

Colon and Colombia. Similar irregular facilities exist on the Pacific side east of Panama City.

The most populous region of the country, which is on the Pacific side between Panama City and the Costa Rican boundary, long has been served by schooners and small steamers, plying between several ports and Panama City. At Aguadulce the Government has constructed a concrete dock, and at Puerto Armuelles, a deep water harbor which serves the westerly part of Chiriqui Province, the Government has built a fine modern dock which will accommodate the largest steamers in the Pacific trade. At Chitre, Mensabe, Pedregal (the port of David) dock facilities serving present needs have been improvised.

The cattle industry has been the main support of the shipping service between Panama City and Chiriqui, supplying most of the traffic, and also furnishing most of the capital invested in the Compania de Navagacion Nacional, a company operating small steamers. The National Government, however, has given support to this company ^{both} as a stockholder and by granting a subsidy. This company has not had a prosperous career, and owing to dissatisfaction among the stockholders is in process of liquidation at this time. It is probable that a reorganization in some form will be effected.

The distance from Panama City to David is approximately 300 miles, and reasonably efficient and regular water transportation between these points is very important to the development of Chiriqui Province. The Government already has interested itself in this development to the extent of expending \$5,000,000 upon the construction of the Chiriqui Railroad and the wharf at Puerto Armuelles, and necessarily has a concern in the transportation link which connects this region with Panama City and the outside world. Eventually the development of the region should make a steamer line self-supporting, but until this is the case the Government probably will find it advisable to grant sufficient aid to maintain the service.

The United Fruit Company, which has a large banana development near Puerto Armuelles, operates its own boats to that port, but these boats draw too much water to serve the intermediate ports; moreover, the service is not frequent enough to answer as the only service. The region back of Pedregal and David is the most promising for general agricultural development of any in the country and needs speedy and regular transportation service to Panama City. Refrigeration service would stimulate the production of fruits and vegetables.

The Chiriqui Railroad.

The desire to develop the known agricultural resources of Western Chiriqui prompted the National Government to inaugurate the Chiriqui Railroad enterprise in 1914. The railroad as originally built starts from Pedregal, the Port of David, capital city of the Province of Chiriqui, and passing through David runs to Boquete, a distance of 52 kilometers, with two branches, to wit: from David to La Concepcion (27 kilometers) and from Dolega to Potrerillos (17 kilometers) respectively. The gauge is 3 feet. ~~xxxxxx~~ At Boquete the road reaches an altitude of 3,576 feet. This is a region of much promise, but development has not been as rapid as was looked for when the road was built, and the road has not paid operating and maintenance charges, to say nothing of interest on the bonded debt. Particulars as to the latter are given in the Fiscal Section of this Report.

We have not attempted to make a critical inquiry into the conduct of the road, and do not wish to reflect upon the management, which is well spoken of, but it is proper to say that beyond monthly totals of receipts and disbursements, no operating figures or other information seems to be in the possession of the Government at Panama City. The road is practically in the hands of the local management, and in view of the importance of the investment something more than this would seem to be desirable. A government-owned corpora-

tion might be organized, (similar to the Panama Railroad Company, which is owned by the United State Government) to take over control of the Chiriqui railroad. This would afford the means by which the Government might enlist the services of several public-spirited citizens as Directors, and obtain their aid in supervision and their advice as to how the property could be made useful for the purpose for which it was constructed, to-wit, the development of the country. Such an organization might be an effective agency of the Government in inducing immigration to increase the population and exports of Chiriqui Province. The railroad and the steamship companies have a common interest in this development and there should be close cooperation between them.

Traffic returns indicate that the business of the railroad has been increasing in the past year, and the property is said to be in better physical condition than at any previous time. The beginning of highway construction out from David and the handling of considerable road material seem to have been a factor in the improvement of both the earnings and physical condition, for the Road Board's accounts to June 30, 1928, show an item of B245,250.07 expended for repairs on the railroad.

