

ever you are shown a piece of government work in a Latin-American country your guide always whispers "graft"—as for that matter is the practice in New York as well. But Panama seems to have received the worth of its money. The Government Palace, which corresponds to our national capital, stands facing a little plaza open toward the sea. It is nearly square, 180 by 150 feet, surrounding a tasteful court or patio after the South American manner. Built of rubble masonry it is faced with white cement, and is of a singularly simple and effective architectural style for a Latin-American edifice. The building houses the Assembly Hall, the Government Theater and the public offices. The interior of the theater, which seats about 1000, is rather in the European than the North American style with a full tier of boxes, large foyers decorated with paintings by Panama artists, and all the appurtenances of a well-appointed opera house.

Next to the Government Palace the most ambitious public building in Panama is the home of



THE NATIONAL PALACE AND THEATER

the National Institute, or University, which nestles at the foot of Ancon Hill. This is a group of seven buildings surrounding a central court. The Institute is designed in time to become a true university, but its accommodations are at present far in advance of its needs. Equipped with an excellent faculty it will for some time to come—it was opened only in 1911—suffer from a lack of pupils, because the public schools in the Republic are not yet fitted to equip pupils for a university course. The population of Panama is largely illiterate. The census in 1911 showed 60,491 children of school age, and only 18,607 enrolled in schools of all classes. Of those more than 16,000 were enrolled in the primary schools. The Government however is doing all it can to encourage education among the masses, and the National Institute will offer to all who fit themselves to enter its classes not only free tuition, but free board and lodging as well.

The third considerable public building in Panama is the Municipal Building which stands at one corner of the Cathedral Plaza. It contains, beside the council chamber and usual offices, the Columbus Library of about 2500 books, including many rare volumes on the ancient history of the Isthmian land and its people.

To return however to the physical aspects of the City of Panama. It is recorded of a certain King of Spain that when certain bills for the fortification of Panama City were presented to him he gazed



THE MUNICIPAL BUILDING

bridge and through the sally-port on the line of the Avenida Centrale. With drawbridge up and sally-port closed the old town was effectually shut off from attack by land, while its guns on the landward wall effectually commanded the broad plain

grassy, and broad enough for a tennis court full thirty feet above the level of the town. The construction was not unlike that of the center walls of the locks designed by the best American engineers. Two parallel walls of masonry were built, about



VAULTS IN THE PANAMA CEMETERY

The small sepulchres are rented for a specified time, usually three years. Unless the lease is then renewed the bones of the tenant are cast out into a common pile.

on which now stands the upper part of the town, and the declivities of Ancon Hill where now are the buildings of the Zone hospital and the Tivoli Hotel.

A good bit of construction and of military engineering was the wall of Panama—our own engineers on the Canal have done no better. Round the corner from La Mercedes Church a salient bastion crops out among fragile frame tenements and jerry-built structures. The angle is as sharp as though the storms of two and a half centuries had not broken over it. Climb it and you will find the top level,

forty to fifty feet apart and the space between filled in with dirt, packed solidly. On this part of the wall were no bomb proofs, chambers or dungeons. The guns were mounted *en barbette*, on the very top of the wall and discharged through embrasures in the parapet. Rather let it be said that they were to have been fired, for the new Panama was built after the plague of the pirates had passed and the bane of the buccaneers was abated. No foe ever assaulted the city from its landward side. In the frequent revolutions the contending parties were



RUINS OF SAN DOMINGO CHURCH

already within the town and did their fighting in its streets, the old walls serving no more useful purpose than the ropes which define a prize ring. Only the sea-wall has heard the thunder of cannon in deadly conflict. There during the brief revolution which gave the United States the whip hand in Panama a Colombian gunboat did indeed make a pretense of shelling the city, but was driven away by machine guns mounted on the wall.

Within the walls, or the portion of the town the walls once surrounded, live the older families of native Panamanians, or those of foreign birth who have lived so long upon the Isthmus as to become identified with its life. The edifices along the streets are more substantial, the shops more dignified than in the newer quarter without. There are few, if any, frame structures and these evidently patched in where some fire has swept away more substantial predecessors. This part of Panama is reminiscent of many small towns of Spain or Portugal. The galleries nod at each other across streets too narrow to admit the burning sun, or to permit the passage of more than one vehicle at a time. The older churches, or their ruins, diversify the city streets, and the Cathedral Plaza in the very center with

the great open café of the historic Hotel Centrale at one side has a distinctly foreign flavor. Here as one sits in the open listening to the native band and sipping a drink—softer, if one be wise, than that the natives thrive upon—and watches the native girls of every shade and in gayest dress driving or loitering past, one feels far from the bustling North American world, far from that snap and ginger and hustle on which Americans pride themselves. And then perhaps the music is suddenly punctuated by heavy dull “booms”, like a distant cannonade, and one knows that only a few miles away dynamite is rending rock and man is grappling fiercely with nature.

