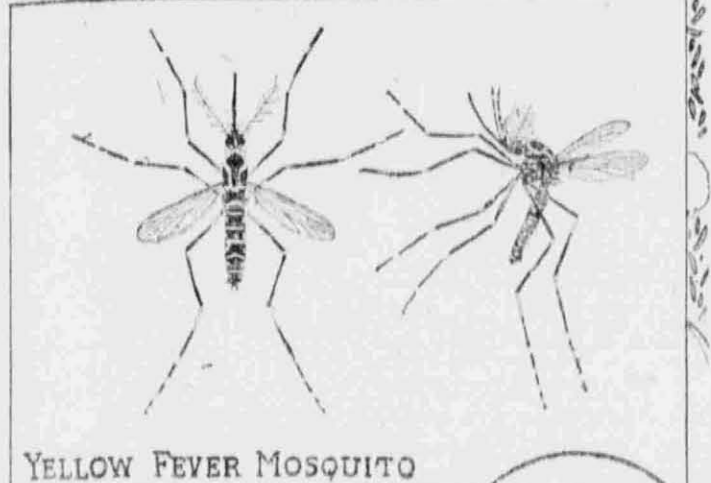
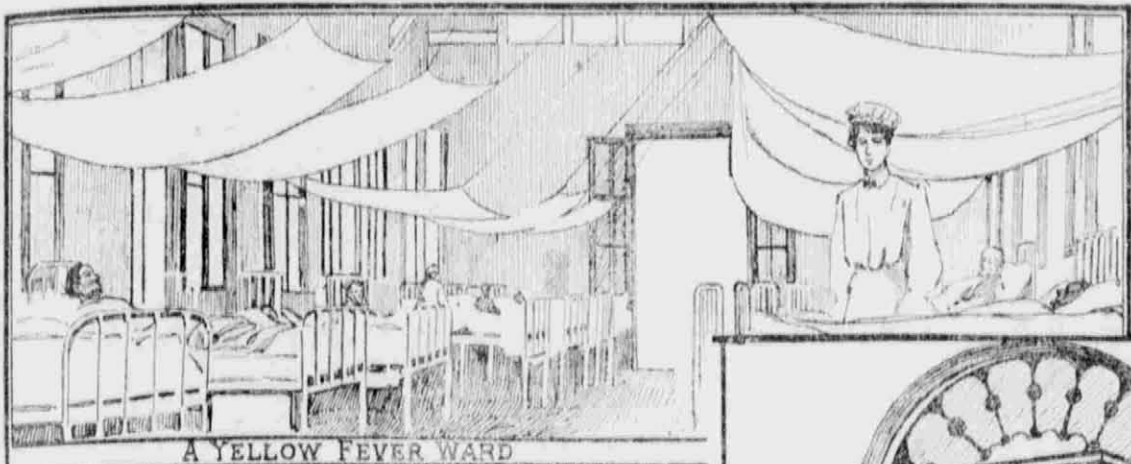


Yellow Jack as It Is Known to Modern Science



THE recent outbreak of yellow fever in New Orleans, although it has not at any time assumed the character of an epidemic, as is the case on the isthmus of Panama, has been sufficient to excite the most earnest and most vigorous effort for its suppression. With the history of past epidemics of the disease to which the isthmus of Panama has been exposed, the combat against this most dreaded of summer visitors is no longer the unequal struggle it once proved to be. Modern research and improved methods of sanitation have robbed the ancient terror of much of its awe-inspiring character, but too much that is reminiscent of its horrors still remains.



Medical men have never left off their search for the cause of yellow fever since they began to treat it. It was believed by many that it was infectious, a specific miasm carried in the air. Others taught that it was contagious, contracted only by actual contact with substances which had been contaminated by a fever patient. After the search for micro organisms began, the fact that there were many and diverse micro organisms of the disease, the fact that it was contagious, and the fact that it was infectious, were all proved to be true. In the summer of 1906 came the first finding of the true solution. The United States government had undertaken to free Havana from its unsavory reputation for unhealthfulness and as a preliminary Surgeon General Sternberg (now retired) appointed a board to investigate the yellow fever. The preliminary observation disclosed several significant facts. It was found that nonimmune persons did not often contract the disease. That seemed to contradict the idea of contagion and infection. Repeated examinations of the blood and excreta of patients showed no signs of the presence of bacteria. That disposed of the microbe theory. Ten years earlier a Cuban physician, Dr. Carlos Finlay, of Havana, had propounded the theory that the fever could be carried by a mosquito, the culic (now ategomyia) fasciatus. The board began to experiment with this insect. Human persons were permitted to be bitten by these contaminated mosquitoes. From nine there came no result (two had yellow fever). This proved conclusively that the disease could be communicated in that way.

