

GREAT MINERAL WATER BATHS.

There are scattered over this country a large number of natural mineral springs whose waters vary, both as to temperature and constituents, to such an extent as to adapt them as curatives to almost every disease human flesh is heir to, and it is a curious fact that we find in the United States springs that correspond in almost every particular to the noted springs in Europe. We also have many artesian wells yielding mineral waters differing widely in chemical composition and varying in temperature from 47° to 184°. Some of these wells were bored with the expectation of finding mineral waters, but the most of them were put down for the purpose of obtaining pure water, petroleum or gas.

At Stockton, Cal., there is an artesian well 1,700 feet deep, from which flow 2,250 gallons of water a minute. In addition to this large flow of water, the well yields 75,000 feet of illuminating gas daily. The well was bored for natural gas, but the water, on account of its pleasant temperature and medicinal properties, was found to have great value for the purposes to which it is applied.

The water issues from the well at a temperature of 86° Fah., and supplies a miniature lake varying in depth from a few inches to 10 feet. This lake, which is about 400 feet long and 80 feet wide, is fitted up as an immense swimming bath and is surrounded by 115 dressing rooms. The water being continually renewed by the flow from the well, the temperature of the lake is maintained between 80° and 86°. Bathers at this place derive great benefit from baths in this water, and draughts of it prove beneficial. Analysis shows it to be impregnated with common salt, soda, magnesia, iron, and sulphur. Fish are often seen jumping from the surface of the lake. Several varieties have been caught there by our own artist, who made the accompanying sketches. It is supposed that the fish find their way into the water of the lake through the overflow.

Our engraving shows the separator by means of which the water flowing from the well is separated from the gas and directed to the lake. The gas is conveyed to a gasometer, from which it is distributed for lighting and heating purposes. A second well is being drilled, but up to the present time the only yield from this well is gas. It is thought that the absence of water is owing to its proximity to the first well. However, the work is being pushed still further, with the expectation of finally striking a good flow of water.

When the out of door temperature is too low to permit of bathing in comfort, bathers resort to the covered baths, the air of which is heated by a jet of natural gas burning freely in the room, as shown in one of the engravings.

It is stated that as many as 1,000 bathers can be accommodated daily at this place. In addition to the large bath and the inclosed baths, there are twelve private bath rooms containing large tubs, and other rooms containing bath tubs for children too small to be taken into the lake.

This place has become a great resort, not only of the citizens of Stockton and the surrounding country, but of people from distant places who visit the place as much for pleasure as for the beneficial effects of the mineral water. These baths are probably the most popular inland resort on the Pacific coast.

Some Strange Plants.

The line between the vegetable and animal kingdoms is very narrowly drawn. Indeed, as all naturalists are aware, there are certain forms of lowly life which it is difficult to assign to either kingdom, presenting as they do features which, taken singly, might cause the one to be identified now with one and now with the other. But even in more highly developed forms there are instances of plants whose carnivorous habits seem to suggest some survival of a former animal instinct, or at least some strange adaptation to circumstances of a nature entirely opposed to those by which the great bulk of plant life is affected.

The *Mediterranean Naturalist*, published at Malta, quotes from the *Liverpool Post* the following description of an adventure that befell a naturalist who has recently returned from Central America. This gentleman, after two years' study of the botany of that region, has brought with him a story which, if it be anything more than a "traveler's tale," may well make us thankful that the woods of our temperate clime contain nothing more inimical to the integrity of the human form than burrs and briars. He tells of a strange plant which he found in one of the swamps surrounding the Nicaragua Lake.

While hunting for specimens he heard his dog cry out, as if in agony, from a distance. Running to the spot whence the animal's cries came, Mr. Dunstan found him enveloped in a perfect network of what seemed to be a fine, rope-like tissue of roots and fibers. The plant or vine seemed composed entirely of bare, interlacing stems, resembling more than anything else the branches of a weeping willow denuded of its foliage, but of a dark, nearly black hue, and covered with a thick, viscid gum that exuded from the pores.