Carnival occupies the four days preceding Ash Wednesday, the period known in all Catholic countries as the Mardi Gras. For years its gaiety has been preceded by a vigorous political contest for the high honor of being Queen of the Carnival, though it is said that in later years this rivalry has been less determined than of yore. At one time, however, it was contended for as strenuously as though the presidency of the republic was at stake and the two political parties—liberal and conservative—made it as much a stake of political activity as though the destiny of the State was involved. Happy the young woman who had a father able and willing to foot the bills, for no corrupt practices act intervened to save candidates from the wiles of the campaign grafter, or to guard the integrity of the voter from the insidious temptations of the man with a barrel.

It would be chivalric to say that the one issue in the campaign is the beauty of the respective candidates, but alas for a mercenary age! The sordid spirit of commercialism has crept in and the Panamanian papa must look upon the ambitions of his beauteous daughter as almost as expensive as a six cylinder automobile, a trip to Europe, or a



yearning for a titled husband. But sometimes there are compensations. It is whispered that for one in retail trade in a large way it is no bad adver-



tisement to have a Carnival Queen for a daughter.

We have tried carnivals in various of our more cold-blooded American cities, but we cannot get



SOME CARNIVAL FLOATS

In the car shown in the upper right-hand corner is the Queen of the Carnival of 1913



THE ANCIENT CATHEDRAL

Its towers have looked down on carnival, revolution, revelry and riot

the spirit. Our floats are more artistic and expensive, our decorations are more lavish, but we sit and view the parade with detached calmness as though the revelers were hired clowns. In Panama everybody joins in the sport. The line of carriages around the park in the Plaza Centrale, thence by the Avenida to the Plaza Santa Ana and back is unbroken. The confetti falls like a January snow and the streets are ankle deep. Everyone is in mask and you can never tell whether the languishing eyes peering out upon you are set in a face of pearl or

of ebony. The noise of innumerable horns and rattles rises to Heaven and reverberates in the narrow streets, while the bells jangle out of tune, as is their custom. Oh, those bells of Panama! Never were so many peals and chimes out of harmony. Stedman, who heard them only in an ordinary moment, not in their Mardi Gras madness, put them to verse thus:

"Loudly the cracked bells overhead
Of San Francisco ding
With Santa Ana, La Merced,
Felipe answering.
Banged all at once, and four
times four
Morn, noon and night the more
and more,
Clatter and clang with huge uproar,
The bells of Panama".

Señoritas of sundry shades look down sweetly from the balconies, and shower confetti on gallant caballeros who stalk along as giant chanticleers, or strive to entangle in parti-colored tapes the lances of a gay party of toreadors. At night some of the women enmesh giant fireflies in their raven locks with flashing effect. King License rules supreme, and some of the horseplay even in the brightly

lighted cafés of the Centrale and Metropolitan rather transcends the limits of coldly descriptive prose. The natives will tell you that the Cathedral Plaza is the center of propriety; the Plaza Santa Ana a trifle risqué. After observation and a return at daybreak from the carnival balls held at the Centrale and Metropolitan Hotels you can meditate at your leisure upon the precise significance of the word propriety in Panama at Mardi Gras.

The clause in the treaty which grants to the United States authority to maintain order in the



Photo by Underwood & Underwood

THE POLICE STATION, PANAMA

Republic might very readily be stretched to include police power over Panama. This has not been done however and the city has its own police force, an exceedingly numerous one for a town of its size. Undoubtedly, however, diplomatic representations from the United States have caused the Panamanians to put their police regulations somewhat in accord with North American ideas. There are no more bull fights—"We never had very good bull-fights anyway", said a Panama gentleman plaintively acquiescing in this reform. Cock-fights however flourish and form, with the lottery drawing, the chief Sunday diversion. A pretty dismal spectacle it is, too, with two attenuated birds, often covered with blood and half sightless, striking fiercely at each other with long steel spurs, while a crowd of a hundred or so, blacks and whites, indiscriminately yell encouragement and shriek for bets from the surrounding arena. The betting in fact is the real support of the game. The Jamaicans particularly have their favorite cocks and will wager a week's pay on their favorites and all of their wives' laundry earnings they can lay hands upon as well. One or two gamecocks tethered by the leg are as common a sight about a Jamaican's hut as "houn' dawgs" around a Missouri cabin.

If there is any regulation of the liquor traffic in Panama, it is not apparent to the casual observer. Nowhere does one see so much drinking, and nowhere that people drink at all is there less drunkenness. It is a curious fact that these two phenomena—wide-open drinking places and little drunkenness—are often found together. In Panama the saloons are legion, and I regret to say the biggest of them are run by Americans. No screens obstruct a full view of the interiors, and hardened tipplers flaunt their vice in the faces of all beholders. Perhaps the very publicity impels them to quit before they are hopelessly befuddled. Possibly the moist and somewhat debilitating climate permits the innocuous use of stimulants to a greater extent than would be possible in the North. Beside the absence of any scandalous open drunkenness there seems to be some significance in the fact that the records of the Zone hospitals show a surprisingly small number of deaths from diseases induced by chronic alcoholism. But the casual observer strolling on Avenida Centrale, or along the streets tributary to it, might be excused for thinking Panama one great grog shop. It is curious, too, that despite



