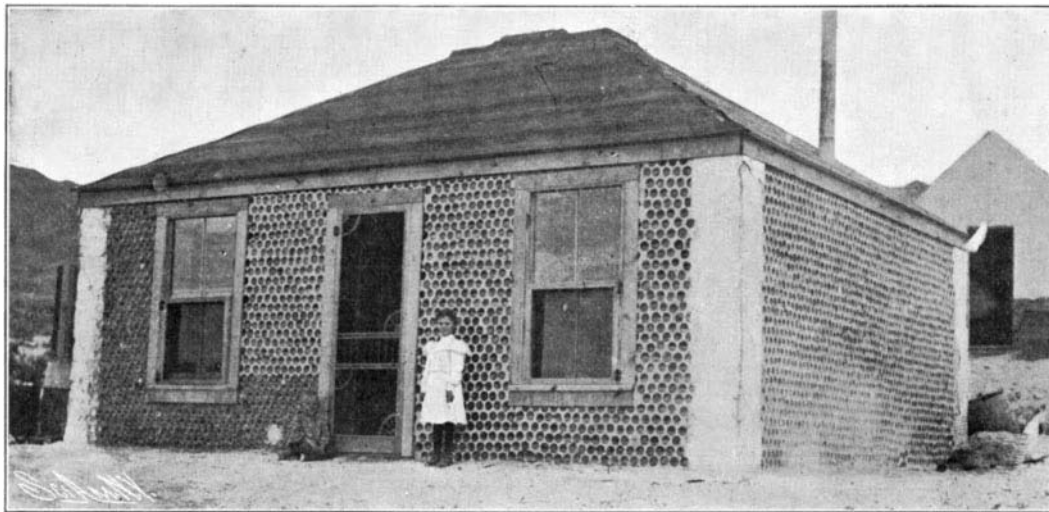


A BOTTLE HOUSE.

This house is one of the most remarkable ever constructed, for it is really composed principally of glass bottles. It stands in the town of Tonopah, Nevada, and was erected by a miner who used the bottles on account of the scarcity of other material. The bottles were placed in rows with the bottom ends outward, as shown in the photograph, and are held in place by mud in place of plaster. The corners of the building are composed of wooden beams, also covered with mud. The walls are about a foot in thickness, and are so well constructed that the house is actually more comfortable in winter than many of the other dwellings in Tonopah, which are built of other material. It is 20 feet in length, 16 feet in width, and contains two rooms. It was built entirely by the owner, a miner named William F. Peck.



A BOTTLE HOUSE.

The "Sleeping Sickness" in Africa.

According to a statement issued by the American Board of Commissioners of Foreign Missions, no less than 68,000 persons have died of the curious sleeping sickness which has ravaged Africa, 10,000 having perished within the last five months. Notwithstanding all efforts on the part of the British authorities, there has been no abatement in the spread of the disease in Uganda. The sleeping sickness made its appearance in that section two or three years ago. A commission sent from England, headed by Col. Bruce, has decided that the disease is scattered by a fly called *tsetse*, but no antidote has yet been discovered. Another commission is said to be in prospect to see what can be done to prevent the spread of the plague. Segregation seems impossible, and no relief is in sight.