Drawing his knife, Mr. Dunstan attempted to cut the poor beast free, but it was with the very greatest difficulty that he managed to sever the fleshy muscular fibers of the plant. When the dog was extricated from the coils of the plant, Mr. Dunstan saw to his horror that its body was bloodstained, while the skin appeared to be actually sucked or puckered in spots, and the animal staggered as if from exhaustion. In cutting the vine the twigs curled like living, sinuous fingers about Mr. Dunstan's hand, and it required no slight force to free the member from their clinging grasp, which left the flesh red and blistered. The tree, it seems, is well known to the natives, who relate many stories of its death-dealing powers. Its appetite is voracious and insatiable, and in five minutes it will suck the nourishment from a large lump of meat, rejecting the carcass as a spider does that of a used-up fly.

Another strange plant that has lately been discovered flourishes in masses, resembling huge gray bowlders from five to ten feet across, covered with lichens and grass, seen in the lowlands of the Falkland Islands, and each one proves to be a single umbelliferous plant, a specimen of balsam bog (*Bolax glebaria*). These have grown so slowly, and have been so compressed in branching, that they are almost as hard as the rocks they resemble. The circlets of the leaves and leaf buds are seen as tiny hexagonal markings, terminating in a multitude of stems, which have been steadily growing for centuries. The plant emits a pleasant odor in the warm sunshine, and the top exudes an astringent gum that is prized by the shepherds.

Lac Insects in the United States.*

Several kinds of plants have recently been discovered in the United States which are infested by lac insects, notably the "stink weed" and a certain variety of acacia. These flourish abundantly from southern Utah to northern Mexico and from the Colorado Desert to western Texas. There is no reason why these valuable insects should not be gathered and put to very profitable use. It is even asserted that, with care and cultivation, the production of them could be rendered so large as to make Americans independent of foreign supplies of lac. Artificial propagation is resorted to abroad, although the bulk of the product is gathered from the jungles. Its employment is most familiar in the lacquered ware manufactured in the East, though it is utilized for many other purposes, notably in the composition of sealing wax and varnishes.

The "lac" of commerce is a resinous incrustation, resulting from punctures of the twigs and branches of certain kinds of trees by insects. Its color varies from deep red to bright orange, and it occurs in brittle fragments. The female insects utilize it for the purpose of protecting their progeny. As soon as each one has covered herself with the secretion, which serves as a sort of cocoon, she lays her eggs and dies. The young, upon being hatched, make their way out through the crust, and seek green and juicy spots on the bark, inserting their probosces and beginning to feed at once. They never wander from the branch where they first came into being. The latter, after affording nourishment to millions, finally withers and dies. Thus the extinction of the lac-making species would soon come about were it not for the fact that other insects and birds carry them about, planting new colonies in fresh places.

The lac insects are most plentiful in India, but they are also found in Siam, Ceylon, and other countries. Siamese lac is considered the best. Certain provinces of India yield thousands of tons of "stick lac" annually. The right of collecting the lac in some parts is rented out by the government to companies, but the gatherers of lac are mostly jungle tribes. They obtain the product in the wild forests, sell it to small dealers, who in their turn dispose of it to big merchants. Much is done in the way of propagating the insects artificially in the central provinces of India. For this purpose, nurseries of the proper kinds of trees, such as the insects naturally feed upon, are formed. At the right season, when the larvæ are about to be hatched, twigs bearing the incrustations are cut in the woods and tied with bits of grass to the upper branches of the trees in the nursery. The insects are thus transplanted to nursery trees, where they rapidly multiply and form the precious lac. At regular intervals the twigs bearing the lac are cut off—this process of pruning encouraging the development of fresh twigs for insects to feed upon.