Two experiment houses were built at Quimada, Cuba, one of them called the "infected mosquito building" and the other the "infected clothing building." The former was screened and well ventilated; the other was screened and unventilated. In the former, patients were bitten by infected mosquitoes; in the latter, no mosquitoes were admitted, but the persons submitting themselves to the experiment slept with soiled bedding and clothing still remained the salutary expedient of screening both the patient and the nonimmune person from the presence of the mosquito. This is practically the modern way of dealing with yellow fever. That it has been effective is proved by the fact that within a few months after mosquito extermination began at Havana the fever disappeared for the first time in a century and a half.



EGGS OF YELLOW FEVER MOSQUITO ON GRASS STEMS

It is a well authenticated fact that yellow fever has prevailed essentially throughout the West Indies and in certain regions on the Spanish main ever since the discovery of America. Barbados, Jamaica and Cuba suffered epidemics before the middle of the seventeenth century. There were outbreaks of the pest in Philadelphia, Charleston and Boston as early as 1692, and for a hundred years afterward there were occasional eruptions, culminating in the famous Philadelphia epidemic of 1793. Most northern cities were able by extraordinary sanitary and quarantine measures to prevent

it on the west coast of Africa, in the countries bordering on the Mediterranean and in India. Of course its wide distribution at the time it was first classified as a distinct disease would not militate against the theory of its American origin, but it is also an undeniable fact that outbreaks of the disorder occurred in the lagoons of Africa long before the discovery of the American continent.

Once accepting the theory that yellow fever is of African origin, it is not difficult to explain its transmutation to America. It is one of the baneful legacies bequeathed by the slave trade. The slave dealers of the seventeenth and eighteenth centuries often lost from one-half to two-thirds of their cargo during the voyage from a mysterious fever which broke out suddenly in the filthy holds of the overcrowded ships, and this complaint, formerly denominated African or ship fever, is now believed to have been yellow fever. Whenever it appeared among the hapless and terrified

charged her cargo. It is not difficult in the light of present knowledge to trace the course of yellow fever in tropical countries, and whenever sufficient and unprejudiced investigation has been made it has been found that the disease has followed the slave trade. In the interior towns of Mexico, Central America and in the Spanish settlements on the South American continent it not infrequently prevailed after the arrival of a shipment of African slaves and its appearance in subtropical Europe may be referred to the same cause. Its earliest recorded appearance as a pestilence on the continent of Europe was in the Spanish ports of the Mediterranean, whence it spread to the cities of the Levant, along the Red sea and finally to India. In the latter country it found congenial surroundings and obtained a foothold that it is still well established in the crowded Hindu cities. In the seventeenth century the slave trade was regarded as a perfectly legitimate business, followed by the ships.

In 1722 several thousand persons died during an epidemic of yellow fever in the Quaker City, and there were subsequent destructive visitations in 1734, 1757 and 1802. The great plague of 1793 really began in New York and spread over most of the United States during that and the following season. The worst experience southern Europe ever had with the fever began at Gibraltar in 1804. A slave ship with the disease on board was encountered by a British merchantman at sea off the Gibraltar strait, and as there were not enough well men on board to man the ship the captain of the British vessel sent several sailors aboard the slave ship and advised its master to put in at Gibraltar. The slave ship did so. The slaves were landed, the ship was cleaned, and a few days later the fever was in full blast among the soldiers of the garrison. Over a thousand soldiers died of the complaint and three that number of civilians. Many fled, and the contagion was spread along the Spanish ports of the Mediterranean. In the following summer it made its appearance at Algiers and a few weeks later at Naples, where some 5,000 fatal cases occurred. Thence the malarial made its way along the Italian and French coasts to Genoa, where it found congenial soil. The ports of the coast were each stricken in turn, and the scourge followed the pilgrim route about the Red sea to Mecca. Returning pilgrims took it with them to India, and the great epidemic followed.

During the past century the visits of the dreaded disease to the United States were numerous. New Orleans has been the chief sufferer. Epidemics of yellow fever prevailed there in 1817, 1823, 1850, 1853, 1857, 1878 and 1879. The visitation of 1817 was the most deadly, over 8,000 persons having fallen. The epidemics of 1850 and 1878 and 1879 are still recalled with horror. During the first season of the pest there were 5,000 deaths, and during the second, although the town was almost deserted, there were several thousand more. This pestilence of 1817 was the most destructive of any ever experienced in the United States. 65,000 cases having been reported and 11,800 deaths. During the civil war there was scarcely a case among the Union troops in the south, although it was freely predicted that the forces of the South would be annihilated by the disease. When New Orleans was occupied by General Butler many persons feared the destruction of his army as a certainty. He began immediately to put the city in a good sanitary condition, ordering squads of his men to clean the streets and remove the refuse. As a result there was not a single case of yellow fever in New Orleans during the Union occupation. — RICHARD LAWTON.

