SCIENTIFIC MUSEUM.

Unrolling the Mummy of a Bishop.

The unrolling of mummies has become a kind of mania. Who can forget the mummy maid unrolled by Gliddon last year in Boston, which turned out to be a man? Mr. Gliddon, we see, recently unrolled another one at New Orleans, which was a female, and maintained its sex. The most important unrollment of any mummy which has taken place during all the years of our remembrance, was one which recently took place in London, it being nothing less than the mummy of an old Bishop. The mummy was discovered not long since in the east wall of St. Stephen's Crypt, Westminster, and although there was no positive proof of its identity, it is presumed that it was the body of Lydwolfe, Bishop of St. David's, who died in the 15th century. The venerable body was not safe from modern curiosity. On the first of last month, Dr. Pettigrew was appointed to unroll him before deputations from the British Museum, antiquarian societies and scientific men. After some little difficulty, a layer of five thick canvas cloths was removed from off the face. A second series, bound round by string, then presented themselves. In due course these were loosened, and to the great satisfaction of all present, on being raised, the face was disclosed in a most remarkable state of preservation. The cartilage of the nose was not at all decayed, and with the lips and other portions of the face remained perfectly flexible to the touch. Even the expression of the countenance was in a degree retained, and it was remarked that identity of the individual would not have been impossible had any compeer of his venerable age been present. The abdomen was found to be folded in 10 layers of canvas cloth, each of which appeared to have been soaked in wax and nitre, or salts of some such description. On the wrappers being removed, the stomach was found to have retreated from the cloth, and to have become a mass of adipose matter, in which state the legs and arms were also found. No writing of any description was discovered in the folds, nor was any mark leading to an identity of the individual found. The body measured 5 feet 11 inches in length, and, judging from the front teeth remaining, three or four of which in the lower jaw were much worn, must have been that of a very aged man. The mouth was filled with tow, which had evidently been steeped in wax, and a small quantity of hair remained on the chin and upper lip. The body was enclosed in 10 layers of very thick canvas, and bound round by string, the latter being in a very remarkable state of preservation. The crozier was entirely of oak, with an elaborately carved crook—the whole measuring six feet two inches in length. The examination having been completed, the remains were placed in a strong elm coffin and screwed down. It is understood the body will hereafter be replaced as nearly as possible in the spot where it was discovered.

Cotton in Russia.

A report from the Russian Minister of Agriculture and Commerce, states that cotton can be cultivated to a considerable extent in Trans-Caucasia. Cotton has been grown in the province of Armenia for a long period; though the Armenian cotton has generally been of a very short staple and poor quality. The production at present is about 130,000 pouds, (4,685,000 pounds), and this is mostly used in the country for spinning, and in the manufacture of wadding. A cotton not inferior to the Egyptian is cultivated in four villages near the Klow, but the produce is only about 180,000 pounds. In Trans-Caucasia there are more than 1,100,000 acres of land suited to the culture of cotton, and a sixth part of this quantity would be sufficient to supply the whole cotton demand of Russia.

A Meteoric Engine.

At Newark, N. J., on Thursday morning last week, a train was passing around a curve of the New Jersey Railroad, when a "solution of continuity" occurred between the locomotive and the passenger cars behind it. The locomotive darted off the track, making tracks for a small building, in which lottery policies were formerly vended. The proprietor, with his subs, beheld the iron officer and his search warrant, and fled, and they had hardly cleared the threshold in the rear, when their customer enlarged the opening in front, and walked in. The investment certainly turned out badly; the locomotive drew a blank instead of its ordinary train of cars; while the cars themselves proceeded calmly along through the city to their ordinary stopping place, to the intense amazement of those who were unaware of the engine's eccentricity.

It was lucky that the link parted between the engine and the cars, or the whole train would have been made partners of the eccentric escapade.

On Boilers.---No. 17.

FIG. 31. FIG. 30.

