CHAPTER XIII.

THE SEASONS ON THE Isthmus—Terrific Thunder and Lightning—Dry Season Weather—Moonlight and Starshine—The Effects of a Storm on a Canal Employé—Early Morning in the Dry and Wet Seasons—Italian Skies.

The seasons of the Isthmus are two in number, the wet extending from about the 15th of April to the 15th of December. The amount of rain that falls is astonishing; it has been given as 128 inches per annum. This, when compared with the small rainfall in Egypt of nine inches, where M. de Lesseps built his ditch through the sands of Suez, is suggestive.

When the rains come in early and regularly, it means a fairly healthy wet season, that is, of course, for the Isthmus. When the rains are irregular or late, it means a sickly season, and in the hot days between rains, yellow fever develops case after case. Then the rains come on, and there is a marked diminution in the number of cases. Again, after hot sunny days without rain, a new crop of yellow fever cases results. During the rains there are many storms of thunder and lightning. Some of these storms within the tropics are simply awful. During one particularly bad storm lightning was reported to have struck within the city five times and the crashes of thunder were deafening. I have seen that metallic appearance of the atmosphere, due to the immediate vicinity of lightning; and following a severe storm, have noticed the highly ozonized condition of the air, due of course to the electric currents. It was so noticeable as to be appreciable to the senses.

Following the advent of the canal men to the Isthmus on the 28th of February, 1881, they had their temporary
offices in a huge building facing the sea. It was near the old Aduana, or Custom House. Among the staff was an awfully jolly Frenchman, who was the farceur, or joker of the office. During one of these storms the lightning struck back of the building, and nearly opposite a window where he sat at his desk, while following it there was a terrific crash of thunder. A number of his fellow clerks rushed to that side of the building, thinking that it had struck near there, when their compatriot, the farceur, was found creeping on all fours towards the door or hallway. The lightning had struck within 150 feet of the building, and some of it had been playing over an iron fence near their office. It seems that he fell off his stool in a dazed condition, and commenced to creep off. That storm utterly ruined him as a joker, for his dignity was gone. While it is all very well to laugh at these things afterwards, at the time they are awful enough. Of course people are never afraid under such circumstances, but they do become intensely sociable and gregarious.

That storm developed another remarkable fact. A resident in that part of the city requested permission from the city authorities to put up a lightning rod. The matter was duly submitted to the Alcalde and council. They refused, stating that it would be dangerous to place a lightning rod there, as it certainly would attract the lightning. This is an absolute fact. There are no associations in that part of the world for the "Advancement of Science," or, for the matter of that, for the advancement of anything else.

The rain often seems to fall in solid sheets of water, the streets being flooded from curb to curb. Such storms clear away as rapidly as they come up, when the sun will light up the green and temporarily clean streets of Panama. Nearly eight months of the year are rainy months. Of course it doesn't rain all the time, but heavy rains may come on at any moment, and during these months all out-of-door work must temporarily cease. With the deep cuts on the canal they play sad havoc, as an immense amount of earth that has been
thrown out naturally washes right back into the cut. The canal company modestly estimate this at five per cent. Following one of these storms a deep cut on the Colon side of the divide was filled, covering the machinery and all. The long wet season on the Isthmus has been a most serious drawback to canal construction, but, as all know who are familiar with the early history of the Panama Canal, this practically was entered upon without any previous knowledge whatever, further than that there was an Isthmus to divide to reflect glory upon France and give unlimited dividends to bondholders. But of the Panama Canal more anon.

The dry season begins about December 15. By many it is considered the pleasantest season of the year; and it is the so-called healthy season. The majority of things are comparative in this world, as we know, and, as a witty actor in "Nadjy" has said, "Everything depends upon something else." It seems to be that way on the Isthmus. It will be well to bear in mind that neat division of the seasons by the Dean of the Medical Faculty at Panama. He said in the wet season people died of yellow fever in four or five days, while during the dry, or so-called healthy season, they died in from twenty-four to thirty-six hours of pernicious fever. If strangers do not recollect this, the seasons will.

The dry season at Panama is noted for cloudless blue skies—Italian skies,—and the grandest of tropical moonlight. During this period the starshine is grand, and the stars can be seen almost down to the horizon,—a fact noted by the early Spanish discoverers and chronicled by them in their many writings.* In my wanderings I never have found anything to compare with the moonlight of the dry season there. Reading large type in the open was possible.

What astonishes a stranger is that the Colombians do not take a great deal of out-door exercise. The women of the upper class are great stay-at-homes, and are almost perpetually in doors.

* "Life and Voyages of Columbus."
The early morning during the dry season is very pleasant for picnics, and for hunting parties. Owing to the excessive humidity there, the forests and hills are green all the year round—but greenest of course during the wet season. Early morning during a clear day in the wet season is particularly enjoyable. When the sun rises and the quaint old city of Panama is seen from the sea, it's background lights up and forms a most effective picture.

It almost seems as if Nature had provided herself with lightning rods in the palm trees. These large trees certainly seem to attract the electric fluid. In any locality where palms abound, particularly the lofty trees, one notes many trunks without a single branch above. When lightning strikes one of these magnificent trees the foliage falls away, and what was a most graceful tree becomes a mere whitish trunk. I have made careful inquiry about this in various places, and have had the fact confirmed repeatedly.

In a country like that, where all is perpetual summer, the average temperature about eighty, and the average humidity nearly as great, vegetation is of very rapid growth; and, apropos of humidity, there are places on the upper levels of the Isthmus where it nightly is 100°, the point of saturation. But these conditions make vegetable decomposition as rapid as the growth. The result of the whole is the creation of an intense misasmatic poison. People living on the Isthmus are all malarious, either in one form or the other, and it is impossible to avoid this. It is true that a few escape malaria while resident there, but they no sooner get into temperate climates than it develops. The sallow faces of a great many tell of paludal poison. My friend Dr. L. Girérd, late Chief Surgeon of the canal company, instituted a series of most interesting experiments. He examined the blood of new-comers—canal men—and found it in a perfectly normal condition. At the end of a month he examined it again, when he invariably found the malarial bacillus. He was a profound microscopist, and his work in connection with yellow fever was most credit-
able.* Regarding the latter he made a culture of its specific poison, or micro-organism, if you will, and inoculated himself, having a mild form of the disease. There is another factor that has a bearing on this subject of malaria on the Isthmus. It is the admixture of salt and fresh water in the lagoons and rivers in addition to the vegetable decomposition already referred to. This admixture of water is considered to be of great importance in creating intense forms of malarial poison, particularly on tidal coasts like that of the Pacific.†

The winds have a marked influence on disease, both at Panama and at Colon. Sometimes one side of the Isthmus will be fairly healthy, while the other has a lot of yellow fever; and then the converse obtains. South winds at Panama were considered by the natives as being unhealthy. The canal company have built houses above the malarial belt so called, where their workmen are safe; but where the malarial belt begins and ends, "is one of those things that no fellow can understand."