In 1926 the Government undertook the construction of another line, to connect the first construction with the deep water harbor at Puerto Armuelles, including in the project the construction of a modern concrete wharf at the latter place. The length of the new line is 52 kilometers and it connects with the old line at Concepcion. The total mileage of the Chiriqui Railroad is now 148 kilometers. A section of the new road has been leased to the United Fruit Company, which will use it as the outlet for its system of plantation railways in that locality, certain trackage rights being preserved for the benefit of the old line of the Chiriqui Railroad and the region which it serves.

Under the lease the United Fruit Company will maintain the new line

at a rate upon the banana shipments which is expected to make a

satisfactory return upon the investment in road and wharf. If the old line is now actually paying operating expenses, as represented, the new line with the amount of traffic which it has in sight, together with the promise of more now afforded by development in that region, should put the entire property on a paying basis.

The report of the United Fruit Company for 1928 shows that it owns 270 miles of railroad in Panama.

A System of Highways.

Excepting a few inconsequential efforts, road-building in Panama dates from 1920, when a law was passed by the National Assembly creating the Junta Central de Caminos, or Central Road Board, and delegating to it the management of all road construction, improvement and maintenance. The first work was done under contracts covering complete construction, but this policy requires continuous work to completion in an expeditious manner, which has been found to be not the best method of obtaining a solid roadbed. Experience has shown that a more gradual process of construction, allowing the base to be compacted by traffic while the building is under way, produces the best results. Accordingly recent practice has been that of allowing several wet seasons to pass with the roads under traffic before the final surfacing is done, thereby building an enduring foundation upon which maintenance work can be successfully done. In order to use this method the Board has adopted the policy of carrying on construction under the direction of its Chief Engineer, limiting contracts to numerous subsidiary tasks of short duration.

The roads thus far undertaken, with the exception of 59 kilometers eastward from Panama City to Chepo and a few short stretches in the immediate neighborhood of Panama City, are all on the Pacific side in the region lying between the Canal and Costa Rica, which is the region of chief settlement and development.

The first plan followed was that of building what might be called penetration roads, being independent short lines from the ports into the interior

districts naturally tributary, thus connecting the latter with sea transportation. As more funds become available a more comprehensive plan was developed, for a main highway from Panama City to David, connecting the principal cities of the Pacific side. Up to the middle of the year 1928, 300 kilometers of road had been completed and about 150 kilometers were nearing completion, all east of Santiago, the Capital of the Province of Veraguas. The system as now planned includes an additional 250 kilometers from Santiago to David, through Sona and Remedios. This is through a cattle country, mostly broken and thinly populated, but the road will afford means of communication between the more populous regions of Chiriqui and the regions eastward. The money for this stretch was provided by the loan effected in New York in 1928, and it is expected that the road to David will be open for travel in 1931 and completed in 1933. This will give in all fully 700 kilometers of constructed highways.

This main highway is not far from the coast line, the location being dictated by two important conditions, viz: (1) a line farther from the coast would have been in more broken country, with prohibitive costs, and (2) the principal centers of population are located not far from the coast. In the past these communities have been little islands of population isolated from each other and existing to a great extent within their own resources. The main highway connects them and unifies the country. From the main stem short branches will be constructed, as funds are available, to the harbors not yet reached and into the districts which lie back toward the mountains. Several hundred kilometers of these district roads have been opened so as to make them passable by automobiles during the dry season. They are being improved as circumstances allow, with a bridge or culvert placed here and there, and eventually will form a part of a national highway system.

