

Phosphate of Iron in Blood.

Mr. James Bruce says that the red particles in blood are caused by phosphate of iron, for by adding this preparation of iron to blood, or to the white of an egg beaten up with distilled water, a beautiful red color is produced. Mr. Bruce further states that its presence in the blood serves the purpose of heating and thinning it, promoting its intestine motion, as well as helping it through its passages (from its superior gravity) by increasing its weight and force against them, therefore, any obstruction in the glands or capillary vessels must sooner be removed by such metallic particles than by those which are lighter. Iron, he adds, is the only metal friendly to the human constitution; but its use, where iron medicines are called for, must not be persevered in for any length of time, as any large excess in the blood would only serve by its pressure against the sides of the vessels to cause internal hemorrhage. The last fact was evidenced in the treatment of the cattle plague, the excrements of the cows being mixed with blood, where large doses of iron were administered, and which is not one of the recognized symptoms of the epidemic.

To Clear a Boat of water without Bailing.

A correspondent of the *Scientific American* writes:—

"If you have a boat that leaks badly, and it is in a strong current, or if you are towing it up stream, all you have to do to keep it dry is this: bore a hole in the bottom and insert a piece of tin or iron, half round, through the hole, letting it extend a few inches below the bottom of the boat, and all the water will run out without any labour. I think a ship at sea could be kept afloat if you could keep her going four miles per hour."

Poisonous Matter in Tobacco.

One good Havana cigar is found by Dr. Richardson to yield, when the smoke is condensed, a sufficient amount of poisonous matter to induce active convulsions in a rabbit, and six pipes of common shag tobacco will yield sufficient poison to destroy a rabbit in three minutes.

Water Barometer.

Mr. Alfred Bird, analytical chemist, of Birmingham, has constructed a water barometer which shows the fluctuations of atmospheric pressure thirteen times more accurately than they are shown by a mercurial barometer. The water in it seems to be in perpetual motion, resembling respiration; the times of the oscillations being about 4' 20", and their lengths from 1-30th to 1-20th of an inch. The water is deprived of air, and the water in the reservoir is covered with olive oil. An interesting diagram of the fluctuations of atmospheric pressure during a thunder-storm is given, also an engraving of the instrument, and a long description of its construction, are given in the *Chemical News* of Dec. 8:

How to Cure Scalds from Steam.

All readers of the *Scientific American*, but more particularly engineers, should read and remember the simple remedy here given for a most painful

affliction. Engineers are often exposed to burning by steam, and it fortunately happens that the materials here recommended as a sovereign cure are always at hand. The *Medical and Surgical Reporter* says:—

"Mary S., æt. 30, was scalded a few days ago with the steam from hot ashes. The scald is on the middle of the chest, and about one foot square. The surface is raw, and covered with lymph. It is only a superficial scald, embracing the cuticle, and, at some points, the true skin. It is covered with granulations. The pain she suffered for a few days was intense; she could not sleep at all, but when the ordinary white lead, mixed to a thick cream, with linseed oil was applied, in her own words, 'it took her up to heaven.' She is doing well under its use. No danger exists from lead-poisoning, and if it did, sulphuric acid lemonade would be the only prophylactic needed."

Sulphuric acid lemonade, we take to mean water slightly acidulated with vitrol.—*Scientific American*.

Decimal Weights and Measures in Germany.

A special commission, which has been recently appointed by the Federal States of Germany, for the purpose of equalising the different standards of weights and measures prevailing in the country, has decided in favour of the French metre and its cubic multiples; and there is little doubt that the new standard will be approved by the various States.

Production of Aniline.

It requires as many as 2,000 tons of coal to produce a small circular block of aniline, 20in. high by 9in. wide. This quantity is sufficient to dye three hundred miles of silk fabric.—*London, Eng.*

Vinegar=Eels.

Vinegar-eels live in water that has sugar in it, and in saccharine fruits and roots. In water with 5 per cent. of sugar they increase in great numbers; and the increase becomes more rapid until the water holds 40 per cent of sugar. When it holds 50 per cent. they perish. They are found only in vinegar made from fruit. They live in fruit that has fallen, and in roots; and they have powers of locomotion through earth, and live in it for some time.

Storing Corn.

In Russia corn is stored in pits dug in the soil, the sides of which are hardened by long exposure to fire. Before the grain is introduced straw is ignited in the pit to purify and dry the air. The grain is thrown in and packed close. It has been thus preserved forty years, it is said.

Blood-stains.

A few years ago a man under trial for murder in Western New York asserted that blood-stains on an axe found in his possession were from a dog which he had killed. The case was referred to Prof. Hadley, of Buffalo, who was purposely kept in ignorance of all the circumstances. Submitting the blood stains to microscopic inspection, he declared that they were from a dog, thus confirming the poor man's testimony.