* "Paludism," Dr. Girérd, Paris, 1884.
† "Le Fievre Jaune"; Bellot, Havana.
CHAPTER XIV

VITAL STATISTICS—CEMETERIES—MODES OF BURIAL AND UNBURIAL—THE Isthmus CONSIDERED AS A DISEASE PRODUCING AND DISTRIBUTING CENTRE.

By vital statistics one understands reliable figures on the birth and death rates. Such are not obtainable on the Isthmus of Panama. There is a form of registration regarding births, which is sometimes published, and it goes to show that among the lower classes—that of the Juan and Maria type—from sixty to seventy per cent of the births are illegitimate. Absolutely accurate returns regarding the burials are difficult to obtain, as the great bulk go into the Colombian or Roman Catholic cemeteries. The foreign cemetery receives both Protestant and Roman Catholic. The Jews have a walled-in inclosure of their own, which is the best kept of all those on the Isthmus. The Chinese have one, beyond the Colombian, on the right of the road going towards the Boca.

The formalities attending the opening of cemeteries on the Isthmus are somewhat peculiar. Two I recall perfectly. When the Chinese cemetery was opened the leading Chinamen invited a lot of the government officials and citizens. I was honored with an invitation, and went out to the new burial ground. It was a bright clear day and there was a lot of ceremonial and beating of tom-toms for music within the inclosure. A roasted pig was exposed with other things, for the refreshment of the Chinamen who had got through with their business on the Isthmus and were supposed to be in the "sweet-by-and-bye." Following that the guests were driven into the city to a sumptuous entertainment. Between every two plates there was a bottle of champagne, and other wines were supplied as well. This
Bovedas, Panama Cemetery. Native Girl in Pollera.
opening of the cemetery was somewhat new to me as it was the first one that I had seen. Medical men are generally considered as being better at filling them. Apropos of that roasted pig, it was an uncommonly toothsome looking article. It was left out in the newly consecrated cemetery for a time only, when it was brought into the city. According to the custom of the Chinese these things are left to the departed, and if they fail to take advantage of their opportunities within four and twenty hours, the responsibilities of the living are at an end, and what was put there for the special delectation of John Chinaman "as was," is considerately partaken of by John Chinaman "as is." There is a clearness of reasoning about this Confucian theory that is very pleasing.

While I was on the Isthmus the new government cemetery was opened with great formality. From my knowledge of these places in the past, I inferred, that apart from consecrating the ground, nothing further was necessary, but some of my old time beliefs have been sadly upset by travel, and by measuring what little I knew by the great unknown. Late in July, 1884, a new cemetery with bovedas was opened, and the ceremony attaching to it threw the opening of the Chinese ground into the shade. This cemetery not only was consecrated, but there was a military guard present and a band of music, and no end of speeches were made. In fact, the whole thing took on a joyousness that was absolutely astonishing to a gringo, or foreigner. Important government functionaries were present, consular dignities were invited, and, in short, the city took on a holiday appearance. The enthusiasm regarding that new cemetery was something astonishing, and the only thing that surprised me was, that some individual did not promptly step to the front to contend for the honor of being the first buried. Between the opening, in July, 1884, and the 12th of April, 1886, when I made a special visit to the Isthmus, that cemetery had received 3884 bodies for burial in the ground, and several hundred had been placed in the stone niches, or bovedas. Not only had
the new cemetery been filled, but in a section of ground back of the cemetery, in what was part of a large field, there were some dozens of graves. The latter had been opened without any brass bands or government speeches, or any attendance of the consular corps.

The old cemetery was on the left. It was a small place of about three-fourths of an acre, and it received all the poorer classes and patients from the Charity and Military Hospital and the Canal hospitals. Owing to its small size it was dug up year after year; bones and skulls, fragments of coffins, clothing and all sorts of things were turned out. The liberation of untold millions of disease germs in that country, will make clear to thinking people why the Isthmus is so unhealthy. From time immemorial the Isthmus of Panama has been recognized as one of the plague spots of the world. It can vie with the west coast of Africa in pestilential disease. But for the fact that it is on one of the world's greatest highways between the Atlantic and the Pacific, the systematic unburial of the dead, under the direct sanction of the federal government (they do nothing to check it while knowing all about it), and the consequent distribution of the germs of yellow fever and small-pox, would be of little moment. I say "would be of little moment," for if the people of those republics are willing to commit suicide in that form, so be it. But, owing to the importance of the Isthmus, called by Paterson the "Gate to the Pacific and the Key to the Universe," these insane and unsanitary procedures should be stopped.