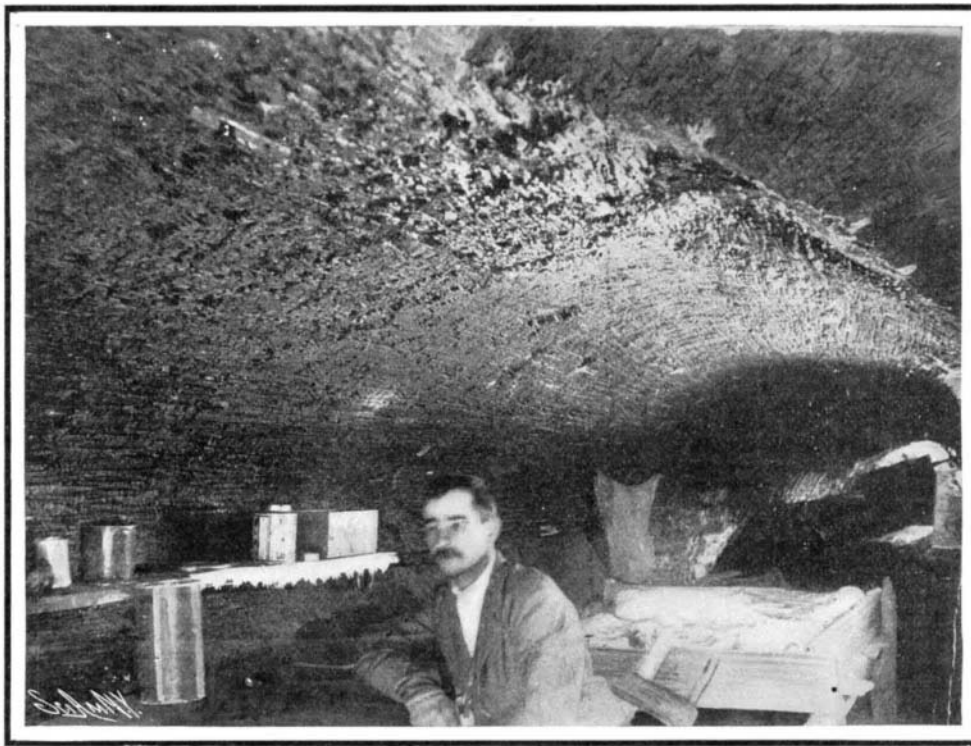
The first symptom of the presence of the disease is headache, with swelling of the glands of the neck, followed by protracted sleeping on the part of the patient. The disease runs its course in from six weeks to two years.

A REAL LOG CABIN.
BY ARTHUR INKERSLEY.

On the Marble and Middle Fork Divide of the Kaweah River, California, there is a noble forest of sequoias, of which Mr. John Muir, the well-known naturalist and mountaineer, writes: "After a general exploration of the Kaweah Basin, this part of the sequoia belt seemed to me the finest, and I then named it the 'Giant Forest.' It extends, a magnificent growth of giants grouped in pure temple groves, ranged in colonnades along the sides of meadows, or scattered among the other trees, from the granite headlands overlooking the hot foothills and plains of the San Joaquin back to within a few miles of the old glacier fountain at an elevation of 5,000 to 8,000 feet above the sea."

In this region Mr. Muir came across a man who was herding a band of horses that had been driven up a rough trail from the lowlands to feed on the forest meadows. When Mr. Muir, whose scanty supply of food was running very low, asked if he might have some flour, the man said, "Yes, of course, you can have anything I've got. Just take my track and it will lead you to my camp in a big hollow log on the side of a meadow two or three miles from here. I'll be back before night; in the meantime, make yourself at home." By the middle of the afternoon Mr. Muir had discovered "his noble den in a fallen sequoia hollowed by fire—a spacious log-house of one log, carbon-lined, centuries old, yet sweet and fresh, weather-proof, earthquake-proof, likely to outlast the most durable stone castle, and commanding views of garden and grove grander far than the richest king ever enjoyed." The mountaineer soon came in, and he and John Muir enjoyed a talk on trees, animals, etc., while he busily prepared the evening meal.

Mr. Muir wandered about for several days within a radius of six or seven miles of the camp, studying the surrounding country and at last regretfully bade good-bye to his host, "the kind sequoia cave-dweller," as he called him.



A REAL LOG CABIN.

Dispersing Fogs by Electricity.

In the course of a recent lecture before the Physical Society of Great Britain, on "The Means of Electrifying the Atmosphere on a Large Scale," Prof. Oliver Lodge demonstrated that by the discharge of electricity into the air in large quantities fogs may be dispersed, as the particles of mist and smoke coalesce, or cohere, under influences of this medium, and fall to the ground. Prof. Tyndall proved that a heated body placed in an atmosphere clouded with dust formed around it a dark space, which was dust-free. He