CHURCH OF OUR LADY OF MERCY (LA MERCED)



YOUNG AMERICA ON PANAMA BEACH

the Latin character of the populace the taste for light wines, in which some see the hope of national temperance, does not seem general. Whisky, brandy and rum are the regular tipples. On a still remembered night in Panama, before the American invasion, the Centrale Hotel bar was made free to all. No drinks were served to the thirsty, but to all who appeared a bottle was given and the line marched past for some hours. Yet, even at that, there was no considerable drunkenness observed. Apparently for the Panamanians drink is not a hopeless evil, but to the soldiers and marines of the United States stationed on the Isthmus and denied the rational social life of a well-regulated canteen the open doors of the saloons of Panama are as the open doors to a hotter spot. Their more strenuous temperaments will not stand the stimulant which leaves a Panamanian as stolid as before. The fatal riot of July 4, 1912, is one illustration of what Panama saloon hospitality may do with the men who wear the khaki.

Shopping in Panama is a decidedly cosmopolitan enterprise. The shopkeeper of whom I bought a Panama hat, made in Ecuador, did business under a Spanish name, was in fact a Genoese and when he found I could speak neither Spanish nor Italian coaxed me up to his price in French. Most of the retail prices are of so elastic a sort that when you have beaten them down two-thirds you retire with your package perfectly confident that they would have stood another cut. Nevertheless the Chinese

merchants, who are the chief retail dealers in the tropics, compel respect. They live cleanly, are capable business men, show none of the sloth and indifference of the natives, and seem to prosper everywhere. The Chinese market gardens in the outskirts of Panama are a positive relief for the neatness of their trim rows of timely plants. The Panamanian eats yams and grumbles that the soil will grow nothing else; the Chinaman makes it produce practically all the vege-

tables that grow in our northern gardens.

Avenida Centrale ends its arterial course at the sea wall of the city, or at least at that part of the sea wall which is the best preserved and retains most of its old-time dignity. It is here something like the Battery at Charleston, S. C., though the houses fringing it are not of a like stateliness, and the aristocracy of the quarter is somewhat tempered by the fact that here, too, is the city prison. Into the courtyards of this calaboose you can gaze from sundry little sentry boxes, the little sentries in which seem ever ready to step out to let the tourist step in and afterward pose for his camera, with rifle, fixed bayonet and an even more fixed expression. The



READY TO CONTROL THE PACIFIC

greater part of one of the prison yards is given over to flower beds, and though sunken some twenty feet or more below the crest of the wall, is thoughtfully provided with such half-way stations in the way of lean-to sheds, ladders and water butts that there seems to be no reason why any prisoner should stay in who wants to get out. But perhaps they don't often yearn for liberty. A wire fence cuts off the woman's section of the jail and the several native women I observed flirting assiduously with desperate male malefactors from whom they were separated only by this fence, seemed content with their lot, and evidently helped to cultivate like resignation in the breasts of their dark adorers. A white-clad guard, machete at side and heavy pistol at belt, walks among them jingling a heavy bunch of keys authoritatively but offering no interruption to their tender interludes.

On the other side of the row of frame quarters by which the prison yard is bisected you can see at the normal hours the prisoners taking their meals at a long table in the open air. Over the parapet of the sea wall above, an equally long row of tourists is generally leveling cameras, and sometimes exchanging lively badinage with some criminal

who objects to figuring in this amateur rogues' gallery. To the casual spectator it all savors of opera bouffe, but there are stories a-plenty that the Panama jail has had its share of brutal cruelty as have most places wherein men are locked away from sight and subject to the whims of others not so very much their superiors. Once the Chiriqui Prison was a fortress, the bank of quarters for the prisoners formed the barracks, and the deep archways under the sea wall were dungeons oft populated by political prisoners. Miasma, damp and the brutality of jailers have many a time brought to occupants of those dungeons their final discharge, and a patch of wall near by, with the bricks significantly chipped, is pointed out as the place where others have been from time to time stood up in front of a firing squad at too short a range for misses. The Latin-American lust for blood has had its manifestations in Panama, and the old prison has doubtless housed its share of martyrs.

But one thinks little of the grimmer history of the Chiriqui Prison, looking down upon the bright flower beds, and the gay quadroon girls flirting with some desperate character who is perhaps "in" for a too liberal indulgence in rum last pay day. Indeed



THE FLOWERY CHIRIQUI PRISON

Where native women prisoners may flirt without interruption with male malefactors, separated only by a wire fence



Photo by Underwood at Underwood

THE MARKET FOR SHELL FISH

The black spots on the roof are vultures, the official scavengers

the guard wards off more sanguinary reminiscences by telling you that they used to hold bull baitings—a milder form of bull-fight—in the yard that the captives in the dungeons might witness the sport, and perhaps envy the bull, *quien sabe?*