The practice that I have referred to regarding that old cemetery and the unburial of the dead came to an end for a time. Together with the late Mr. John Stiven, of Panama, I denounced the system through the columns of the Star and Herald, of Panama, and La Estrella de Panama. So vigorous was our language that it led to the construction of the new cemetery, and people interested in the matter of public health, hoped that that most pernicious of practices had ceased; unfortunately such was not the case. On the same side of the road adjoining the cemetery just mentioned, was The Ceme-
tery, a large quadrangle of bovedas. Facing the highway was a stone fence and an old time arched gateway of stone. Entering it, one had a full view of what was within. It was a quadrangle of niches or bovedas. Picture to yourself four sides of a square having three tiers of openings in them, one below, one between, and one on top, each opening being large enough to receive the coffin of an adult, and the whole whitewashed and backed by a substantial stone wall. Within the enclosure were several monuments to some people who had been buried permanently. I used the word "permanently" advisedly. The exact custom which obtains there is as follows. These niches are rented for the space of eighteen months. The coffin is placed within, and the end is closed either with brick work or with a marble slab having a suitable inscription. At the end of eighteen months, failing a prompt renewal of rent, the coffin and contents are evicted. The eviction is of the most thorough type; it would put an Irishman "to the pin of his collar." The individual holding the concession has his men working within the grounds. If the rent has not been renewed; they remove the little marble slab or brickwork and the coffin is taken out and dumped back of the cemetery. Such was the custom prior to our denunciation of that form of unburial of the dead. In the fall of 1882 I made the acquaintance of a special correspondent of the *Brooklyn Eagle*, who had seen much in many places and under many circumstances. I promised to show him something that, I took the liberty of thinking, he had not seen previously. He was a pushing, vigorous fellow, and willing to go anywhere and see anything, as long as it gave him some descriptive matter for his paper. I took him back of the cemetery now under consideration and directed his attention to seven and sixty coffins, in all sorts of positions and with all sorts of contents. My readers will be kind enough to remember that the people who are buried in the bovedas invariably belong to the better classes. I took him about among the broken coffins, and the whole coffins, and the skulls, and the bones and the ashes, and
everything else. There they were, just as they had been thrown out. In the great majority of cases the lids of the coffins were off, or had been broken, and within were the restos, or remains, of former prominent citizens, the majority of whom, of course, were natives. In one coffin were the remains of a woman, and she had had a magnificent head of hair. I must say that the entertainment rather upset the Brooklyn Eagle man, and he was unwilling to stay and hear more about it. The fact that I had made a good collection of crania which I had sent home to Canada, ceased to interest him, and he was very glad to get away from the place, admitting that he never had seen the like.

I do not wish my readers to fancy that all are absolutely devoid of respect for the remains of their friends. In a few instances the dead had been permanently located in these niches; in others the bones had been taken away and placed in some of the churches. It is customary there, after the eighteen months have expired, to take the long bones and the skull and have them buried in some of the churches, either under the floor with a suitable slab, or built into some wall or column. In a very few instances they are buried in small lots in a suitable enclosure, with a monument or tombstone over them.

This is what obtained in the native cemeteries, and I regret to say obtains now.

In the Foreign Cemetery, in the Jewish Cemetery, and the Chinese Cemetery, there are no unburials of this revolting type. The only unburials there are, are such as obtain elsewhere throughout the world when bodies are sent home to friends. A peculiar thing regarding this business is that according to the laws of Colombia nobody can be disinterred under twenty-four months. But the Concessionaire is a law unto himself and he unburies at his own sweet will. I can remember cases where people abroad were most anxious to have the remains of their relatives that had been buried on the Isthmus sent to them, in one instance to San Francisco, in another to New York; but the law in their cases was
law, and the bodies could not be removed until the twenty-four months had expired. In the meanwhile the individual holding the concession from the government buried and unburied at his pleasure.

As already stated, it was hoped that when the new cemetery was opened the disgraceful scenes of the past were over forever, but such has not been the case. The present Concessionaire is (or was) Senor Nicanor Obarrio, who holds a direct concession from the government, and he it was that had the new cemetery built under that concession. As I have already informed my readers, it had been more than filled between the dates given. While on the Isthmus during March, 1888, I went out to see how things were in the new cemetery, and you can fancy my astonishment at finding that all the numbers on the graves had been doubled. That large plot had been filled and over each grave was a simple wooden cross, painted black. Above was the number of the year, "1884," and on the arm of the cross the number of the grave. As I have said all the numbers had been doubled. For instance, you would have, say, "3640" on the arm of the cross, below that "1888" and above it in a scroll "1886." The wherefore of it was as follows: In 1886, 3640 was the first occupant, but, as that cemetery had been dug over from end to end, he had been evicted, and twice 3640 was the number of the grave in 1888. Not only were all the numbers in that main cemetery duplicated but they were digging over the cemetery at the back.

I am fully aware of the fact that this seems a remarkable statement, so remarkable indeed that when relating it to some new acquaintances in the British Islands of Trinidad, they looked at me with that polite incredulity that seemed to indicate that they thought that much travelling had not improved my veracity; and it was only when I produced some photographs, there and then, showing the graves with the double numbers, and the digging up of the old graves, that they could believe me. One of my photographs was a revelation to them. In digging up these graves the diggers occasionally came
upon a coffin that was in fairly good order. A number of these had been placed upright, leaning against the back wall of the cemetery. These second-hand coffins were for sale to any one who wanted a luxury of that kind. But for the fact that I had my photographs with me, I feel confident that my statements would not have been accepted as true. But there they were; there was the row of coffins, the double numbers on the crosses—"1886" above and '1888" below.

Now from a sanitary standpoint, what does all this unburial result in? It results to my mind, if I understand anything about this matter, that from this criminal practice of liberating untold millions of germs of disease the Isthmus is made a disease-producing and disease-distributing centre.

I particularly wish to emphasize this statement, and shall do so in this way. That Colombian cemetery receives nearly all of the dead from the Canal Hospitals. An immense number of the deaths among their men is from specific yellow fever, properly so called. As that is a land of perpetual summer, perpetual sunshine, and perpetual moisture, these germs when liberated find a congenial soil. As the yellow fever germ is one that flourishes at a temperature of seventy-two, and, as the average temperature is 80°, it goes without saying that these germs never die out there. Another fact in this connection. Small-pox never is absent in those countries. From time to time there are outbreaks, and two years ago, following the unburial of the dead in the cemetery that I am now describing, there was one just beyond the cemetery at La Boca de la Rio Grande, and there were a great many deaths. My readers must bear in mind that thousands are unburied there annually to this very day and this very hour.

While I was at Panama a number of foreign physicians tried to bring about a different state of affairs. We wrote letters to the press. While the attempt exposed the situation and its dangers, no good came of it. The series of letters to which I make reference was published in the Star and Herald by George E. Gas-
coigne, M.D., C.M., M.R., C.S., England, Benjamin Stamers, L. R. C. P. & S., Edinburgh, and the writer. As I have already stated, if people wish to commit suicide, from a practical standpoint, let them do it; but let them do it in a way that will not endanger others.

My readers will at once appreciate the danger to all countries doing business with the Isthmus of Panama, or by way of the Isthmus of Panama, as hundreds of thousands of packages of freight cross the Isthmus from the Pacific to the Atlantic and from Atlantic to Pacific, and are distributed in all directions, even to trans-Pacific ports. That these packages are the bearers of disease is well known. The west coast of the Republic of Mexico owes the endemic presence of yellow fever to the Isthmus of Panama, and all students of that awful disease are well aware that it was by way of the Isthmus that it was distributed up and down the coasts of Central and South America, in many of the ports of which it is permanently domiciled. It is quiescent at times, if you will, but when the suitable conditions obtain, with an unacclimated population, it asserts its sovereignty.