The crude lac on trees is called "stick lac." In manufacturing it the first process is to strip the twigs of the incrustation by passing them under rollers. The wood is rejected and the separated lac is ground up by rolling into a coarse powder. In this form it is put into large tubs half full of water, in which it is stamped and trodden by coolies, who get into the tubs and do the work with their feet. The water is changed repeatedly, this performance being kept up until it comes off entirely clear. Then the lac is dried, being now designated as "seed lac," after which it is put into long cotton bags. Two men take one of these bags containing

* From the *Washington Star*. Reprinted from the *Oil, Paint and Drug Reporter*, May 23.

lac by the ends and hold it in front of a charcoal furnace, twisting it the while. The roasting melts the lac and the twisting causes it to exude through the cloth and drop into a trough below. From the trough it is dipped out with a wooden spoon and skillfully spread over a metal cylinder in such a manner that, cooling and hardening immediately, it is formed into thin sheets. These sheets are the shellac of commerce.

Forbidden by Law to Use Sea Water.

One of the curious ways the French government has for obtaining its revenue is told by Edmund Yates in the *New York Tribune*.

In confirmation of Mr. Yates' story, one of the editors of this paper had like experience on the shore of the Mediterranean some years ago.

The doctor who was in attendance on a member of the writer's family desired his patient to have sea water baths daily at the hotel. But before the attendant dare to dip even a pail of water from the sea a permit from the prefect of the police had to be obtained, and to get his permission it required the physician's certificate.

A well known English public man, writes Mr. Yates, member of a former administration, staying in one of the many quiet and pretty villages on the Riviera, the garden of his temporary home running down to the sea, on a recent morning, so the story runs, wished to vary his usual bedroom bath by substituting salt water for fresh, and asked that a pailful be fetched for him. To his intense amazement he was informed that this could not be done without special permission from the civil power. There was the Mediterranean stretching broadly before his bedroom window, countless miles from east to west, and away again toward Corsica in the south as far as the eye could reach, and at the end of the garden, mind you, and yet as much of it as would fill an ordinary pail must not be taken from it. It was too absurd for belief. It turned out to be quite true, however. Not a servant nor a villager could be induced to draw a few quarts out of the sea for fear of the penalties which would follow, and in the end the official permission of the mayor of the village had to be formally sought and granted before the English politician could have a salt water sitz bath. The tax on salt was at the root of this anomaly, and the stringent restriction was to prevent the natives from boiling down sea water and making salt for themselves.

Patent Rights Cannot be Taxed.

Judge McPherson, of the Pennsylvania Supreme Court, has handed down an opinion holding that the Westinghouse Electric and Manufacturing Company, notwithstanding the varied powers conferred by its charter, is nevertheless exclusively for manufacturing purposes. He discusses at great length the patent right feature, which he says "presents a question of great importance which has not been decided by any court of last resort, so far as we are aware, and which deserves and has received our consideration." He sustains the contention of the company's counsel, and holds that the right to tax patent rights does not exist in the State, because "as a tax upon the right itself we think it cannot possibly be supported, because it restricts and interferes with a right granted by Congress in the exercise of power exclusively committed to the government of the United States by the federal constitution. The tax is not only derogatory from the dignity but subversive of the powers of the government and repugnant to its paramount sovereignty."

The court expressly states, however, that the opinion is restricted to the intangible right existing in the patents, and does not extend to tangible articles manufactured under patent rights. The judgment in each case is wholly in favor of the company. The amount involved in the Westinghouse case was \$8,839.90 for 1888; \$14,694.46 for 1889; and \$16,739.57 for 1890.

Counting Coins by Electricity.

In the London Mint, it is stated in the master's report just published, a new counting machine for telling bronze coin has been erected in the bronze store. It was designed by Messrs. Maudslay, Sons & Field, Limited. The machine has four distinct sets of counting apparatus, each of which can be worked independently of the others, and when all four are in full work upward of 3,000 pence can be counted per minute. The coin to be told is raised to the level of two tables placed on a platform by a lift worked by an electric motor, which also drives the counting machines. A pair of these machines is fed from each of the two tables, the coins passing from the table down an inclined iron plate forming a flat hopper, from which they issue in single file through a channel of appropriate width. They are then gripped by a pair of India rubber driving wheels, which force the coins past the rim of a thin disk provided with recesses in its circumference to fit the circular edges of the coins. As the disk is thus made to revolve, the coins are pushed forward, falling into a bag placed to receive them, and continue to advance until the counting wheel is automatically stopped and the bag containing the coins is removed.