The present town of Panama does not impress one with the air of being the scene of dark crimes of covetousness, lust and hate. Its police system, viewed superficially, is effective and most of the malefactors in the Chiriqui Jail are there for trivial offenses only. One crime of a few years ago however bids fair to become historic. One of the banks in the town was well known to be the repository of

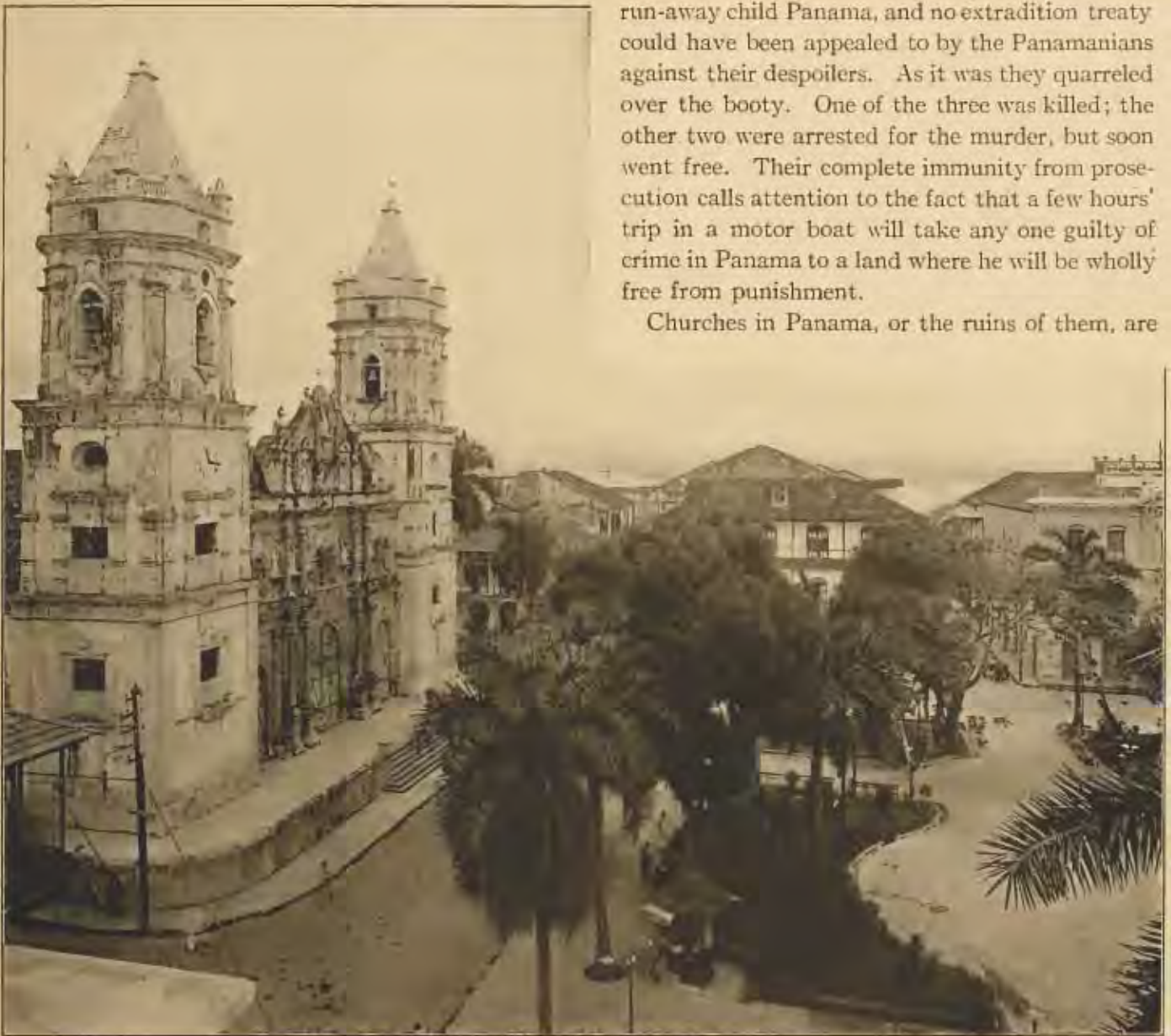
electric lights in it. Being hot, under that tropic air, they installed electric fans. All the comforts of a burglar's home were there.

From a strictly professional standpoint they made not a single blunder. Their one error—almost a fatal one—was in not being good churchmen. For they had planned to enter the bank late on a Saturday night. Tuesday was to be pay day and on Monday the full amount of the pay roll would be drawn out. But Saturday night it would all be there—several hundred thousand dollars—and they would have all day Sunday to pack it securely and make their getaway. Midnight, then, saw them creeping

the funds needed for the payroll of the Canal force. It was the policy of the Commission to pay off as much as possible in gold and silver, and to a very great extent in coins of comparatively small denomination in order to keep it on the Zone. The money paid out on pay drafts comes swiftly back through the Commissary to the banks which accordingly accumulate a very considerable stock of ready cash as a subsequent pay day approaches. Now the banks of Panama do not seem to even the casual observer as strongholds, and probably to the professional cracksman they are positive invitations to enterprise. Accordingly, three men, only one of whom had any criminal record or was in any sense an habitu e of the underworld, set about breaking into one of the principal banks. They laid their plans with deliberation and conducted their operations with due regard for their personal comfort. Their plan was to tunnel into the bank from an adjoining building, in which they set up a bogus contracting business to account for the odds and ends of machinery and implements they had about. The tunnel being dark they strung

run-away child Panama, and no extradition treaty could have been appealed to by the Panamanians against their despoilers. As it was they quarreled over the booty. One of the three was killed; the other two were arrested for the murder, but soon went free. Their complete immunity from prosecution calls attention to the fact that a few hours' trip in a motor boat will take any one guilty of crime in Panama to a land where he will be wholly free from punishment.