I have shown how physicians vainly endeavored to bring about a reform. Certain it is that nothing can be expected of the government of the Republic of Colombia as at present constituted.

There is but one way of handling these things. It is by international pressure. We are all aware of the fact that when a small power in Europe is likely to disturb the peace, its neighbors say, "We will have none of it," and that is the end of it. Now there is a power controlling one of the world's greatest highways, and while it absolutely depends upon other countries for its traffic, it is a disease producer and a disease distributor.

To prevent the slightest mistake in connection with this statement I refer my readers to the Report of the board of health of the State of Louisiana, for the year 1882 and the first six months of 1883. On pages 239, 240 and 241 will be found a long letter from Dr. Daniel Quijano Wallace, then president of the board of health of the
State of Panama. It was in reply to a letter from Dr. Joseph Jones, then president of the board of health of the State of Louisiana, in which he regrets the deficient organization of the sanitary service of the State of Panama. In the eighth paragraph of that long letter, President Wallace speaks as follows:

"It is sad to confess that of the thirty-three powers represented at the sanitary conference in Washington, Colombia was the only nation that had no sanitary service properly organized, and that did not officially register and publish the prevailing diseases, the death rate and information relative to public health."

At the close of paragraph two is the following:

"I communicate that the actual sanitary condition of the ports of Panama and Colon is in general good, as at present no epidemic disease reigns, it being well known that small-pox, the yellow fever and the paludal fevers, in their infinite varieties and forms, never are absent in these intertropical regions where they are truly endemic."

"Comuníqueseles que el estado sanitario actual en las puertos de Panama i Colon es por lo jeneral bueno, pues no existe al presente epidemia reinante ninguna, siendo como es conocido que la viruela, la fiebre amarilla i las fiebres palustres, en sus infinitas variedades i formas, nunca faltan en estas regiones intertropicales en donde son verdaderamente endémicas."

I give both the original Spanish, as published in that report, and the English, that there may be no doubt in the minds of my readers as to the oft repeated statement regarding the insanitary condition of the Isthmus of Panama. Dr. Quijano Wallace is a Colombian by birth, a man of excellent education, and we served on the State board of health jointly for a time. You will be kind enough to remember that a son of Colombia makes the above statement. The date of Dr. Wallace's letter is, Panama, October 13, 1882.*

* See also Ninth Biennial Report of the State Board of Health of California, page 220, et seq.
Apropos of yellow fever and epidemics, the following statement will be somewhat interesting:

"In September, 1884, the harbor of Colon was full of shipping. The latter became infected; the Effecthia, a brig, lost all her crew but the cook. Two French steamers of La Compagnie Generale Transatlantique, named the N. Bixio, and the Fournel, lost twenty men. The Royal Mail steamers Larne, and Nile, also lost a few between September and January, 1885. One hundred and seventy cases had occurred there, with a mortality of over two-thirds. I saw the records when in Colon, in February, 1885. I visited Colon purposely to see things for myself. The English ship, the City of Liverpool, had six cases on board. She was at the dock, and within twenty feet of her stern was a large pile of rock-ballast from Bohio Soldado, being that sold by the Panama Railway to all vessels requiring it. The Grace Bradley, an American three-masted schooner, was in the berth next to the City of Liverpool. She had discharged her cargo of ice and was taking in the ballast. Two of her crew sickened with the disease and died. She sailed for a southern port, United States of America, with a foul bill of health from United States Consul R. K. Wright, Jr., of Colon. She arrived at a Southern port late in the fall, discharged the ballast on flat cars that dumped it into the sea, and proceeded direct to Philadelphia. This infected ballast some day will speak louder than words to the people of the South. It comes from an infected port. Ballast of this kind caused three cases of yellow fever in New Orleans, in 1882. The ballast was thrown on a street there." *

I have reprinted the above from one of my articles on yellow fever; my object in doing so being to illustrate the value of some bills of health issued to the shipping by the civil authorities on the Isthmus. The Fournel, the vessel referred to, lost her captain and nine or ten men. They wished to clear her and applied to a doctor

*Yellow Fever in Vera Cruz, and Colon in 1882; "New Orleans Medical and Surgical Journal," 1884.
in Colon, personally known to me, and he issued a foul bill of health. The steamship company would not accept it, but referred the matter to the general agent in Colon. He in turn approached the government, the then acting president issued a clean bill of health, and the vessel went to sea from a hot-bed of the disease.

In the month of September, 1884, the Canal Company buried 654 officers and men. Perhaps a day may be coming when cremation may be introduced on the Isthmus of Panama, and it would be an effectual way of getting rid of such disease producing bodies. The disposal of the dead has been attracting the attention of scientists for some time past, now that graveyards and cemeteries are recognized sources of disease, particularly within the tropics. In the January number (1888) of the "Nineteenth Century" there is a paper of considerable value on this very theme, by Sir Henry Thompson, from which I shall briefly quote:

"Medical and physiological science too, is daily diving deeper into the cause and origin of disease, and modern discoveries tend to show that infectious diseases, and especially those which are distinguished as zymotic, are due to minute organisms, to which the names of microbes or bacteria, or the more general term of germs, have been given, and which have a force and vitality capable of resisting many agencies destructive to ordinary life and even bidding defiance, under favorable circumstances, to the all-conquering power of time itself. It has been clearly proved that these organisms, so far from being destroyed or rendered harmless by the burial of a body, the life of which has been destroyed by them, flourish exceedingly on the products of decomposition and putrefaction, and may at any time be brought to the surface and again set free on their devastating course, by the action of earthworms or by any other cause that may disturb the soil.

"This is particularly the case with splenic fever, germs of which will even affect the grass, growing over the buried bodies of cattle that have died from it, and
will infect any living animal that feeds upon this poisonous herbage. Malarious fevers, and especially Roman fever, so fatal in the Italian marshes, are well known to be due to bacteria which exist in the very soil itself; and it is generally believed by scientific men who have made infectious diseases a study, that scarlet fever, typhoid fever, small-pox, diphtheria, malignant cholera, and many kindred diseases, are communicable from the decomposing remains of persons who have died of these disorders and been buried in the customary manner.

