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For the Week Ending February 6, 1892.

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REMOVAL OF SNOW BY MELTING.

The subject of disposing of snow which has fallen in the streets by some more rapid and less cumbrous method than that of carting it away has attracted considerable attention from time to time. Various systems of melting it have been proposed, and calculations as to the thermal energy required indicate the practicability of so doing. As fast as melted the water could be run away through the sewers. The calculations were made and the possible economies of the process were examined into, and the results were published some years ago in these columns. It appeared that snow could probably be more economically disposed of thus than by carting it off to the distant river edge and there dumping it into the water.

Mr. Charles E. Emery, the distinguished civil engineer, and one of the highest authorities on the use and distribution of steam, examined the question at about the period alluded to, and reached the same conclusion. Still more recently the subject has been taken up in England and the proposition has been made to use gas for melting snow. While gas is an expensive fuel, it develops a definite economy in use, because it can be more advantageously applied than any other fuel, where the center of heating is of limited area or volume. Putting the price of gas at a fair figure for England, 2s. 6d. per thousand cubic feet, an English contemporary, *The Building News*, concludes that snow could be very advantageously disposed of by melting with burning gas.

Mr. Emery did not examine the subject from a theoretical standpoint only. He also tried a steam melting process, which gave excellent results and was distinguished by great simplicity of appliances. A tarpaulin 25 feet square was used to cover an area. It was drawn about upon a sled and spread where required. When spread, the steam was admitted to its interior as it lay upon the snow, and the latter was rapidly melted. In this way it was found that large areas could be denuded of snow with economy.

The great trouble was the supply of steam. In streets possessing steam mains this trouble would not exist, but in other places a portable boiler would have to accompany the apparatus. The method seems far simpler and more practical than gas melting with special burners and melting plates, and for this country at least would, we believe, prove far more economical. The steam process involves the direct contact of steam and snow. In the gas process as described the conduction of heat through a metal heating plate is also involved, which would be a cause of inefficiency and would retard to a degree the melting.

THE EVENING SKY.

The early evening sky just now presents a spectacle of uncommon beauty. Sweeping with the eye upward from the western horizon, the lovely crescent of the new moon meets the view; next, the brilliant orb of Venus, gleaming with golden splendor; higher up is the refulgent globe of Jupiter, the largest of the planets, the fastest in circumferential motion, attended by four moons, visible in the telescope. The exterior of the earth turns at the rate of a thousand miles an hour; that of Jupiter, twenty-seven thousand miles an hour. Continuing upward are the fabled Pleiades, the seven stars, visible in all lands—a cluster of flaming suns, forever flying onward in space.

The rosy red Aldebaran next is seen, burning (if you look in the spectroscope) with hydrogen, sodium, magnesium, calcium, iron, tellurium, antimony, and mercury. Looking eastward, that wondrous constellation Orion is beheld, with his three-starred belt, three equidistant suns, one degree apart, and those more distant stars, four in number, of which Regel below the belt and Betelguese above are brilliantly conspicuous. Below Orion, toward the east, shines the majestic Sirius, brightest of the stars. Still eastward is Procyon, above it Castor and Pollux, Capella and Algol, all prominent in the heavenly dome.

Astronomy is indeed the sublimest of the sciences; no study is more interesting, none more elevating to the soul; yet how few pursue it! Probably less than one in ten thousand persons can recognize or name the principal constellations. The glories of the heavens pass by unnoticed and unknown.

THE WAR SHIP AND HER CREW.

The relative possible effectiveness of modern war ships may be measured by comparing the strength of armor, of battery, power of engines and the like, the one with the other. But other factors must be determined in order to come to anything like a reliable conclusion as to the result of an engagement between one type and another, to wit, the experience and training of officers and crew, and their familiarity with the apparatus they handle; else the opposing commanders might come together before engaging and, sitting down at a table, with pencil and paper before them, calculate the chances and award the victory without firing a gun. Given two ships of equal armor, armament and power, who will doubt that, barring accidents, the one whose crew is quickest and surest at the gun practice, whose officers are quickest at maneuver, will win? So, too, of ships unequal in size and armament. The most powerful will not necessarily have the advantage.