Churches in Panama, or the ruins of them, are



THE CATHEDRAL AND PLAZA

into the bank. The safe yielded readily to their assaults, but it disgorged only a beggarly \$30,000 or so. What could be the trouble? Just then the knowledge dawned on the disappointed bandits that Monday was a Saint's day, the bank would be closed, therefore the prudent Zone paymaster had drawn his funds on Saturday. The joke was on the cracksmen.

With the comparatively few thousands they had accumulated the disappointed outlaws took a motor boat and made for Colombia. Had they secured the loot they expected they would have been made welcome there, for Colombia does not recognize her

many, and while not beautiful are interesting. Everybody goes to see the famous flat arch of the San Domingo Church, and its disappearance will be a sore blow to guides and post-card dealers. Aside from its curious architectural quality the arch derives interest from a legend of its construction by a pious monk. Twice it fell before the mortar had time to set. The third time its designer brought a stool and sat himself down below the heavy key-stone. "If it falls", he said, "I go with it". But that time the arch stood firm, and it has withstood the assaults of centuries to come at last to the ignoble end of incorporation in a tenement house.



IN A PANAMA PARK

The arch, which certainly looks unstable, is often pointed to as an evidence of the slight peril on the Isthmus from earthquake shocks. Such convulsions of nature are indeed not unknown but are usually feeble. That great shock that overthrew San Francisco was not even registered by the seismograph on the Canal zone.

Practically all the churches are of the same plan—two towers at the front corners with the façade built between. The towers of the Cathedral rise high above the roof and the tapering steeples are covered with slabs of mother-of-pearl, which make a brave spectacle from the bay when the rosy rays of the setting sun play upon them. Within all the churches are poor and barren of ornament. They have been stripped of their funds by various authorities beginning with Spain itself, one of the Spanish generals in the revolutionary days having seized all the available funds to pay for transportation for his army. Perhaps the church resented this, for in later days it voluntarily contributed largely out of its remaining treasure to the revolutionary cause. Later still its gold and silver ornaments and altar pieces were confiscated by some faction temporarily in power. Indeed the church has been the football of politics, always entangled with the State and thus far suffering in prestige and pocket by the association.

The Cathedral owes its completion to a negro

bishop, the son of a charcoal burner who had determined that his boy should rise to higher station. By hard study the lad secured admittance to the priesthood and ultimately rose to be Bishop of Panama, the first native to fill that post. Out of his own salary he paid much of the cost of building the great church, the corner-stone of which had been laid when the city was founded, and by his zeal in soliciting funds secured its completion.

A systematic tour of the churches of Panama is well worth the visitor's time. More that is curious will be found than there is of the beautiful, and to the former class I am inclined to consign a much begrimed painting in the Cathedral which tradition declares to be a Murillo. Perhaps more interesting than the Cathedral is the Church of San Francisco, in the Plaza Bolivar. The present structure dates back only to 1785, two former edifices on the same

site having been burned. The ruins of the beautiful cloister of the Franciscan convent adjoin it, but are concealed from view by an unsightly board fence which the tourist, not having a guide, will not think of passing through. The ruins, however, are well worth seeing.



SALVATION ARMY IN PANAMA

Clubs share with churches in the social life of Panama. Perhaps indeed they rather outshine the latter. At any rate such buildings as the Union Club and the University Club, both of which abut upon the bay would be a credit to a city twice the



COSTUME DE RIGUEUR FOR FEBRUARY

size. The former club, as its name implies, was intended to be a meeting place where liberals and conservatives could lay aside political differences in social unity. However, politics in Panama, as in all places where there are not real vital issues dividing the parties, breeds bitter personal feeling and the Union Club is said to be far from being the home of political unity. It has, however, an excellent building, with a spacious ball-room, a swimming tank and a magnificent view of Panama Bay with its picturesque islands. The University Club is more an American club than a Panamanian, and it no longer observes the restriction as to membership which its name would imply. It too has a spacious ball-room and is a social center for the Zone dwellers who form the major part of its membership.

