

artesian wells, most of which are flowing. France is celebrated for these wells. One in the department Pas de Calais was sunk in 1162, and is still flowing abundantly. The famous well at Grenelle, near Paris, 1,792 feet deep, was finished in 1842, and yields 21,000 gallons an hour. At Passy there is a well 1,923 feet deep, giving the enormous quantity of 62,000 gallons an hour. London has a large number of wells, and they may be found in almost all civilized countries. The water from deep wells is warm, the temperature increasing a degree for every 75 or 80 feet of depth. The water is usually impregnated with minerals, and few wells give water that is fit to drink.

The Drying-Room.

In almost all manufacturing establishments a drying-room is a necessary attachment. At some period in the work it is commonly necessary to submit the material to a thorough wetting, and it is also desirable that after this ordeal the water should be removed from it as soon as practicable. But while there are tens of thousands of drying-rooms in this country, it is a curious circumstance that hardly any of them have been constructed on scientific principles. A vast amount of thought and attention has been bestowed in perfecting the various processes of manufacture, but the process of drying is in almost as crude a condition as it was one hundred years ago. The main object seems to be to get the drying-room as hot as it is safe to have it, and then place in it the material to be dried. One result of this plan is that fires in drying rooms are of frequent occurrence, and for this reason the Boston Manufacturers' Mutual Fire Insurance Company has entered on a scientific investigation of the subject. The first report which has been made to its members is restricted to pointing out a few defects in the various systems now in use. For example, the opinion seems to be commonly received that if the air in a room is made sufficiently hot, and wet material is then put in, it will soon become dry, although no change of air may take place, consequently there is no attempt made to ventilate the room. Now, in reality, a cubic foot of air will hold only a given amount of moisture, this varying with the temperature. At 32 degrees Fahrenheit a cubic foot of air contains two grains of vapor. But this is its maximum limit, and when once that amount of moisture has been absorbed the air is good for nothing for drying purposes, and the sooner it is let out the better. Where no special provision is made for its exit it has to work its way, as best it can, through the cracks in the room. In many cases this same air is drawn off, reheated, and forced into the room again, on the mistaken theory that it is better than fresh but cooler air from the outside would be; but the effect of this is to send damp air to do what should be the work of dry air. Theoretically the true principle would seem to be to refrigerate air, so as to deprive it of its moisture, then heat it and bring it in contact with the material that is to be dried, after which it may be allowed to escape, carrying its burden of moisture with it. In the investigation referred to, the practical method of doing this has not yet been determined, but it is hoped that a satisfactory and rational plan will be developed.

A FAMOUS SUNKEN LAKE.—Several of our citizens, says a Jacksonville (Or.) paper, returned, last week from the Great Sunken Lake, situated in the Cascade Mountains, about seventy-five miles northeast from Jacksonville. This lake rivals the famous valley of Sinbad the Sailor. It is thought to average two thousand feet down to water all around. The depth of the water is unknown, and its surface is smooth and unrippled, as it is so far below the surface of the mountains that air currents do not affect it. Its length is estimated at twelve or fifteen miles, and its width ten or twelve. There is a mountain in the centre, having trees upon it. It lies still, silent, and mysterious, in the bosom of the everlasting hills, like a huge well scooped out by the hands of the giant genii of the mountains in the unknown ages gone by, and around it the primeval forests watch and ward are keeping. The visiting party fired a rifle into the water several times, at an angle of forty-five degrees, and were able to note several seconds of time from the report of the gun until the ball struck the water. Such seems incredible, but is vouched for by our most reliable citizens. The lake is certainly a most remarkable curiosity.

How Far to the Sun.

All the evidence at present attainable makes the distance of the sun from the earth 92,884,000 miles, says Prof. Young, with a probable error of one quarter of one per cent., or 225,000 miles.

But it is one thing to state these figures, and quite another to understand what they mean. Prof. Young is at the pains to translate them into the terms of common experience, so that they may be partially realized. He says: "If one were to try to walk such a distance, supposing that he could walk four miles an hour, and keep it up for 10 hours every day, it would take 68½ years to make a single million of miles, and more than 6,300 years to traverse the whole. If some celestial railway could be imagined, the journey to the sun, even if our trains ran 60 miles an hour, day and night, and without a stop, would require over 175 years. Scussion, even, would not travel so far in a human lifetime. To borrow the curious illustration of Prof. Mendenhall, if we could imagine an infant with an arm long enough to enable him to touch the sun and burn himself, he would die of old age before the pain could reach him; since, according to the experiments of Helmholtz and others, a nervous shock is communicated only at the rate of about 100 feet per second, or 1,637 miles a day, and would need more than 150 years to make the journey. Sound would do it in about fourteen years if it could be transmitted through celestial space, and a cannon ball in about nine, if it were to move uniformly with the same speed as when it left the muzzle of the gun. If the earth could be suddenly stopped in her orbit and allowed to fall unobstructed toward the sun, under the accelerating influence of his attraction, she would reach the centre in about four months. I have said if she could be stopped, but such is the compass of her orbit that to make its circuit in a year she has to move nearly nineteen miles a second, or more than fifty times faster than the swiftest rifle ball, and in moving twenty miles her path deviates from perfect straightness by less than one eighth of an inch."

GLASS TYPE.—The experiments which have been made in France, with a view to the substitution of printing-type made of toughened glass in place of metal, have proved quite encouraging. The advantages in point of cleanliness would, it is alleged, be not insignificant. The toughened glass is naturally much harder than the usual metallic composition, and can hardly be crushed out of shape by those small accidents which shorten the life and mar the beauty of the type now employed. The glass, too, is capable of being cast into more delicate forms, so that the difference between the thin and thick strokes can be more clearly defined.

STUMPS.—The *Scientific American* advances the following important information to those who desire to get rid of stumps on their farms: "In the autumn or early winter bore a hole one or two inches in diameter, according to the girth of the stump, and about eighteen inches deep. Put into it one or two ounces of saltpetre, fill the hole with water, and plug it close. In the ensuing spring take out the plug, and pour in about a gill of kerosene oil and ignite it. The stump will smoulder away without blazing to the very extremity of the roots, leaving nothing but ashes."

Algiers possesses a river of veritable ink. Two streams, one starting from a region where the soil is ferruginous, the other from a peat-swamp, meet and form the river, whose inky constituency is due to the mixing of the iron and the gallic acid which the two tributary streams respectively contain.

W. L. Bright, an Englishman, claims that he has found the means for preventing distemper in dogs. Following up the researches of Pasteur, as to the cause of epidemics among animals, Mr. Bright has discovered that, if dogs are vaccinated in the ears with ordinary vaccine lymph, they will not be subject to distemper. In a letter to the London *Daily News* he says that for the past twenty years all his young dogs have been freed from ordinary dog troubles by the application of vaccine virus.