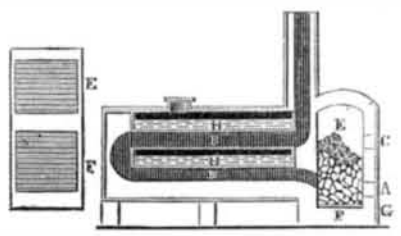
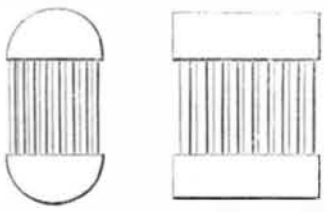


Figure 30 is a vertical section of the Furnace of C. Howell, of Philadelphia, for which a patent was obtained in 1828, for burning anthracite coal. Fig. 31 is a plan view. A A are tuyeres for introducing the blast; B B are the flues; C C are charging doors for the coal; D D are cleaning-out doors, which are occasionally used as draught doors. E is a line of upper surface of coal; F F are grate-bars; G G are openings to promote the draught before the blast is applied. This was the first patented plan for burning anthracite coal under steam boilers, in our country, with the blower attached. This improvement, to employ anthracite coal, has done wonders for the steam navigation on some of our rivers, and its value for all stationary engines has been of immense benefit to all our Eastern and Middle States. It is not possible to estimate the amount of benefit conferred, by this improvement upon the city of New York alone. Without it we could not employ steam engines so extensively, as the cost of wood or bituminous coal would be too great. Fifteen years ago all the steamboats running along our coasts, and on the Hudson River, used wood for fuel; the expenses were enormous, and could not now be maintained. It required immense docks to hold the wood, and the for-

FIG 32 FIG. 33.



ward-deck of a boat was occupied with nothing else. Sixty cords of wood, at $4 per cord, were consumed in a single passage to Albany, in a large steamboat, costing, altogether, $240. The cost for coal, to do the same work, does not amount to more than $50 now. Anthracite coal has done wonders to make cheap passages on our steamboats, and this has been a benefit to the whole people. We often hear of the steamboat itself, the telegraph, and other prominent inventions, spoken of as great boons conferred upon mankind; he who considers the successful application of anthracite coal (as a fuel substitute for wood, on our steamboats) a small invention, is no just judge. We hope the time is not very far off when anthracite will be employed on all our locomotives, as a substitute for wood fuel.

Figs. 32 and 33 are end and side elevations of the boiler of Dr. E. Nott, designed for the steamer "Novelty," a Hudson river boat, in 1830. The boiler consists of an upper and lower chamber, connected by small vertical tubes; the heat passes between these tubes. There are no side chambers or pipes to carry the water downwards to the bottom chamber to cause a continual circulation. It is not a good boiler.

Expedition to Japan.

An expedition is fitting out at Washington for Japan. Its object, it is stated, is to force the people into "free trade" with our merchants.

Forty Miles an Hour.

A correspondent of the Albany Journal, in an article under the title of "Railroad Accidents and Legislation Thereon," speaking of speed at forty miles an hour says:—

"Men who are used to the railroad, and to the working of the rolling stock, know what such a rate of speed is and how wonderful is the operation. Let us examine it. An engine, tender and train of four passenger cars and one baggage car, when properly loaded, will not be much less than eighty tons weight. This body at the rate of forty miles an hour, moves about sixty feet in a second. That is, between two beats of a clock, it flies across a common street. The driving wheels, if six feet in diameter, revolve three times in a second. The common wheels of the cars revolve about eight times in a second. The revolutions of the driving wheels are produced by the motion of the piston in the cylinder. To each revolution of this wheel, there are two motions of the piston. Thus there are six motions of the piston to the second, and at each of these motions a valve is opened or closed, for the taking or exhausting steam from the cylinder. This must be a complete and perfect operation, each time, to produce the speed. But there are two cylinders, working at opposite sides of the engine, and at different points on the crank of the wheel, or axle, as may be, and they do not move at the same instant, or, rather, they alternate, and thus, each performing the same office, they divide a second into twelve equal parts or periods, in each of which the perfect and complete operation of taking or exhausting steam is performed, and at the end of each motion the piston actually stops and turns the other way. Now, the eye could not count or comprehend these motions. The ear could not distinguish the exhausts though each is as perfect and distinct as when the engine is drawing a heavy load four or five miles an hour, when it seems to labor and to cough as if struggling with its load. This is a speed of forty miles an hour analyzed. Now must there not be very greatly increased liability to accident at such a rate of speed? Who can see the strains upon parts of machinery that may result in a fracture when moving at this rate?"