The Cathedral Plaza is socially the center of town, though geographically the old French Plaza of Santa Ana is more near the center. Directly opposite the Cathedral is the Hotel Centrale, built after the Spanish fashion, with four stories around a central court. In the blither days of the French régime this court was the scene of a revelry to which the daily death roll formed a grim contrast. However the occasional gaiety of the Centrale Patio

did not end with the French. Even in the prosaic Yankee days of the last carnival the intervention of the police was necessary to prevent a gentleman from being wholly denuded, and displayed to the revelers in nature's garb as a specimen of the superior products of Panama.

On a nearby corner of the Plaza is the old French administration building, afterward occupied by the Isthmian Canal Commission. In 1905 it was a central point of infection for the yellow-fever epidemic, and though repeatedly fumigated was finally abandoned by the American engineers who moved their headquarters out to Culebra.

Life in Panama City is mainly outdoor life, in the dry season at any rate, and even in the wet season the Panamanians move about in the open like a lot of damp and discontented flies. The almost continuous line of balconies

shields the sidewalks from the rain, and nobody in Panama is too busy to stop a half hour or so at street crossings for the downpour to lessen. Sunday nights the band of the Republic plays in the Plaza, and there all the people of the town congregate to listen to the music, promenade and chat. It is the scene of that curious Latin-American courtship which consists of following the adored one with



Photo by Underwood & Underwood

BUST OF LIEUT. NAPOLEON B. WYSE

This bust stands on the sea wall. The picture shows it guarded by a United States soldier and a Panama policeman

appealing eyes, but never by any possibility speaking to her. The procession of girls and women is worth watching, whether the eyes be adoring or not, and the costumes have a sort of strangeness befitting the scene. The practice has grown up of leaving the outer walk for the negro and negroid people, the inner paths being kept for the whites—but as the walks merge into each other so too do the

colors. If one wearies of the moving crowds without, a step will bring him into the patio of the Hotel Centrale where an excellent orchestra plays, and a gathering chiefly native sips tropical drinks and disposes of the political issues of the day with much oratory and gesticulation.

As you make your way back to the hotel at night—if it is after eleven, the driver will lawfully charge you twenty cents—you will vainly try to recall any North American town of 40,000 people which can present so many objects of interests to the visitor,



ON PANAMA'S BATHING BEACH

of lips to which, in public at least, laughter is a professional necessity. Under the red lights at midnight Panama shows its worst. Men of varied voyages, familiar with the slums of Singapore and the purlieus of Paris declare that this little city of a hybrid civilization outdoes them in all that makes up the fevered life of the underworld. Scarcely a minute's walk away is the American town, quiet and restful under the tropic moon, its winding streets well guarded by the Zone police, its houses wrapped in vines and fragrant with flowers all dark in the

lent as Wall Street after dark. But in a more sequestered section of the town, where the public hospital looks down significantly on the spectacle from one side, and the cemeteries show sinister on the other, revelry goes on apace until the cool dawn arises. There the clatter of pianolas which have felt the climate sorely mingles with the clink of glasses in cantinas that never close, and the laughter



Photo by Underwood & Underwood

QUARANTINE STATION AT PACIFIC ENTRANCE TO CANAL

and a spectacle of social life so varied, so cosmopolitan and so pleasing.

The night life of the streets is as a rule placid, however, rather than boisterous, nor is Panama an "all night town". The rule of the tropics is "early to rise" in any event and as a result those parts of the city which the visitor sees usually quiet down by midnight and presently thereafter the regions about the Cathedral Plaza are as quiet and somno-

hours of repose. But in the congested tangle of concrete houses between the hospitals and the cemetery madness and mirth reign, brains reel with the fumes of the strange drinks of the tropics, and life is worth a passing pleasure—nothing more. Men of many lands have cursed the Chagres fever and the jungle's ills, but the pest place of Panama has been subjected to no purging process with all the efforts of the United States to banish evil from the Isthmus.

CHAPTER XIV

THE SANITATION OF THE ZONE



THE seal of the Canal Zone shows a galleon under full sail passing between the towering banks of the Culebra Cut, with the motto, "The land divided; the world united". Sometimes as I trudged about the streets of Colon or Panama, or over the hills and through the jungle in the Zone, I have thought a

more significant coat-of-arms might be made up of a garbage can rampant and a gigantic mosquito mordant—for verily by the collection and careful covering of filth and the slaughter of the pestilential mosquito all the work done on the Zone has been made possible. As for the motto how would this do—"A clean country and a salubrious strait"?

It is the universal opinion of those familiar with the Canal work that if we had approached the task with the lack of sanitary knowledge from which the French suffered we should have failed as they did. No evil known to man inspires such dread as yellow fever. Leprosy, in the individual, does indeed, although well-informed people know that it is not readily communicated and never becomes epidemic. Cholera did strike the heart of man with cold dread, but more than one generation has passed since cholera was an evil to be reckoned with in civilized countries. Yellow fever is now to be classed with it as an epidemic disease, the spread of which can be absolutely and unerringly controlled.

