

## Scientific Museum.

### South American Protection from the Stroke of the Sun.

A very intelligent and distinguished gentleman of New Grenada has called to inform us, says the New York Courier, for the benefit of the public, that a very simple and most efficacious expedient is used in the hottest part of his country to prevent the stroke of the sun.

It consists merely in filling the upper part of the crown of the hat (which should be of straw, chip, or some other light material) with cotton. With this protection alone, he assures us, men labor in the fields in the hottest weather without injury. This is the case at Ocana, where the thermometer is not unfrequently from 114 to 120 degrees Fahrenheit in the sun. He once marched a division of troops under the direct rays of the sun, in one of the hottest valleys of the "tierras calientes," and they suffered no injury from the exposure, in consequence of taking this precaution.

It is found that cotton, better than anything else that has been tried, absorbs the heat from above, and at the same time transmits the moisture rising from the head. Knowing the great value of this practice in his own country, he hopes a notice of it in our newspapers may induce persons to make experiments, and introduce the habit of resorting to this useful expedient in hot weather.

### Manufactured Superphosphate of Lime.

The "Genessee Farmer" has a sharp critique on the superphosphate of lime manufactured by Prof. Mapes, and considers it to have been too highly puffed by its maker, he having asserted that it could not be manufactured in England for less than \$100 per ton, while the editor of the "Farmer" asserts that as good a manure is sold in London for \$22½ per ton. He also reviews the criticism of Dr. Enderlin, on Prof. Johnson's analysis of Mape's superphosphate of lime, and shows that the learned critic must be a very Quixote in a chemical controversy. The editor of the "Genessee Farmer" appears to possess a mind of a strong logical character—common sense and clear—and he is well versed in agricultural chemistry.

### Black Ants.

A correspondent enquires of us if we know of any remedy for "black ants." These insects are very numerous and troublesome in the garden of our correspondent. We do not know of any remedy ever tried to destroy these pests, but newly slacked lime and salt scattered freely over the ground, ought to destroy them. This remedy could not be easily applied in a garden, still with care it may be, so as to do some good. Mix the salt and lime together both dry, and dust them on the ground, taking care not to touch the flowers, &c. Digging open their nests and pouring boiling water upon them, will also destroy them.

### Heat of Europe and America.

Again and again have we seen it asserted that when we have a warm summer in the United States, the countries of Europe on the same lines of latitude have a cold summer, and the same with respect to winters. We have never seen any facts adduced, nor can we give any reasons in proof of this being the case. This year we know it is not so, for the Spanish journals of Madrid state that on the 3rd of July, the heat was so excessive that the leaves of trees were shrivelled up, and much sickness caused by the extraordinary heat; which was no less than 110 deg. Fah.

### Leaves of Geraniums.

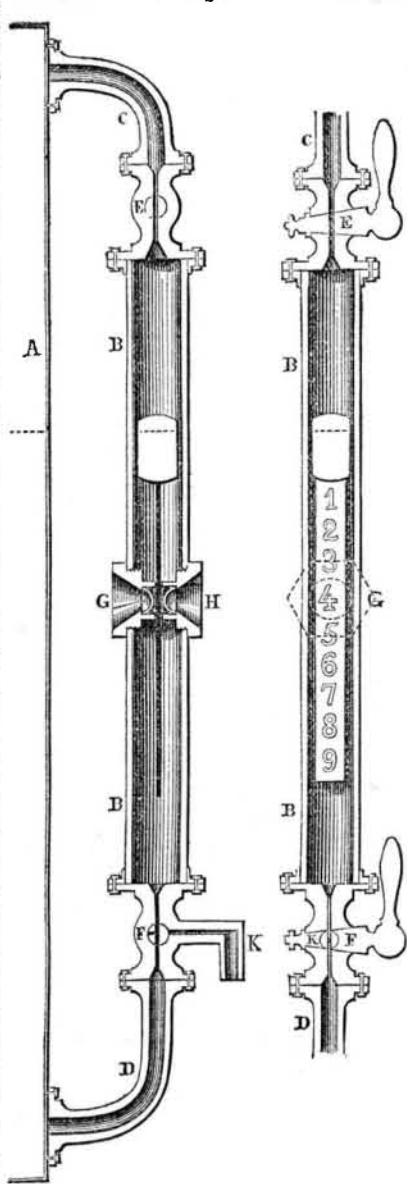
"Galigiani's Messenger" says:—It is not generally known that the leaves of the geraniums are an excellent application for cuts, where the skin is rubbed off, and other wounds of that kind. One or two leaves must be bruised and applied on linen to the part, and the wound will become cicatrized in a very short time.