Some of the Treasures and Terrors of Death Valley



ACCORDING to the predictions of those best qualified to speak, there will be a stampede to Death valley during the coming autumn. This sudden revival of interest in that mysterious and forbidding region has been stimulated by the recent official report confirming the existence of mineral deposits of unfathomable value as well as by the periodical emergence of some venturesome prospectors with specimens of the treasure that lies within the uninviting waste. Perhaps the individual who has contributed most liberally to the recent increase of interest in the valley is the erratic Walter Scott, who for some time has been making a series of occasional disappearances and returns, regarding the habitable world on each occasion with a liberal supply of the gold that is hidden from those who have tried to follow in his footsteps.

Only a few years ago the borax mines at Borate, on the edge of the Mojave desert, were believed to be the richest deposits of that useful salt in the world. About that time it was discovered that the borax fields within Death valley were so extensive and the salt itself of so pure a quality that all other known sources of supply were of little value in comparison. Francis Marion Smith, known as the "borax king," who owned the mines in the Mojave district, made haste to secure the borax deposits in Death valley. His company built a road into the hitherto inaccessible region and erected smelter works at Daguerre for the reduction of the salts. Soon after this a huge wagon came out of the valley and unloaded at Daguerre, the first railroad station on the Santa Fe line, two tons of ore which was worth from \$8,000 to \$12,000 a ton. This was the first important shipment of auriferous ore from that locality. The ledge from which this rich ore was taken had been discovered a short time before by a poor prospector, Walter Scott, who has never revealed the place of its concealment. How Scott managed to obtain the golden nuggets with which he seems to be so plentifully provided is the unsolved mystery which has faced all those who have attempted to follow in his adventurous footsteps. There is no water within many miles of all the gold-bearing ledges indicated by the government experts, and

prices they would yield \$1,000,000,000. One reliable expert who examined the beds for an American company made the statement that if the entire field could be operated this would be the richest of the richest of the world. It is affirmed by those who have investigated the matter that borax is never found in nature except in the crystals of extinct volcanoes. It is a fact that in California all of the deposits yet discovered lie at the bottom