"None can deny that in a purely sanitary sense, cremation offers the most perfect method of disposing of the dead.

"The objections to it, indeed, are of a purely sentimental character and will not for a moment bear the attack of calm argument, while the religious objections can only be upheld by the narrowest bigotry and most stupid superstition."

"In the ordinary method of disposing of the dead, that of burial, nature resolves the human body into its original element by the slow decomposition of putrefaction. This process is often delayed far beyond the natural period, which is itself long, by unwise and morbid efforts to preserve the inhumed body as long as possible, by encasing it in air and water tight envelopes of various substances. The Egyptians, as we know, carried this to its extreme in the embalming of their dead so effectually as to preserve their withered human tenements for thousands of years. Surely, to a refined imagination, the tedious process of putrefaction of a person who has been dear to us, is far more loathsome and abhorrent than the idea of a rapid decomposition of its constituents by the agency of fire. This decomposition is just as natural as that of putrefaction. In both cases the elements composing the human body are liberated and become free to form fresh combinations in the ever active laboratory of nature, but in the one case, this is a process extending over years, and in the mean time spreading disease and death among the earth's inhabitants; and in the other, the aid of science, the handmaid
of nature, enables us to distribute the elements of the poor human body, and utterly to destroy dangerous germs, in the course of an hour's incineration.

"One very serious objection and one worthy of every consideration is, that the total destruction of a human body by fire, would remove every trace of crime in a case of poisoning, and that the murderer would have no dread of the silent accusing witness that could be called up by the chemist's skill, to confront him from the buried body of his victim. Cases of exhumation of bodies for chemical examination are, however, very rare, and proper legal safeguards and official examination and certification in cases of suspicion, before the body was committed to the furnace, should afford ample protection to society.

"The religious objections, or rather the objections based upon religious grounds, are hardly worth the trouble of combating. No intelligent person can suppose for one moment that the intentions of the Almighty can be in any way obstructed by hastening by a few years the process of decomposition.

"When it is considered that the health and happiness of the living depend so greatly upon the proper disposal of the dead, when it is seen that, in the neighborhood of all large centres of population, the overcrowded cemeteries and graveyards are ever increasing sources of difficulty and danger to the community, and when the education and intellectual development of the present age are so rapidly freeing the mind from superstition and opening it to the truths of science, few will deny that the advocates of the cremation of the dead have both moral and scientific truth on their side.

"It will be very long before many centuries of custom will give way before scientific truth, but the day must come when mankind will be forced by dire necessity, to resort to a method of disposing of the dead, more in accordance with well ascertained laws of hygiene, than the present mode of inhumation."

That the idea is, even now, making headway, is clear from Sir Henry Thompson's statement in his paper, that
in Italy alone, since 1883, 787 bodies have been cremated in different cities, while in Germany, in the same period, 473 bodies have been thus disposed of.

As an old and earnest student of all matters pertaining to public health, I sincerely trust that the press of this great republic will take this matter up, and keep on agitating, and agitating, until the public is thoroughly familiar with the dangers constantly menacing it from sources like the Isthmus of Panama. I refer of course to the danger of yellow fever and small-pox, but particularly to yellow fever with reference to the Southern United States. If an argument were necessary to make my statements conclusive and final, I simply have to point to the epidemic of yellow fever that has been sweeping a part of the State of Florida, an epidemic whose history dates back to Tampa, and the limited epidemic there last summer and fall. That outbreak was traced to a schooner engaged in, smuggling; and previously thereto some filthy passengers from Havana—wandering Turks—had landed in Tampa before the quarantine season began, and one of them died in Plant City. I visited Tampa in the fall of last year, purposely to study all the conditions pertaining to and surrounding that epidemic, and, thanks to my friends, Dr. John P. Wall, president of the Tampa board of health, and Dr. Joseph Y. Porter, president of the board of health of Key West, then in charge of the yellow fever hospital in Tampa, I had every facility given me for seeing existing cases and convalescents. It was yellow fever properly so called. Drs. Wall and Porter had had the courage to pronounce the disease yellow fever, and met with bitter and vile persecution. It is the usual thing that obtains under such conditions, but when there was a grand explosion of the disease and an epidemic was sweeping the city, the very men who were criticising them, fled the city and left them to fight the disease. The feeling against Dr. Wall, who is a profound student of yellow fever and who can speak from the knowledge of several epidemics of it, was most bitter; in fact, so bitter that I, an outsider (a British subject), thought it
well to write an article which was published in the *Times-Union* of Jacksonville, of last year, confirming his views as to its being yellow fever, and also warning the South against the very condition which exists to-day in Jacksonville.* The letter that I refer to was published in the *Times-Union* of November 30, 1887, and it closed as follows:

"Let the people of this fair State be true to their best interests and awake to instant action—in a word, prepare for what assuredly awaits them next summer."

I noticed the condition of things there, and knowing that Tampa was below the frost line made the above forecast, which, alas! came true. I take no credit to myself in this connection, further than that I, in common with many men who have given this subject close thought and study, know that the disease not only is essentially a portable disease, but it is a quarantinable disease, one that can be shut out of towns and cities by the exercise of scientific quarantine as it is understood by sanitarians to-day. I mean such a quarantine as that perfected by Dr. Joseph Holt, president of the board of health of the State of Louisiana. I should like to have laymen turn this matter over in their own minds and think it out, and try to bring about a change. Any student of yellow fever will tell you that its introduction to-day is a disgrace to our modern civilization. Science teaches that it can be shut out. If so, why admit it, to sweep away hundreds, and, in a State like Florida, inflict damage that cannot be counted in money, when it may be the beginning of an epidemic in the South?

In the *New York Herald* of September 28, 1888, there was a telegram from Washington, dated the previous day and reading as follows:

"Senator Call introduced a joint resolution in the Senate to-day authorizing the President to call upon the Academy of Sciences to convene in the city of Washington at as early a day as practicable, and that the President shall select and request the attendance of such per-

* Written during the yellow fever epidemic of 1888.
sons of the different schools of medicine, and of such other persons as may be distinguished for their attainments in science and natural research, to take evidence, examine into and report upon all methods that shall be submitted to them for the cure, prevention and suppression of yellow fever and other contagious and infectious diseases, and to invite the attendance of men eminent for learning and attainments in science and natural research from foreign countries."