### How to Keep Smoked Hams.

A writer in the "Farmer's Companion," published at Detroit, Mich., states that he has for many years preserved his hams through the summer, in the most perfect condition, by pack-

ing them in barrels, with layers of corn cobs between them, so that the hams would not come in contact with each other. They should be taken out and dry-rubbed once during the summer. The cask should be placed on a bench or trussel, in a cool, dry cellar.

Echols' Water Gauge for Steam Boilers.



The annexed engravings represent the Water and Steam Gauge of Joseph Echols, of Columbus, Georgia. Fig. 1 is longitudinal vertical section, and fig. 2 is a front view. The same letters refer to like parts.

A is the boiler; B is a tube whose interior diameter is about 2 1-2 inches; C is a smaller tube, about 3-4 of an inch in diameter, connecting the upper end of B with the upper part of the boiler, and D is a similar tube connecting B with the lower part of the boiler; C and H are hollow nuts screwing into B opposite each other, the hollow in each forming a round passage through the centre of the nut which is enlarged at the inner end to the depth of 1-4 of an inch, so as to form a seat for a hollow half globe of glass which closes the opening, presenting its convex surface inwardly, and its concave surface outwardly; E and F are stop cocks which usually stand open in the position represented in the figures. The office common to both of them is to close the tubes C and D, when for any purpose it may become necessary to unscrew and take out either of the nuts; but F performs another office which will be presently explained. Attached to a float, running up and down with the surface of the water in B B, is a scale of inches numbered 1 2 3 &c. The float is represented in the figures as being at usual water line, bringing the figure 4 on the scale, between the two glasses before described, so that the figure can be distinctly seen by looking through the passage in the nuts, and through those glasses. As the actual quantity of the water in the boiler diminishes, whether it be foaming or not, the column of water in B B descends, and with it the float and the scale attached to it, bringing successively to view the figures 3, 2, and 1, so that when the float descends, so far as to rest on the glasses, exhibiting figure 1 on the scale, and presenting to the eye the surface of the water, the water line will have reached the lowest point of its range.

On the other hand when the actual quantity of water in the boiler increases until the surface of the column in B B reaches the highest point of its range, the float and attached scale will rise with it, bringing before the eye and between the glasses, the figures on the scale in numerical order, until the last one, figure 9 appears; so that at any and every moment a figure on the scale can be seen, indicating with infallible certainty the actual quantity of water in the boiler.

F is a three-way cock, placed in its usual position, its third and short passage is closed, and on bringing the handle down one quarter of a circle, the communication with the tube below will be cut off, and one opened outwardly from B B through the small discharge pipe K. —Now by this operation no water can be discharged besides that quantity, which may have been thus cut off above F. By receiving this quantity in a graduated cup, (knowing the capacity and diameter of B B) the point at which the water stood in it immediately before the operation, will be known with unerring accuracy, even were the places occupied by nuts and glasses filled up with solid metal, and the float and its scale removed. Were the apparatus to be used in this way, it need not be so long, and the lower end of it should be at a point on a level with that, below which the water in the boiler, when not foaming, should never be permitted to go. But leaving this mode of using the apparatus out of the question, F is a simple and efficient means of blowing out any obstructions in any of the passages above or below it, and of ascertaining at once whether any derangement of any kind, however small, may have taken place. For instance, if upon discharging water as just described, the water did not rise in B B to supply the place of that discharged, and thus carry the float and scale to their former position, it would be instantly known that an obstruction existed at some point below. This obstruction could be blown out by turning the handle of F back one half of a circle, leaving it in a horizontal position, for this operation would cut off the communication between B B and the small pipe K, and open one between the latter and the tube D discharging water alone, and by turning it one quarter of a circle further, leaving it pointing directly downward, a communication from above and below would be opened with the pipe K, and outwardly discharging both steam and water. It may be mentioned however, that were either the passage below F, or the one above it, to be materially obstructed, the upward and downward motion and agitation of the float and scale would be so much diminished as to indicate the fact distinctly at once. By placing a reflector behind the nut and glass G, the image of the figure on the scale which may at any time be at that point, may be distinctly seen from any selected position near it.

The advantages claimed for this invention are, first, that it is perfect and certain as the glass tubes now in use would be, if they were not liable to break, nor their transparency to be diminished by continual exposure to heat, because the two small pieces of glass, proposed to be used in connection with the float and scale, answer all the purposes of these tubes, and are not to any extent worthy of consideration liable to break, because each presents an arch to the pressure of the steam, and being always covered with water, are not subjected to so great a heat, nor exposed to so great changes of temperature as are the tubes now in use; and if one should break, or its transparency become too much diminished, a duplicate can be substituted in two minutes of time, by cutting off the communication between B B and the tubes C and D, and unscrewing the nut holding the glass to be removed, and setting in the duplicate; the cost of the latter not amounting to ten cents; to all which may be added the convenience and advantage before mentioned, of the three-way cocks F.