thought that the hot body consumed the dust, which in his experiment was organic. Investigating the phenomenon twenty years ago, however, Prof. Lodge found that Tyndall's theory was wrong—that there was a sort of aerial bombardment from the heated body which kept the dust at a certain distance, but he also discovered that when electricity was substituted for heat the particles acquired polarity, ran together, and were repelled to the sides of the vessel. This fact induced him to advance the theory that by electrification of a misty atmosphere fog could be dispersed. A trial was made at Liverpool, where Sir Oliver was then professor of physics. The air around University College was electrified by means of a Wimshurst machine, the current being most effectively dispersed by the aid of flame at the summit of a tall mast. The result was that in a dense fog a space of fifty or sixty yards radius was kept quite clear. Sir Oliver Lodge fruitlessly endeavored to induce the Mersey Dock Board to place a sufficient number of stations on both sides of the river, and by electrifying the air on one side with positive, and on the other with negative electricity, to discover if the fogs on the stream, which are always accompanied by collisions, could not be got rid of. Sir Oliver has followed up this subject, and has now sug-

gested the utilization of an improved kind of dynamo, instead of the Wimshurst machine, to give a continuous, and not an alternating, current of electricity. He illustrated the principle of his thesis by a large glass bell filled with dense magnesium smoke. He then electrified the air within the jar, and the smoke particles cohered and fell like so much snow, the air at the same time clearing. Given the means of electrifying a cloud, Sir Oliver Lodge saw no reason why its watery particles should not be forced into drops, and made to fall as rain.

The Strength of American Timbers.

Timber tests which shall determine the strength of the principal American timbers used for construction purposes are now in progress at Washington, D. C., at Yale University, New Haven, Conn., at Purdue University, Lafayette, Ind., and at the University of California, Berkeley, Cal. These tests are made under the direction of the Bureau of Forestry, and are for the benefit of lumbermen, construction engineers, and scientific men who are interested in the strength of different wood fibers. The Bureau of Forestry plans from the results of its tests to make tables of the strength of different American woods to which the engineer may refer when he wishes to know what timbers to use for certain purposes. The tests will be in cross bending and breaking, compression with and against the grain, and shearing.

No complete and satisfactory series of tests on large sticks of timber has ever been made in this country. Lumber manufacturers in the South and the Pacific Coast States are especially interested in this work, since they wish to know more about their product. They have contributed gratis much of the material used in the tests.

The chief timbers now being tested are the Southern pines and the red fir of the Pacific coast. In the laboratories at Washington tests are now in progress on loblolly pine sticks 17 feet long and 8 by 14, 8 by 8, and 8 by 4 inches. Special attention is given to the effects of moisture on the strength of wood. In the case of loblolly pine which has grown rapidly, the strength was found to decrease 50 to 60 per cent after the dry wood had been soaked several days in water. The fact, however, is not yet established and will have to be proved by further experiments. The timbers tested are of the usual grades purchased in the market and are not selected pieces.

At the laboratory of the Yale Forest School in New Haven small selected pieces of longleaf pine, without knots or other defects, are being tested so as to learn what is the ultimate strength of the fibers.

At Berkeley, Cal., tests are being made on red fir from timbers contributed by red fir manufacturers.

Dr. W. K. Hatt, who is stationed at Purdue University, is carrying on a series of tests there with hardwood timbers and is preparing for publication the results of all the tests of the bureau.

A Sliding Railway.

The novelty of high-speed railway construction described in the *Revue Technique* by M. G. Sautereau consists in doing away with the running wheels of the cars and replacing them with slippers or skates. The cars are raised on a thin film of water, which is forced under the skates through a jet. In the earlier plans the propelling force contemplated was a horizontal jet of water, which was directed against suitable vanes on the bottoms of the cars. The valves of these jets were opened by the leading car and closed by the rear one. In the plan as at present proposed, a third rail is laid between the two gliding rails, and a friction wheel, driven by electric motors, runs on this and furnishes the propelling force. The advantages claimed for this system of traction are a great reduction in the track resistance and in the power required by a car, a much smoother running of the cars, and hence a smaller depreciation both of track and car. There is no danger of derailment, and high speeds can be attained. By cutting off the water supplied under the skates, a great braking effect is secured. Figures are given to show the economy of the system over electric traction on wheels.

The cost of the first census taken of the population of the United States was not quite \$45,000. The cost of the census taken in 1900 was \$13,115,439. The cost of the first census per head of the population was a little over 1 cent; in 1900 the average cost had risen to 17 cents. The decided increase in the cost is explained by the great extension of the census and of the details associated with it.