To convene a congress to examine into health measures for the cure of yellow fever and the like is admirable. I may state here that I am a firm believer in the protection given by inoculation for yellow fever, and scientific work in that direction is growing up towards a plane where this will be accepted by the public at large. Inoculation will do for tropical countries. There is no reason—absolutely no good reason—why portions of this great country should be swept by disease. If that meeting of sanitarians in Washington will bring about some legislation that will lead to the suppression of the practices that obtain on the Isthmus (being those described at length), and almost identical practices in the island of Cuba, much more will have been attained, and the reproach of yellow fever will be of the past. Yellow fever is as much a disgrace to-day to a civilized community, as an epidemic of small-pox, because an epidemic of either one or the other is an indication of an absolute neglect, which in this age of civilization and scientific investigation is absolutely unpardonable.
CHAPTER XV.


Perhaps the best way of giving my readers an idea of the commercial importance of the Isthmus of Panama will be by referring to some of the steam companies connecting with it. Those at Colón, or the Atlantic side of the Isthmus, are the Royal Mail Steam Packet Company, the French Transatlantic Company, the Pacific Mail Steamship Company, the Hamburg-American Packet Company, the Atlas Steamship Company, the Harrison Line, and the West India and Pacific Steamship Company. Quite apart from these regular lines, a large number of tramp steamers make the Atlantic port upon the Isthmus, with a great many sailing vessels. The steam companies on the Pacific side of the Isthmus are the Pacific Steam Navigation Company, already referred to in connection with the Island of Moro, the Pacific Mail Steamship Company, and a new South American line that has just inaugurated a regular service between the Isthmus, Ecuador, Peru, and Valparaiso. This latter line I believe is an opposition line to the old Pacific Steam Navigation Company. It will be seen that some powerful steam carriers make both ports of the Isthmus terminal points. To return to the Atlantic side. The Royal Mail Steam Packet Company have an immense service, for their steam lines connect the Isthmus of Panama with ports in Colombia, Venezuela, the West Indian Islands, and Southampton. From the latter port they also have a line by way of the Cape de Verde Islands to Pernambuco, Bahia, Rio de Janeiro and Montevideo. They also have cargo boats plying between
For Sale! Second-hand Coffins, Panama Cemetery.
all the ports named through the West Indies and to Greytown in Nicaragua, as well as their intercolonial boats in the West Indies. Next in importance is the French Transatlantic Company, whose vessels sail from St. Nazaire, Havre and Marseilles, in France, and Santander, in Spain, touching at the French West Indian Islands, and making the Isthmus. That line likewise has cargo boats, and they do an enormous business. Then there is the Hamburg-American Packet Company, a well organized and substantial corporation, whose traffic in the West Indies has been built up from almost nothing into a huge service, keeping seventeen vessels busy. There can be no question among those who have had opportunities for observing—if they are willing to state the exact facts—that this latter corporation, owing to the great regularity of its service and the fact that it costs them less to maintain it, has made huge inroads into the carrying business of the other companies. And another fact in this connection which is important is, that they are always willing to meet shippers. Their vessels are substantially built; many of them, as in the French line, are English and Scotch. The West Indian and Pacific Steamship Line and the Harrison Line practically are one for all purposes of business, and sail alternately from Liverpool for ports in Venezuela, Colombia, and the Isthmus, thence by way of some Central American and Mexican ports to New Orleans, where they receive homeward cargoes of cotton. In my introductory chapter I referred to the Pacific Mail Steamship Company and its excellent service on both oceans. It is a direct line from New York City to the Isthmus. In times past it made Jamaica. The Atlas Steamship Company, an English corporation, dispatches vessels from New York through the West Indies to the coast of Colombia and Colon. This line likewise does a very large intercolonial business. On return trips they make some of the Central American ports, and Jamaica and Hayti, if I recollect rightly.
These are the important steam carriers discharging and receiving cargo and passengers at Colon. On the Pacific side of the Isthmus we have the Pacific Mail Steamship Company, with their through lines to San Francisco, via Central American and Mexican ports, and their Central American service. This company has a line to China and Japan from San Francisco. It does a very large business and practically has a monopoly of that Central American and Mexican trade. Prior to four years ago it controlled the carriage of coffee when the rate to the Old Country via the Isthmus, if I remember rightly, was six pounds per ton. Of course all that coffee had to cross the Isthmus of Panama, and the Panama Railroad Company, which carried it forty-seven miles, it is said, received exactly one-half of that sum for its share, leaving the other carriers three pounds per ton. As stated, prior to four years ago, the Pacific Mail had the monopoly. At that time the Kosmos Line of steamers were dispatched from Hamburg with outward cargoes for ports in Chili, Peru and Central America. There they contracted for return cargoes of coffee at four pounds, ten shillings per ton. The line has built up, or had built up when I was last in Central America, a most substantial business, and was carrying at least one-half of the whole coffee crop, and the prospect seemed to be that all going to Europe ultimately would fall into its hands. Shippers and merchants with whom I talked seemed to have substantial reasons for sending it that way. The coffee was loaded at the ports of Central America, carefully stowed, and went through the Straits of Magellan direct for ports in Europe, thus avoiding the repeated handlings at Panama. At first the opposition of the Kosmos Line was made little of, but it soon became a very formidable competitor. German companies can manage their lines for far less money than the English lines, and it is a well known fact that the English lines cost less than the American. As the coffee crop of Central America is estimated at upwards of one million of sacks, this shipping direct forms a considerable item and naturally affects the receipts of the Panama.
Railroad Company. Coffee on reaching Colon was distributed to the various agents of consignees in that port, some going to France, some going to the London market, some to various ports on the Continent, some to New York, and a little to New Orleans. Within the last twenty-four months the Marquis de Campo put some of his fine Spanish boats in the trade between Panama and San Francisco, but the venture was not a success, and they have been withdrawn. From the Isthmus southwards towards Ecuador, Peru, Chili, and the Straits of Magellan, the Pacific Steam Navigation Company and the new company control all that trade. These are feeders on their return to the Panama Railroad. That railroad company has done, and still does, an enormous business. Hundreds of thousands of packages of all sorts of goods cross the Isthmus from the Atlantic to the Pacific and from the Pacific to the Atlantic, and, if the information given me at various times is accurate, the Panama Railroad reaps the cream of the business, in that it receives one-half of the whole price charged for carrying freight forty-seven miles.