Mr. Echols is at present residing in this city, but his permanent residence is at Columbus.

### Novel Way of Holding a Horse.

A gentleman travelling through Germany, thus describes a novel method of fastening a horse which he saw put in practice by a German blacksmith:—

"As soon as breakfast was over, I generally enjoyed the luxury of riding about town, and in passing the shop of a blacksmith, the manner in

which he tackled and shod a vicious horse amused me. On the outside of the wall of the house, two rings were firmly fixed, to one of which the patient's head was fastened close to the ground; the hind foot to be shod stretched out to the utmost extent of the leg, was then secured by the other ring about five feet high, by a cord which passed through a cloven hitch, fixed to the root of the poor creature's tail.—The hind foot was consequently very much higher than the head; indeed, it was quite exalted, and pulled so heavily at the tail, that the animal seemed to be quite anxious to keep his other foot on terra firma. With one foot in the heavens, it did not suit him to kick; with his nose pointing to the infernal regions, he could not conveniently rear; and as a heavy band was constantly pulling at his tail, the horse at last gave up the point and quietly submitted to be shod."

### LITERARY NOTICES.

THE MICROSCOPIST.—Lindsay & Blackiston, of Philadelphia, have just published another beautiful edition of this able, excellent, and useful work, by Dr. Wythes. It illustrates and describes the different kinds of microscopes, and is a complete manual for its use. It tells how to observe and examine objects in nature, how to observe them, and all useful information for the lovers of science.

OVERMAN'S PRACTICAL MINERALOGY ASSAYING &c.—Another edition of this able work of the deceased F. Overman is just issued by the above Company, L. & B. of Philadelphia. It treats of Assaying and Mining, and gives a description of the useful minerals, with instructions for assaying and mining them. It is a practical work and is very useful.

LITTELL'S LIVING AGE.—No. 486, of second series, just issued, contains excellent articles on the following subjects: History of the Prussian Court, Sunshine of Statistics, Rebellion in China, Beauty, the Paradise of Spain, A True Story, Bertha's Love, The Sisters of Provence, The Hop Garden, Turkish and European Crisis, New Russo-Danish Question, Poetry, and the usual judicious selection of short articles, are its contents.

THE INDUSTRY OF ALL NATIONS.—The V. & VI. numbers of this work, published by G. P. Putnam & Co. as a record of the New York Exhibition, Illustrated, has just been published, and contains some very excellent remarks, and a good number of neatly executed engravings of articles in the Exhibition, mostly all works of art. It presents an outside view of the beautiful fire engine of Mr. Jeffers, of Pawtucket R. I.

MINIFIE'S DRAWING BOOK.—Number 11 of this very excellent work is now ready, and is for sale at De Witt & Davenport, No. 160 Nassau st., N. Y.



### Manufacturers and Inventors.

The present Volume of the SCIENTIFIC AMERICAN commences under the most gratifying assurances, and appearances indicate a very marked increase to the subscription list. This we regard as a flattering testimonial of the usefulness and popularity of the publication so generously supported. We are greatly indebted to our readers for much valuable matter, which has found a permanent record on its pages. The aid thus contributed has been most important to our success, and we are grateful for it.

From our foreign and home exchanges—from the workshops, fields, and laboratories of our own country, we have supplied a volume of more than four hundred pages of useful information, touching every branch of art, science, and invention, besides hundreds of engravings executed by artists exclusively in our employ.

The present Volume will be greatly improved in the style and quantity of the Engravings, and in the character of the matter, original and selected. Having every facility for obtaining information from all parts of Europe, we shall lay before our readers, in advance of our contemporaries, a full account of the most prominent novelties brought forward.

The opening of the Crystal Palace in this city, forms an interesting subject for attraction. We shall study it faithfully for the benefit of our readers, and illustrate such inventions as may be deemed interesting and worthy.

The Scientific American is the Repository of Patent Inventions: a volume, each complete in itself, forms an Encyclopedia of the useful and entertaining. The Patent Claims alone are worth ten times the subscription price to every inventor.

### PRIZES!! PRIZES!!

The following Splendid Prizes will be given for the largest list of mail subscribers sent in by the first of January next:

\$100 for the largest list.	\$30 for the 7th largest list.
\$75 for the 2nd largest list.	\$25 for the 8th ditto
\$50 for the 3rd ditto	\$20 for the 9th ditto
\$45 for the 4th ditto	\$15 for the 10th ditto
\$40 for the 5th ditto	\$10 for the 11th ditto
\$35 for the 6th ditto	\$5 for the 12th ditto

The cash will be paid to the order of the successful competitors immediately after January 1st, 1854.

These prizes are worthy of an honorable and energetic competition, and we hope our readers will not let an opportunity so favorable pass without attention.

### TERMS! TERMS!! TERMS!!!

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