

THE AUSTRALIAN FEVER TREE.

A question of considerable general interest was recently discussed at a meeting of the French Academy of Sciences. The subject was the remarkable sanitary influence of the *eucalyptus globulus*, when planted in marshy grounds; and the tree in brief, it seems, has the curious and valuable power of destroying the malarious element in any atmosphere where it grows.

The species is indigenous to Tasmania, and is known among the colonists by the name of the Tasmanian blue gum tree, on account of its dark bluish tinged leaves. Growing in the valleys and on thickly wooded mountain slopes it, often attains a height of from 180 to 220 feet, with a circumference of trunk of from 32 to 64 feet. The foliage is thin and oddly twisted, surmounting, with a thin crown, the top of the pillar-like stem. The wood exhales an aromatic odor, and, after seasoning, is said to be incorruptible. For this reason, it is largely used in the building of piers, vessels, and other structures exposed to the ravages of the weather. It is largely exported, to the aggregate value, an authority states, of \$4,000,000 per year.

To the peculiar camphor-like odor of the leaves and the large absorption of water by the roots is doubtless owing the fact of the beneficial influence of the tree. Where it is thickly planted in marshy tracts, the subsoil is said to be drained, as if by extensive piping.

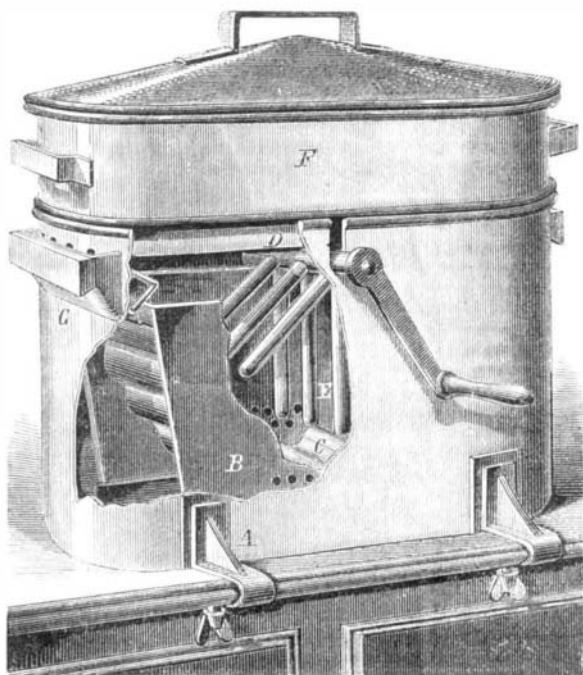
Miasma ceases, we are told, wherever the eucalyptus flourishes. It has been tried, for this purpose, at the Cape; and, within two or three years, completely changed the climatic condition of the unhealthy parts of that colony. Somewhat later, its plantation was undertaken, on a large scale, in various parts of Algiers, situated on the banks of a river, and noted for its extremely pestilential air: about 13,000 eucalypti were planted. In the same year, at the time when the fever season used to set in, not a single case occurred, yet the trees were not more than nine feet high. Since then, complete immunity from fever has been maintained. In the neighborhood of Constantina, it is also stated, was another noted fever spot, covered with marsh water both in winter and summer; in five years, the whole ground was dried up by 14,000 of these trees, and farmers and children enjoy excellent health. Throughout Cuba, marsh diseases are fast disappearing from all the unhealthy districts where this tree has been introduced. A station house, again, at one end of a railway viaduct in the department of the Var, was so pestilential that the officials could not be kept there longer than a year; forty of the trees were planted, and it is now as healthy as any other place on the line.

La Nature, to which journal we are indebted for the annexed engraving of the peculiar leaves and flowers of the tree, adds that careful experiments have proved that, in a medicinal preparation, it cures the worst cases of intermittent fever, against which quinine proves powerless. It is also valuable as a disinfectant, and as a dressing for wounds; while more recent investigations point to the fact that it may be rendered of great service in catarrhal affections.

The tree has been acclimatized, to a certain extent, in the South of France, Algiers, Corsica, Spain, Cuba, and Mexico. We should imagine that it might be cultivated, with immense advantages, in the swamps of our Southern States.

IMPROVED WASH BOILER.

In the novel form of wash boiler represented in our engraving, the laundress is provided with a means of boiling, washing, and rinsing clothes in, it is claimed, a most rapid



and efficient manner. The garments, it is further stated, are thoroughly cleansed, and this without injuring the most delicate fabrics.

The boiler proper is akin in shape to that usually employed, and is supplied with clamps, A, so that it may be firmly secured to the edge of the top of the stove or range by means of setscrews. Inside the main receptacle is placed a vessel, B, the sides of which are vertical and support a circular corrugated bottom, disposed as shown at C. In the

lower part of the sides are formed a number of perforations to allow of the free passage of the water. D is a shaft, one end of which is jointed in a socket secured to the main receptacle, and the other passes through a short vertical slot made in the edge of the latter, carrying at its extremity a crank. The shaft, which may be secured in this slot by a suitable latch, not shown, is provided with a number of radial arms, E, which project from its lower part, so as nearly to touch the corrugated bottom of the vessel, B. The water and soap being placed in the boiler, the clothes are laid in the inner receptacle, and, the crank being rocked, are caused by the arms, E, to sweep back and forth upon the corrugations, thus quickly being cleansed.



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In order to prevent the spattering of water out of the boiler, during the rinsing, an extension, F, is provided, which fits in the mouth of the latter, and this is surmounted by the cover, which conforms in shape to the opening of either extension or boiler. At one end of the boiler is secured a spout, G, to which is attached a cleat to receive a wringer. The water pressed from the clothes is conducted by the spout back into the boiler, through the perforations in the side of the latter for the purpose. Handles are provided for lifting the apparatus, and a faucet may be placed at its lower part for drawing off the water.