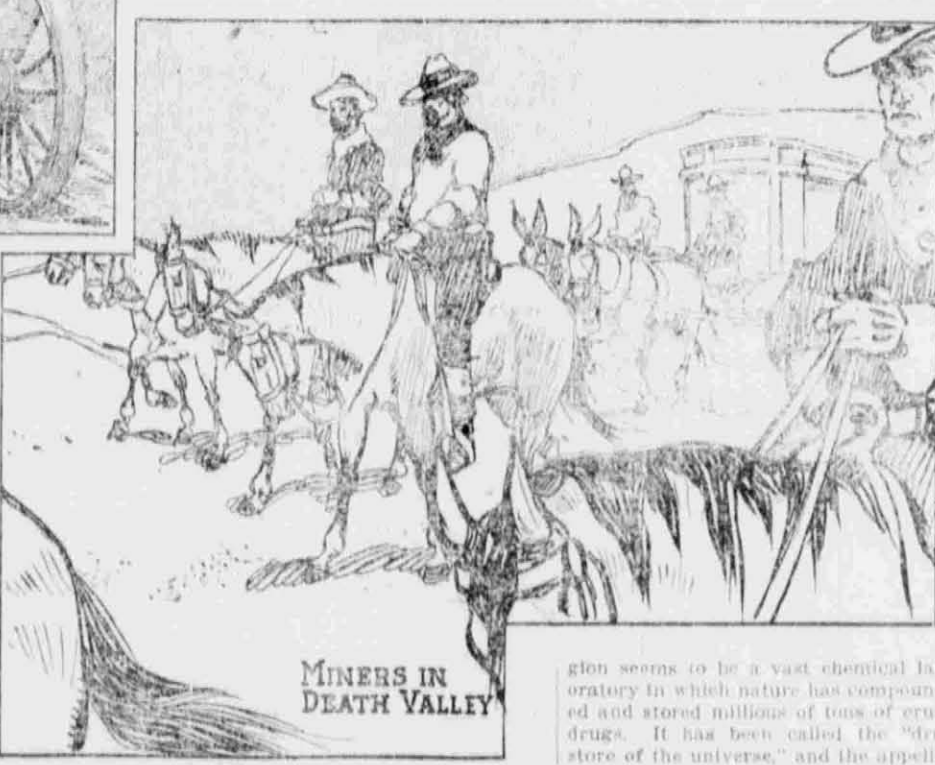
A DEATH VALLEY PROSPECTOR



DESERT WAGON WITH WATER TANK TRAILER



A TREE YUCCA



MINERS IN DEATH VALLEY

of those bowl shaped valleys which are known by geologists to have been outlets for prehistoric fire mountains. The presence of borax in Death valley is everywhere indicated by the heavy appearance of the bottoms, which to the unaccustomed seem precisely like snow fields. It is exceedingly hazardous to attempt to cross these stretches, for under the thin shell of salt lie fathoms deep deposits of poisonous waters. Over 20,000 acres of borax, soda and salt deposits have been located in Death valley. The entire region is singularly fit for borax from Death valley first found it was into the market about a quarter of a century ago. It was mined from deposits found in the Calico mountains and from one or two sinks at the edge of the valley, and it was taken out in comparatively small quantities and shipped across the Mojave desert in wagons drawn by mule teams consisting of from sixteen to thirty-two animals. This dangerous business was carried on until 1888, when it was abandoned because most could not be induced to work the mules or even to drive the mules. It became known that few of those who entered the valley ever came forth alive. Six or seven months seemed to be the limit of one's endurance. At the end of that time the venturous miner had either succumbed to the killing heat and the poison laden atmosphere or had become such a physical wreck that he was forever incapacitated for further effort. It was believed to be a form of suicide to engage in the venture.

After fourteen years of silence the South Mining company resumed the mine and developed new ones. Better methods and more modern equipment, together with additional measures looking toward the safety and comfort of those engaged in the work, made a temporary attempt in the valley less hazardous, and much has been learned since then to accept the liberal wages offered by the company. The mule teams are still employed to haul the product of the mines to the smelter works, but at the same time traction engines weighing hundreds of tons are used to haul the ore to the smelter in the gateway of the valley.

During the summer of 1905 men began to concentrate all their energies in bordering the atmosphere of Death valley as a mine. Everything becomes a story that it literally blossoms. The desert scene settles on it as the minimum and does not change to show 140 on special occasions. The humidity is so slight that it matters not how vigorously one exercises, perspiration never manifests itself. The texture of the skin of one who remains for some time within the influence of the peculiar atmosphere of the region becomes the burned leather. In this abnormal heat a man's shirt drenches anything like three gallons of water a day, and then it is not quenched—the water is still impure. It is also a matter of record at the California mining bureau that men who have entered the

valley with an abundance of water at their command have died there of thirst, the acid, chemically charged air, sapping the moisture from their bodies more rapidly than they could supply the deficit at the edge of the valley, and it was taken out in comparatively small quantities and shipped across the Mojave desert in wagons drawn by mule teams consisting of from sixteen to thirty-two animals. This dangerous business was carried on until 1888, when it was abandoned because most could not be induced to work the mules or even to drive the mules. It became known that few of those who entered the valley ever came forth alive. Six or seven months seemed to be the limit of one's endurance. At the end of that time the venturous miner had either succumbed to the killing heat and the poison laden atmosphere or had become such a physical wreck that he was forever incapacitated for further effort. It was believed to be a form of suicide to engage in the venture.

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A Carlsberg engineer is said to have invented a contrivance by means of which, in the event of fire, the audience of a theater can be detached by hydraulic power from the stage and lowered, audience and all, into the street.

Japan has 4,256 miles of railway, of which 219 miles were constructed in 1903. The number of passengers carried on these railways in 1903 exceeded 119,000,000, the freight transported was 16,125,571 metric tons and the cash receipts amounted to about \$23,800,000. The bureau of navigation of the department of commerce and labor has made public its annual shipping review for the year ending June 30, 1905.

There were 1,054 sail and steam vessels of 263,064 gross tons built in the United States and officially numbered during the year.

Any Belgian workman who is over sixty-five years old and has less than \$70 a year income is entitled, on demand, to an old age pension of \$12.55 a year.

According to the British Medical Journal, men's necks are longer than

they used to be. This statement is made in quoting an expert opinion that high collars produce a feeling of want of air and numbness in the head.

A blue crane is the pet of the Sixteenth British Lancers, and it may be seen at Colchester, England, following the inspecting officer on his rounds. In the West Indies there is a tree, the inside bark of which is used without any special treatment for making

mantillas, cravats, window curtains, etc. Australia and New Zealand also have trees that yield a lacid substance, which is used to make articles of apparel.

The production of the "School of the Cross" at Oberammergau has proved a failure. Instead of the 4,000 spectators who were expected for the opening performance, the ticket brought only 200.

The United States is the world's only

white power of any consequence which fronts on the Pacific, for England's few hundred miles of contact with it in British Columbia do not count, compared with our 2,000 miles from the Mexican line to Washington's northern boundary.

Austria's beer tax yielded about \$15,000,000 last year. There were 1,418 breweries, whereas Germany had the enormous number of 18,211 breweries,

or just about one-half of the breweries (10,567 in all) in the world.

To Queen Alexandra's pet dog, a beautiful white Pekingese named, called Xerxes, has been added. It is the gift of Albrecht, Reichsgraf, who is the queen once remarked, "almost as silly as herself" about his pet.

The United States pays more money for the transportation of mails than all other countries combined.