Sailing vessels frequently make the Gulf of Panama and the port, but they bring cargoes chiefly for local consumption. Large quantities of whale oil and whalebone cross the Isthmus from the whaling fleet that I have already alluded to. By reference to the map that accompanies this book, the geographical and commercial importance of the Isthmus will be apparent.

Colombia exports a considerable quantity of mahogany, fustic, cedar, dye-woods, sarsaparilla and other medicinal plants. The produce of its mines is gold, silver, a little platinum, copper, iron, lead, and a few precious stones, but some of the latter of considerable value. In an earlier chapter I have referred to its excellent tobacco. It also exports cocoa, a little indigo, a large amount of vegetable ivory, and its export trade of bananas from the Isthmus is very large indeed. The principal items of export are cinchona, tobacco, balsam of tolu, hides, rubber, and the precious metals. This list of course does not include the exports of Mexico,
and Central and South America, on the Pacific, which cross the Isthmus at Panama.

Mr. August Strunz, Consul for Austria in Barranquilla, annually issues a sheet giving the exports from that section of Colombia on the Atlantic. From this I find that the total annual value of produce and treasure by way of the Magdalena River at Barranquilla is $7,744,185, and the exports to the various ports in 1887 were as follows: London received 23 packages of balsam, 1189 packages of cinchona bark, 11 packages of bird skins, 5 packages of cigars, 206 packages of cocoa, 14,404 packages of coffee, 1354 packages of loose hides, 1029 packages of ivory nuts, 544 packages of mineral, 1583 packages of plants, 1286 packages of rubber, 8 packages of sarsaparilla, 35 packages of sundries, 991 packages of tobacco, 2400 packages of plants, 1286 packages of rubber, 2400 fustic logs; total number of packages, 25,068. Total weight in kilograms, 1,420,030. Total value of produce, $489,795. Total value of produce and treasure to the city of London, $2,630,058.

Liverpool received 3 packages of balsam, 212 packages of cinchona, 1 package of bird skins, 245 packages of coffee, 91 bales of cotton, 1329 packages of cotton seed, 20 packages of dividivi, 174 bales of goat skins, 142 loose hides, 2045 packages of ivory nuts, 37 packages of rubber, 2 packages of sundries, 28,741 fustic logs. Total number of packages, 33,042. Total weight in kilograms, 1,160,940. Total value of produce, $51,810.

Swansea, in Wales, received 4321 packages of mineral. Total number of packages, 4321. Total weight in kilograms, 259,260. Total value $129,630.

In France, Havre received 6 packages of balsam, 1 package of bird skins, 3 packages of cigars, 12 packages of cocoa, 5535 packages of coffee, 247 bales of cotton, 2104 of cotton seed, 314 bales of goat skins, 2376 loose hides, 72 packages of minerals, 3 packages of plants, 171 packages of rubber, 24 packages of sundries, 11,053 fustic logs. Total number of packages, 21,921. Total weight in kilograms, 927,260. Total value of produce, $157,216.

Paris received 52 packages of balsam, 1 package of

Bordeaux received 76 packages of coffee, 242 packages of ivory nuts, 445 fustic logs. Total number of packages, 763. Total weight in kilograms, 34,850. Total value of produce, $2,952.

Bremen, in Germany, received 34 packages of balsam, 51 packages of cinchona bark, 2 packages of cigars, 777 packages of coffee, 1591 loose hides, 8687 packages of ivory nuts, 3 packages of rubber, 21 packages of sundries, 23,560 packages of tobacco, 8868 logs of fustic. Total number of packages, 43,594. Total weight in kilograms, 2,592,620. Total value of produce, $547,739.

Hamburg received 28 packages of balsam, 300 packages of cinchona bark, 5 packages of cigars, 105 packages of cocoa, 7260 packages of coffee, 1 package of cotton seed, 227 bales of goat skins, 2332 loose hides, 5088 packages of ivory nuts, 79 packages of mineral, 54 packages of rubber, 574 packages of sundries, 1087 packages of tobacco, and 19,076 fustic logs. Total number of packages, 36,216. Total weight in kilograms, 1,547,950. Total value of produce, $247,634. Total value of treasure, $3,971. Total value of produce and treasure, $251,605.

New York received 283 packages of balsam, 3618 packages of cinchona bark, 38 packages of cocoa, 52,570 packages of coffee, 620 bales of goat skins, 186,106 loose hides, 368 packages of ivory nuts, 1033 packages of mineral, 286 packages of plants, 1334 packages of rubber, 12 packages of sarsaparilla, 93 packages of sundries, 7269 logs of fustic. Total number of packages, 253,630. Total weight in kilograms, 5,748,610. Total value of produce, $2,272,844. Total value of treasure, $73,632. Total value of produce and treasure, $2,346,476.
The West Indies received 3 packages of cigars, 107 packages of cocoa, 437 packages of coffee, 89 packages of hats, 259 packages of sundries, 890 packages of tobacco. Total number of packages, 1785. Total weight in kilograms, 115,970. Total value of produce, $85,655. Total value of treasure, $14,173. Total value of produce and treasure, $99,828.

Exports to Carthagena, Colombia, were 146 packages of plants. Total number of packages, 146. Total weight in kilograms, 7300. Total value of produce, $4,380. Total value of treasure, $2,192. Total value of produce and treasure, $6572.

Colon, Colombia, received 21 packages of balsam, 24 packages of cigars, 157 packages of coffee, 1180 packages of sundries, 783 packages of tobacco, 8038 railroad cross ties. Total number of packages, 10,203. Total weight in kilograms, 941,290. Total value of produce, $51,536. Total value of treasure, $712,638. Total value of produce and treasure, $764,174.

Spain received 5 packages of bark, 1 package of bird skins, 2 packages of cocoa, 9 packages of coffee, 273 loose hides, 2 packages of ivory nuts. Total number of packages, 292. Total weight in kilograms, 3880. Total value of produce, $2,355. Total value of treasure, $1,100. Total value of produce and treasure, $3,455.

