic Works of Shakespeare, by Messrs. Phillips, Sampson & Co., Boston, contains the Comedy of "Taming the Shrew," with an engraving of Katherine. The numbers of this beautiful edition are for sale by Dewitt & Davenport, Tribune Buildings.

NEW YORK LEGAL REGISTER.—This is the title of a very useful pamphlet, published by Willard Felt, 191 Pearl street, N. Y. It contains a sketch of all the principal Courts of the State—a list of Senators, Judges, Surrogates, District Attorneys, Sheriffs, County Clerks, &c., and the terms of the Supreme Court for 1850-51.

JOURNAL OF THE FRANKLIN INSTITUTE.—This worthy Magazine for March contains an excellent article on American Engineering and Locomotives, copied from the Glasgow Practical Mechanic Journal. It gives a full description of the "Mohawk," built by Mr. McQueen, for the Albany and Schenectady Railroad.

A NEW ROMANCE.—We have received from the publisher, F. Gleason, Boston, a new and brilliant tale, entitled, "The Mistake of a Lifetime: or, The Robber of the Rhine Valley." It is a story of the mysteries of the shore and the vicissitudes of the sea—embracing in its field an almost boundless extent of romance—depicting with a faithful and vivid pen the peculiarities of robbery life, piracies upon the high sea, the influences of the gaming table, the power of jealousy, the absorbing interest of mystery, and the power of love and beauty. It is for sale at all the periodical depots and book-stores, at the extraordinary low price of 12-2 cents, S. French, 151 Nassau st., (late 293 Broadway) N. Y. is wholesale Agent for the above work.



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