The demonstrated fact that yellow fever is transmitted only by the bite of a *stegomyia* mosquito which has already bitten, and been infected by, a human being sick of the fever has become one of the commonplaces of sanitary science. Yet that knowledge dates back comparatively few years, and



Photo by Underwood & Underwood

COL. W. C. GORGAS

The man who changed the Isthmus to a spot as fit for human habitation as any place on the globe

Col. Gorgas first visited the Isthmus in 1904. In a little pamphlet which I have before me he then described simply the essence of the problem he had to meet. He found camped on a hill, perfectly drained and supplied with good water, 450 marines—who of course were men of exceptionally good physique, robust and vigorous. Yet in four months 170 out of the 450 were infected with malaria, and Col. Gorgas said, "if these men were our laborers, working daily in Culebra Cut, exposed to the sun and weather, many of these cases would

is partial to malaria—which had already bitten an infected negro. The result was the spread of the infection among the marines. As Col. Gorgas put it, "The condition is very much the same as if these four or five hundred natives had the smallpox and our marines had never been vaccinated". To correct this condition he proposed, "to take this village, put it under a systematic scheme of inspection, whereby we will be able to control all water barrels and deposits of water, so that no mosquitoes



Photo by Underwood & Underwood

DREDGING A COLON STREET

So near tide level is the surface of Colon that the dredges made canals in the public streets

be severe in type and at the end of the year we would be approaching the mortality of the French". The cause for the infection was apparent. Though the marines' camp was clean and sanitary there was at the foot of the hill, on which it was perched, a village of 400 or 500 Jamaica negroes. Examination of the people showed that all suffered from chronic malaria. The marine strolling in the village would be bitten by a mosquito—the *anopheles* which

will be allowed to breed, look after its street cleaning and disposal of night soil, etc., so as to get it in good sanitary condition, then have the population examined and recorded, so that we will have on a card a short history of each individual and keep track of them in this way. Those suffering from malaria will be put under treatment, and watched as long as the malarial parasite is found in the blood. I hope, in this way, to decrease to the smallest



THE WAR ON MOSQUITOES. I.

The men are oiling the surface of the streams to kill the larvae

limit the number of *anopheles*, the malarial-bearing mosquito, and, at the same time, to gradually eliminate the human being as a source of infection, so that at the end of a year it will be entirely safe for an unacclimated man to live in this village".

Being appointed Chief Sanitary Officer Col. Gorgas put this plan into effect not only in that village but in every part of the Canal Zone, particular attention being given to the cities of Panama and Colon. In these cities the visitor will be impressed with the comparative cleanliness of the streets and sidewalks and the covering of all garbage receptacles. No other Central American city shows so cleanly a front. Screening, however, is little in evidence. How great the mortality had been under the French it is impossible to tell. Their statistics related almost wholly to deaths in their hospitals and very largely to white patients. Men who died out on the line, natives who worked a day or two and went back to their villages to die were left unrecorded. In the hospitals it was recorded that between 1881 and 1889, 5618 employees died. The contractors were charged a dollar a day for every man sent to the hospitals, so it may be conjectured that not all were sent who should have been. Col. Gorgas estimates the average death rate at about 240 per 1000 annually. The American general death rate began with a maximum of 49.94 per 1000 sinking to 21.18, at or about which point it has remained for several years. Among employees alone our death rate was 7.50 per 1000. The French with

an average force of 10,200 men employed, lost in nine years 22,189 men. We with an average force of 33,000 lost less than 4000 in about an equal period.

When Col. Gorgas came to the Isthmus the two towns Panama and Colon were well fitted to be breeding places for pestilence. Neither had sewers nor any drainage system. The streets of Panama were paved after a fashion with cobblestones and lined with gutters through which the liquid refuse of the town trickled slowly or stood still to fester and grow putrescent under the glowing rays of the tropic sun. Colon had no

pavement whatsoever. Neither town had water-works and the people gathered and stored rainwater in cisterns and pottery jars which afforded fine



THE WAR ON MOSQUITOES. II.

Burning the grass that affords cover



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PANAMA BAY FROM ANCON HOSPITAL

There are few more beautiful spots in the world than the grounds of Ancon Hospital. French taste selected the site, a French nun set out the first trees and shrubs, and nature has completed a charming picture.

breeding places for the mosquito. As a matter of fact, the whole Isthmus, not the towns alone, furnishes plenty of homes for the mosquito. With a rainy season lasting throughout eight months in the year much of the soil is waterlogged. The stagnant back waters of small streams; pools left by the rains; the footprints of cows and other animals filled up with rain water quickly breed the wrigglers that ultimately become mosquitoes. Mr. A. H. Jennings, the entomologist of the Commission, has identified 125 varieties of the mosquito, of which, however, the *anopheles* and the *stegomyia* are the ones peculiarly obnoxious to man. The others are merely the common or summer resort variety of mosquito with a fondness for ankles and the back of one's hand, which can be observed any time on Long Island or in New Jersey without the expense of a trip to Panama. A careful study of literary authorities indicates to me that at this point in the description of the mosquito plague on the Isthmus it is proper to indulge in humorous reflections upon the fact that the bite of the female only is dangerous. But, given the fact, the humorous applications seem so obvious that the reader may be trusted to draw them for himself—it would be idle to say "herself", for the women will not see anything humorous about it at all.