It is an axiom among boxers that a good big man is better than a good little man, but that a clever little man is better than a sluggish big man. On the same theory a big ship, however heavily armored and armed, with unskillful officers and men not used to or slovenly at the guns, would be no match for a much smaller craft with less powerful guns but officers well schooled, energetic and enterprising, and a crew well drilled and handy. Those who have read the naval history of the United States will recall the victories gained by the Yankee ships in the war of 1812, through superior seamanship and gunnery. Though often opposed to ships of superior tonnage and weight of battery, manned by men whose courage had been tried in many seas, the advantage in training proved to be a factor that turned the scale in favor of the Yankee crews. It is upon the superior training, the energy and the enterprise of the officers and crews of our fleet that we must, in large part, rely in the possible contingency of war with Chile. There is one Chilean ship, the Capitan Prat, now being completed in a French yard, that, in point of size, armament and armor, is superior to any ship which we, at present, have afloat. But there is reason to believe that any one of several of our ships could profitably engage her, for, with such a crew as she is likely to get, nothing like the maximum effectiveness of her apparatus could be developed.

Texas Lignite.

According to Professor E. T. Dumble, a very careful comparison of Texas lignites with those of Germany and Austria shows that they are in all respects fully equal to some of the better grades of those in use, and equally applicable for all fuel purposes under similar conditions. This conclusion is supported by the indorsement of some of the most eminent authorities on the subject in Germany and Austria, to whom specimens were submitted for examination.

Lignite of this character is found at Rockdale, on the International & Great Northern R.R., and at Elgin, on the Houston & Texas Central R.R., both of which localities are sufficiently near to Austin to give an abundant supply of the fuel at a very low price. The bed at Rockdale is open, and is being worked on a small scale; that below Elgin was opened by Captain Mather, of the Austin water works, who reports the seam to be about eight feet in thickness and that it was similar in all respects to that at Rockdale. Taking into consideration the character of the lignite which occurs at Rockdale, which has been fully tested by the geological survey, and that at Elgin, and the extent of these deposits, there is no reason why the fuel cannot be mined and delivered in Austin at a price which will make it the cheapest of the cheap fuels; and its quality is such that it can be used with greatest success and economy in the manufacture of lime, cement, brick, stoneware, glassware, pottery, etc., and under steam boilers of every kind, thus being entirely suited to all the manufacturing needs of Austin.

In developing the iron resources of central Texas it will be possible to use some of these lignites as part of the fuel of the smelting furnace. The character of coke which can be made from them is now the subject of experiment, but it is too early to make any definite statements regarding it. Outside the first smelting of the iron, however, the quality of the lignites adjacent to Austin is fully sufficient for all the operations for converting pig iron into wrought iron and steel, as well as for all rolling mill purposes.

All that is needed to secure the desired results is a proper construction of the fire boxes, grate, etc., general plans for which can be secured through this department, or directly from the mechanical engineers of Germany and Austria.

An Electric Mail Car.

One novelty in the way of electric traction on the St. Louis and Suburban Railway, now in successful operation in St. Louis, Mo., is the application of electric motors to a United States mail car, which makes regular trips over the entire line, distributing and collecting the mail at the different railway stations, as is done on steam railways. This car is of the same length as an ordinary steam railway mail car, and is equipped with double trucks with 36 inch wheels, a Thomson-Houston motor of 15 horse power capacity being connected to each truck. A very high speed is attained, and the delivery and collection of mail is made without stopping the car, as in steam service.

AT Fagersta, in Sweden, briquettes are now being manufactured out of wood charcoal by the addition of coal tar. A paste is made out of the charcoal and the tar, which is transferred to a press, whence it issues in slabs about 16 in. thick, which are exposed to the air on the ground for several weeks, during which period the water in the tar evaporates. This combustible has been successfully employed for steam boilers, its calorific power being said to approach that of the best English coals.