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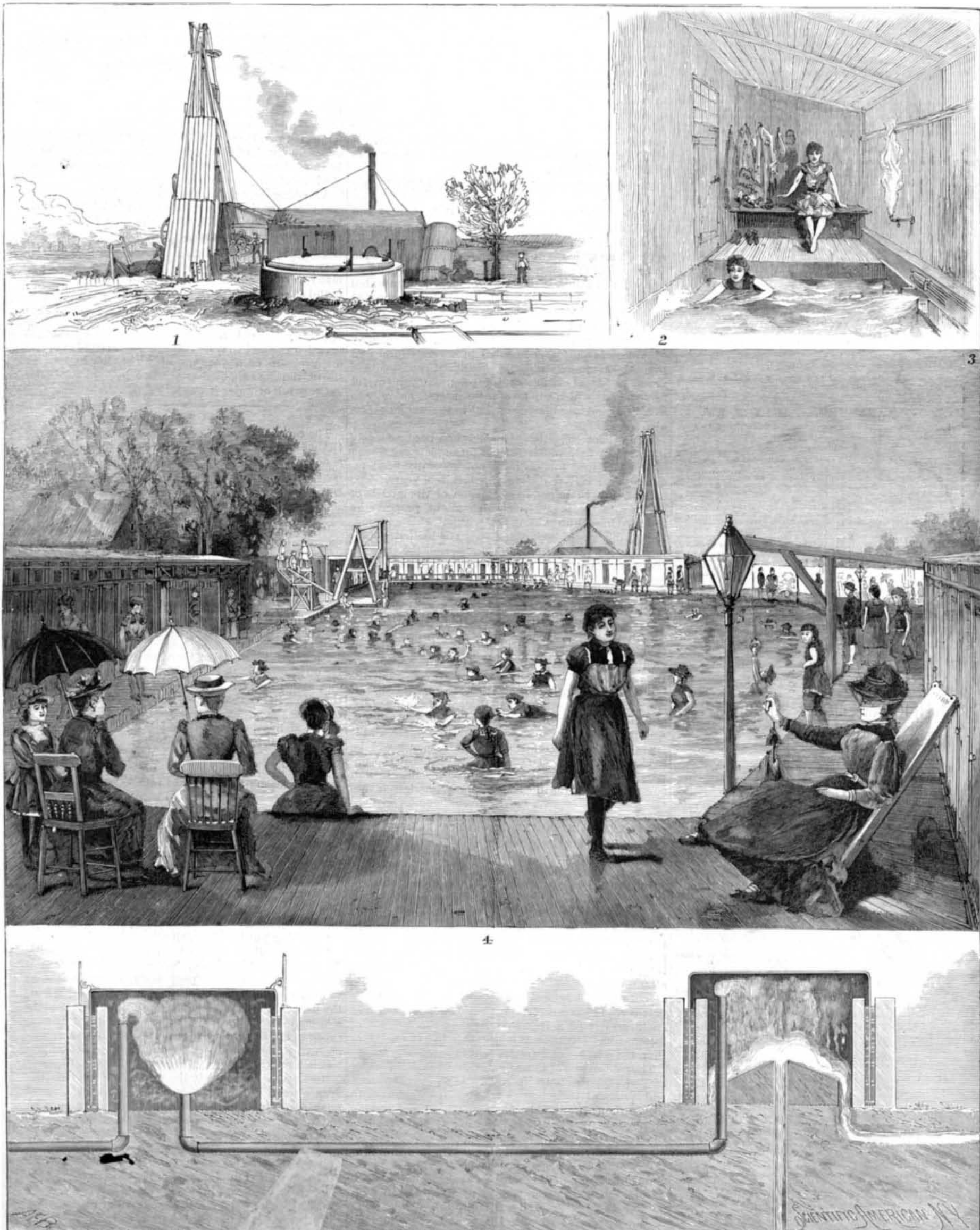
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