Recapitulating these and adding the totals, there were: number of packages of balsam, 450; of cinchona bark, 5,376; of bird skins, 25; of cigars, 42; of cocoa, 493; of coffee, 82,753; number of bales of cotton, 338; number of packages of cotton seed, 3434; of dividivi, 20; 1335 bales of goat skins; 89 packages of hats; 202,226 loose hides; 17,526 packages of ivory nuts; 6331 packages of mineral; 2026 of plants; 3266 of rubber; 20 of sarsaparilla; 2233 of sundries; 27,311 of tobacco; 77,852 logs of fustic; and 8038 railroad cross ties. Total number of packages, 441,184.

Weight in kilograms: of balsam, 27,000; of bark, 322,560; of bird skins, 1250; of cigars, 2100; of cocoa, 29,580: of coffee, 4,965,180; of cotton, 67,680; of cotton seed, 240,380; of dividivi, 1000; of goat skins, 80,100; of hats,
5340; of hides, 2,022,260; of ivory nuts, 1,226,820; of mineral, 379,860; of plants, 101,300; of rubber, 326,600; of sarsaparilla, 1200; of sundries, 133,980; of tobacco, 1,911,770; of fustic logs, 2,335,560; of railroad cross ties, 803,300. Gross total weight, 14,985,240.

Total of values: balsam, $27,000; bark, $268,800; bird skins, $12,500; cigars, $6,300; cocoa, $12,325; coffee, $1,655,060; cotton, $16,900; cotton seed, $3,434; dividivi, $20; goat skins, $26,700; hats, $53,400; hides, $1,011,130; ivory nuts, $87,630; mineral, $189,930; plants, $60,780; rubber, $81,650; sarsaparilla, $600; sundries, $22,330; tobacco, $546,220; fustic logs, $38,926; railroad cross ties, $16,076. Gross total value of produce, $4,137,711. Gross total value of treasure, $3,606,474. Gross total value of produce and treasure, $7,744,185.

The Colombian dollar is not equal to the American dollar, and its value depends upon the rate of exchange. The latter sometimes is twenty-five to thirty, and sometimes even thirty-five.

Taking up the exports by steamers from 1873 to 1887, they are as follows:

For the year 1873 the number of packages was 266,289; number of tons of wood, 731; weight of packages and wood in kilograms, 14,198,560; the value of produce, $4,935,340: value of treasure, $2,781,397. Total value of produce and treasure for 1873, $7,716,737.

The exports by steamers for 1874 were as follows: number of packages, 296,399; number of tons of wood, 567; weight of packages and wood, in kilograms, 16,255,136; value of produce, $5,323,699; value of treasure, $3,441,087. Total value of produce and treasure for the year 1874, $8,764,786.

For the year 1875 the exports by steamers were as follows: Number of packages, 313,302; number of tons of wood, 1,369; weight of packages and wood in kilograms, 16,788,480; value of produce, $5,144,910; value of treasure, $3,937,130. Total value of produce and treasure, for the year 1875, $9,082,040.

For the year 1876 the exports by steamers were as follows: Number of packages, 215,937; number of tons of
wood, 1,225; weight of packages and wood in kilograms, 11,169,790; value of produce, $3,091,614; value of treasure, $2,893,626. Total value of produce and treasure, for the year 1876, $6,885,240.

The exports by steamers for the year 1877 were as follows: Number of packages, 230,509; number of tons of wood, 572; weight of packages and wood in kilograms, 11,229,390; value of produce, $3,672,100; value of treasure, $3,128,045. Total value of produce and treasure for the year 1877, $6,800,145.

For the year 1878 the exports by steamers were: Number of packages, 328,928; number of tons of wood, 845; weight of packages and wood in kilograms, 14,398,950; value of produce, $5,084,405; value of treasure, $3,839,766. Total value of produce and treasure for the year 1878, $8,924,171.

In the year 1879 the exports by steamers were: Number of packages, 338,764; number of tons of wood, 860; weight of packages and wood in kilograms, 15,258,380; value of produce, $6,077,317; value of treasure, $3,272,168. Total value of produce and treasure, for the year 1879, $9,349,485.

For the year 1880 the exports by steamers were: Number of packages, 390,360; number of tons of wood, 1,085; weight of packages and wood in kilograms, 15,862,550; value of produce, $6,309,287; value of treasure, $3,137,653. Total value of produce and treasure, for the year 1880, $9,152,218.

The exports by steamers for the year 1881 were as follows: Number of packages, 423,342; number of tons of wood, 1,085; weight of packages and wood in kilograms, 15,882,550; value of produce, $9,055,669; value of treasure, $3,343,940. Total value of produce and treasure, for the year 1881, $12,399,609.

The exports by steamers for the year 1882 were: Number of packages, 412,520; number of tons of wood, 1,284; weight of packages and wood in kilograms, 15,624,600; value of produce, $8,357,402; value of treasure, $3,137,653. Total value of produce and treasure for the year 1882, $11,395,055.

The exports by steamers for the year 1883 were: Num-
ber of packages, 550,652; number of tons of wood, 5,838; weight of packages and wood in kilograms, 20,199,750; value of produce, $6,999,955; value of treasure, $3,951,126. Total value of produce and treasure for the year 1883, $10,951,081.

For the year 1884 the exports by steamers were as follows: Number of packages, 421,886; number of tons of wood, 887; weight of packages and wood in kilograms, 13,856,220; value of produce, $6,194,092; value of treasure, $4,352,276. Total value of produce and treasure for the year 1884, $10,546,368.

For the year 1885 the exports by steamers were: Number of packages, 151,071; number of tons of wood, 59; weight of packages and wood in kilograms, 5,029,580; value of produce, $1,593,235; value of treasure, $2,214,616. Total value of produce and treasure for the year 1885, $3,807,851.

For the year 1886 the exports by steamers were as follows: Number of packages, 407,759; number of tons of wood, 664; weight of packages and wood in kilograms, 13,438,460; value of produce, $4,526,354; value of treasure, $3,264,594. Total value of produce and treasure for the year 1886, $7,790,948.

In 1887 the exports by steamers were: Number of packages, 441,184; number of tons of wood, 3,140; weight of packages and wood in kilograms, 14,985,240; value of produce, $4,137,711; value of treasure, $3,606,474. Total value of produce and treasure for the year 1887, $7,744,185.

In 1886, Colombia's total imports amounted to £2,500,000, and her total exports to £2,875,000. Her imports from the United Kingdom were valued at £982,172, and her exports thereto at £295,086.*