The device is the invention of Mrs. Mary A. Barnes, of Olympia, Thurston county, Washington Territory. Patent is ordered to issue through the Scientific American Patent Agency.

New Marine Propeller.

A new propeller has been introduced by Dr. Collis Browne, which differs considerably from any other in use, somewhat resembling, when at rest, the letter X, as shown by the illustration, and claiming to offer many advantages over those commonly employed. These are absence of vibration, reduction of wear and tear to machinery, ready adaptability to any screw steamship, and facility of checking a ship's way, with the power of driving her full speed astern in a few seconds on reversal, as well as giving considerable increase of speed, and effecting a great saving of coal. This propeller has been tried at a measured mile by the steam yacht *Lapwing*.

During a trial under 58 lbs. pressure of steam, with a consumption of 81 lbs. of coal per hour, the propeller made 220 revolutions per minute with the tide slack, and the furnace burning hard steam coal, the measured mile being run in five minutes. During a trial under 64 lbs. pressure, with a consumption of 112 lbs. of coal per hour, and using the ordinary fan propeller making 280 revolutions per minute, with the tide slack and the furnace burning best Welsh coal, the vessel made the measured mile in six and a half minutes.

As far as this experiment goes, the new propeller shows a superiority over the fan form.—*Iron*.

SOME experiments made by the directorate of the government railroads of the Netherlands, in regard to the preservation of exposed sheet iron, have lately been published. Plates prepared in various ways were placed in exposed situations, and examined after three years. The result of the examination showed that as good a method as any of preparing the plates was to clean them by scraping and brushing, and then paint them with red lead.

The Dry Inkstand an Old Device.

"An inkstand containing carbonaceous and extractive matter in a dry state, which, with the addition of water only, will supply ink." Patented in England in 1820, by John Moody.

The outside of the inkstand may be made of brass, tin, or other metal, and of any shape that may be thought desirable. Within must be introduced a small vessel, which may be made of lead, earthenware, or glass, with a hole to admit a pen, in which the composition is placed; and the whole of the interior may be filled up with a cement, which may be made as follows: Melt two pounds of sulphur over a slow fire in a glazed pipkin; when melted, take it off the fire, and let it stand ten minutes or a quarter of an hour, until it is of the consistency of oil, then add to it lamp black, or any other color that may be thought proper, and stir it well together, and then pour it into the inkstand. The composition of carbonaceous and extractive matter is made and produced as follows: Take half a pound of fine honey, and the yolk of a new laid egg, mix them, and let them stand three days, frequently stirring them well together; then add half a pint of strong extract of galls, which extract is made by infusing one pound and a quarter of best blue galls, powdered, into three pints of soft or salt water; let them stand for six days, often stirring them; then filter the whole through a fine wire sieve, and evaporate the liquor to one half (that is to say, one pint and a half), over a gentle fire, in an iron pot.

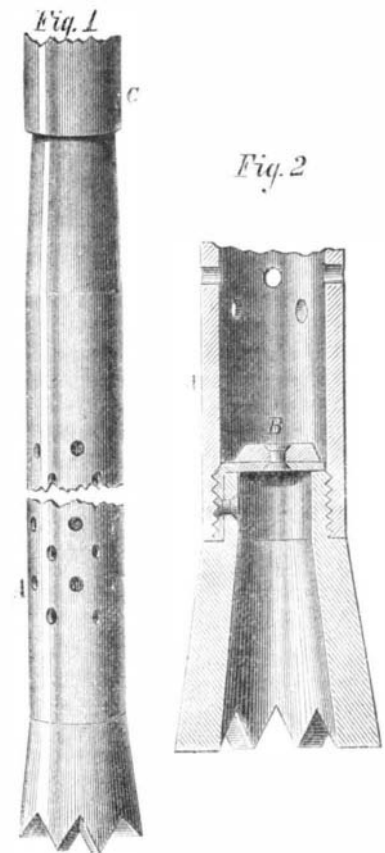
Then take another half a pint of extract of galls, as above prepared, in which dissolve three ounces of gum arabic, one ounce of white sugar candy, and one ounce of indigo, all in powder. Then take the remaining half pint of extract of galls, a half pint of strong decoction of logwood (which decoction must be made by boiling half a pound of logwood in powder, in a pint and a half of soft or salt water, until reduced to half a pint), into which put two ounces of blue galls in powder, two ounces of lamp black, two ounces of willow wood charcoal, ground very fine, and three ounces of sulphate of iron calcined to whiteness in powder, and stir them well together. Then knead the whole well together, in a marble mortar, into a stiff paste, which put into the stands, and let it harden in the air, over which paste must be placed a small quantity of cotton that has previously been soaked in vinegar that has been well saturated with salt.

Fixing Slates.

Slates, instead of being nailed to the roof, may be fastened by movable hooks, about 2 inches long, which are soldered to conically formed zinc plates, 4 to 6 inches long. The slates are thus kept securely between the hook and zinc plate, and can be removed simply, with the greatest facility, by turning the hook. Thus one or more of the slates can be taken out for repair, or new ones inserted, without interfering with the rest. The method is said to make a roof watertight.

SELF-PUMPING WELL-BORING DRILL.

With the improved drill represented in the annexed illustrations, the inventors claim that not only faster and better work can be accomplished, but that the apparatus can be more conveniently manipulated, and will penetrate further



into the ground before its removal for cleaning is required, than the borers in common use. It is also stated that a hole, with this device, may be sunk by hand to a distance of 200 feet, and with a lever to any desired depth; while the operator is enabled, during the progress of the boring, to know exactly the kind and depth of strata through which the tool is passing.

The drill is made tubular and somewhat flaring, so that it