[There are some men so credulous as to believe that a steam carriage in England has run on a McAdamized road at the rate of 40 miles per hour, and have been foolish enough to publish this. They say that steam carriages were successful in England; we say no. They say they can be successful here on plank roads; we say, prove it. If they do not do this, we will class the statements of some of them with the "static-pressure."

Water and Salts—Heating by Water.

Water will only dissolve a certain quantity of most of the crystalline substances termed salts; for instance, if a large quantity of common salt be added to a pint of water, the mixture stirred, and then allowed to stand, it will be found that only part of the salt has been dissolved; and if the same experiment be performed with another pint of water, but with a different quantity of salt, so long as in each case a part of the salt remains undissolved, it will be found, on decanting off the clear solutions and boiling each separately to dryness, that exactly the same quantity of salt has been dissolved by each pint of water, provided the temperature in each experiment was the same. In this instance we should find that 100 pounds of boiling water will always dissolve 40 lbs. of common salt, and never more, whatever be the excess of salt employed. The water is then said to be a saturated solution. The quantity of any particular salt that water is capable of taking up or dissolving, varies generally with the temperature of the water. In most cases, hot water will dissolve much more of a salt than cold; but there are exceptions to this, a few salts being more soluble in cold than in hot water. Water does not dissolve the same quantity of the different salts—far from it; some are nearly insoluble, while others are dissolved in very large quantities by a small quantity of water. As a saturated hot solution of salt cools, it deposits a portion of the salts in a crystallized form.

In the act of separating from the water in which they were dissolved, most crystals carry with them a portion of water, which is essential to the regularity of their form, and cannot be separated from them without reducing the crystals to a shapeless mass. This water is termed their water of crystallization. Water heated from 32° to 212° Fah., expands 1-32 parts of its bulk, that is, if 22 pints of ice-cold water be heated to the boiling point, without allowing any of the steam to escape, it will be found that the water has increased so much in bulk, that it will then fill 23 pints; therefore, also, it follows, that a pint of boiling water is not so heavy as a pint of water at 32° by nearly one ounce. On this fact is founded all the different methods of heating buildings by the circulation of hot water through tubes. The tubes filled with hot water are heated by being fixed so that some part, near the lowest part of the tube, shall pass vertically (or nearly so) through a furnace; and as the water becomes heated it floats (being rendered lighter) to the upper part of the circulating tube, at the same time the cold or cooler water from the lower part of the tube gradually enters the furnace from beneath; this, becoming heated, passes onwards, and thus a constant circulation is maintained till the whole of the water in the tube becomes heated to the required degree.

LITERARY NOTICES.

ANNUAL OF SCIENTIFIC DISCOVERY FOR 1852.—We have received a copy of this very useful work, published by Gould & Lincoln, Boston, and edited by D A. Wells, A. M. This work is a very valuable one, it is a collection of all the leading facts, in Science and Art, which have been brought to light during the past year. It has a good steel engraving of Prof. Henry, of the Smithsonian Institute—the first inventor of the Electro Magnet, and is got up in good style. The Notes by the Editor, Mr. Wells, on the progress of science during the past year, are very excellent. The Scientific American is very creditably noticed, as the Repertory of American Inventions, and the mirror of American Mechanic Arts.

CHILDREN—Their Hydropathic Management in Health and Disease—a descriptive and practical work, designed as a guide for families and physicians, illustrated with numerous cases, by Dr. Joel Shew, —Fowlers & Wells, publishers, New York and Boston, pp. 430. This work is written in an able fearless and comprehensive style, and contains much sound practical advice, worthy the attention of mothers and nurses; it is, in fact, a good family book. Dr. Shew knows the value of the medical profession, but such publications are valuable to families where the physician is not at hand. The remedial virtues of water have been known for ages, and all good physicians recommend the bath, in sickness and health, as an auxiliary to other remedies and as a preservative agent.

HUNT'S MERCHANTS' MAGAZINE.—The well-earned reputation of this magazine requires no word from any one to commend it. There is one article in the March number—"Fisheries of the United States,"—which is worth the whole year's subscription.

The "Phrenological Journal" and the "Water Cure Journal," for March, are interesting numbers, filled with sound practical matter worthy of attention. They are both published monthly for $1 per annum, each, by Fowlers & Wells, 131 Nassan street.