The fight then against disease on the Isthmus resolved itself largely into a war of extermination upon the two noxious varieties of mosquitoes. It involved first a cleaning up, paving and draining of the two towns. Curiously enough bad smells are not necessarily unhygienic, but they beto-



THE WAR ON MOSQUITOES. III.
Spraying the brooks with larvicide

ken the existence of matter that breeds disease germs, and flies and other insects distribute those germs where they will do the most harm. Colon and Panama therefore were paved and provided with sewage systems, while somewhat stringent ordinances checked the pleasant Panama practice of emptying all slops from the front gallery into the street. It is fair to the Panamanians to note that in the end they will pay for the vigorous cleaning and refurbishing of their towns by the Americans. Our sanitary forces did the work and did it well, by virtue of the clause in the treaty which grants the United States authority to prosecute such work in the two cities and collect from



Photo by Underwood & Underwood

THE WAR ON MOSQUITOES. IV.

Cutting down brush which will later be burned thus destroying mosquito covert



Photo by Underwood & Underwood

SANITARY WORK IN A VILLAGE

The scene is in the outskirts of Culebra, now a model of cleanliness

the householder its cost by means of water and sewage rates.

This work was completed in 1908 and the final report of the Division of Municipal Engineering which conducted it showed that nearly \$6,000,000 had been expended, of which about \$2,250,000 was for pavements, sewers and waterworks in the two cities, and about \$3,500,000 for work in the Canal Zone. Nearly a million more was subsequently expended in the towns.

The first thing to do with the towns was to fumigate them. The Panamanians did not like this. Neither would we or any other people for that matter, for the process of fumigating necessarily interrupts the routine of life, invades domestic privacy, inevitably causes some loss by the discoloring of fabrics, interrupts trade in the case of stores and is in general an infernal nuisance. That much any people will say against wholesale fumigation. But to the Panamanians it was peculiarly offensive because they were immune from yellow

fever anyway, and to some extent from malaria as well, so to their minds the whole thing was an imposition by which the Americans alone would profit. If the gringos weren't able to live in Panama without smoking people out of house and home, they had better stay away was the generally expressed public opinion of Panama.

Here the peculiar personality of Col. Gorgas came into play. Had that gentleman not been a great health officer he would have made a no-

table diplomat, particularly in these new days when tact and charm of manner are considered more essential to an American diplomat than dollars. He went among the people of the two towns, argued, jollied and cajoled them until a work which it was thought might have to be accomplished at the point of the bayonet was finished with but little friction. The bayonet was always in the background, however, for the treaty gives the United States unqualified authority to enforce its sanitary ordinances in the cities of Colon and Panama. We can send a regiment if necessary to compel a man to keep his yard clean—which is perhaps more than we could do in some benighted towns of our own United States.

The tone of the man in the street toward these American innovations is partly surly, partly jocular. In Panama he will show you a very considerable section of the town which is not yet fully rebuilt and insist that the fire which started it was caused by the "fool fumigators". There is some difference of opinion as to the origin of this blaze, and the

matter of damages is, as I write, in the hands of arbitrators, but the native opinion is solidly against the fumigating torch bearers. On the subject of the extermination of mosquitoes the native is always humorous. He will describe to you Col. Gorgas's trained bloodhounds and Old Sleuths tracking the criminal *stegomyia* to his lair; the corps of bearers of machetes and chloroform who follow to put an end to the malevolent mosquito's days; the scientist with the high-powered microscope who examines the remains and, if he finds the deceased carried germs, the wide search made for individuals whom he may have bitten that they may be segregated and put under proper treatment.

In reality there is a certain humor in this scientific bug hunting. You are at afternoon tea with a hostess in one of the charming tropical houses which the Commission supplies to its workers. The eyes of your hostess suddenly become fixed in a terrified gaze.

"Goodness gracious"! she exclaims, "look there"!

"What? where"? you cry, bounding from your



Photo by Dr. Orenstein

THE MOSQUITO CHLOROFORMER AT WORK

Once subdued by chloroform the mosquito is removed for analysis

seat in excitement. Perhaps a blast has just boomed on the circumambient air and you have visions of a fifty-pound rock about to fly through the drawing-room window. Life on the Zone abounds in such incidents.

"There"! dramatically. "That mosquito"!

"I'll swat it", you cry valorously, remembering the slogan of "Swat the Fly" which breaks forth recurrently in our newspapers every spring, though they are quite calm and unperturbed about the places which breed flies faster than they can be swatted.

"Goodness, no. I must telephone the department".

Speechless with amazement you wonder if the police or fire department is to be called out to cope with this mosquito. In due time there appears an official equipped with an electric flash-light, a phial and a small bottle of chloroform. The malefactor—no, the suspect, for the *anopheles malefactor* does no evil despite his sinister name—is mercifully chloroformed and deposited in the phial for a later post mortem. With his flash-light the inspector



THE MOSQUITO CHLOROFORMER'S OUTFIT

Used in tracking the criminal *stegomyia* to his lair