The traffic upon the Panama roads is light in comparison with that upon roads in the United States, on account of the small population, and need for a

like expenditure upon construction does not exist. The main purpose has been to obtain as much roadway as possible with the available funds, yet have a character of construction which will stand up under the prospective traffic, and which subsequent maintenance work will continually strengthen and improve. A width of six meters is standard for the base, but ^{the} surfacing done now as a rule is only three and one-half meters wide, with care to have the shoulders strong enough to enable vehicles to pass in safety. Culverts and drainage pipes are of such length as to allow widening of the roadbed in the future. The construction is macadam, treated with a special road oil having an asphalt content of 65 to 70 per cent. Corrugated galvanized pipes have been used for small openings and reinforced concrete box culverts for openings above one square meter. The numerous rivers have made a heavy expense for bridges, which are of substantial character, but including bridges, the cost of the main stem now under construction is calculated as not to exceed \$29,000 per mile. The maximum grade is 7 per cent. The work has been done in the main by a system of small contracts with residents along the way. We are glad to be able to say that in our opinion this work under the direction of the Chief Engineer, Mr. Tomas Guardia, is being economically and efficiently executed.

Account is given in the Fiscal Section of the loans and appropriations from current revenues which have been and remain available for road construction, also of the funds devoted by law to road maintenance. It is sufficient to say here that the funds specially set apart for maintenance appear to be sufficient, and it is believed that as the road mileage increases, the gasoline tax, which is the main source of maintenance fund, will naturally increase.

Service of the Roads.

Unquestionably the roads are entailing a heavy burden of expense upon the young nation, and the more serious because they cannot be counted upon to be directly productive of revenues to the Treasury. Obviously, expenditures

which do not of themselves create revenues should be carefully calculated, lest they do not exceed the supply of funds available to cover them. We believe, however, that the system of roads thus far planned for Panama is expedient and justifiable, upon political, economic and social grounds. It will enable the people of communities heretofore isolated from each other to mingle and know each other as they have not been able to do in the past, and this in our opinion will accomplish more to consolidate the country in national sentiment and common interests, and to promote social and economic progress, than any other use of the same amount of money. We consider roads necessary to the settlement and development of the country.

It is not an extravagant expectation to assume that within ten years the road system of Panama will be connected with a system of roads extending throughout all of the countries of Central America to Mexico and the United States on the north and eventually to a connection with the systems of Colombia and the other countries of South America. When that time comes far more visitors will come to Panama by motor cars than by ships, and they will see not only the Canal cities but the interior of the country. It cannot be otherwise than that these witnesses of the natural wealth of Panama will spread a knowledge of these resources far and wide, and that both capital and inhabitants will come to the country in consequence.

Several Pan-American conferences upon the subject of highways have been held in recent years and one is being held this year in Rio de Janeiro. Mexico and the States of Central America have shown an active interest in promoting a system of roads which will form an international system, and much construction is now under way. In June, 1925, the Department of Commerce of the United States published a pamphlet entitled "Motor Roads in Latin America," which contained an authoritative compilation of the mileage of good motor roads in Latin America and under construction. The following

figures were given for the countries named;

				<u>Miles</u>	
				<u>Good Roads.</u>	<u>Under Construction</u>
Mexico	-	-	-	835	346
Guatemala	-	-	-	--	270
Honduras	-	-	-	--	110
Salvador	-	-	-	145	35
Nicaragua	-	-	-	213	202
Costa Rica	-	-	-	107	200
Panama	-	-	-	290	100

As about five years has elapsed since this compilation was made, undoubtedly the mileage both of completed roads and roads under construction has been considerably increased. Foregoing figures show that the figures given for Panama have been much exceeded.

Panama City -- Colon Motor Road Desirable.

Undoubtedly it is very desirable that the two principal cities of the country shall be connected by a motor road as soon as practicable. Such a road, affording access to the tropical scenery of the interior, would be an additional attraction to tourists and afford a pleasant diversion to the residents of both cities. Settlement along the route undoubtedly would follow, with economic development of considerable importance. We think, however, that the Government now has as much of a road program in hand as it can safely undertake on the strength of its present income. A project for the private construction of a toll road has been under consideration, and we see no reason why the Government should not favor it in any way which does not involve the Treasury in liabilities.

The Panama Airways, Limited.

A review of means of transportation cannot be closed nowadays without mention of the Airways. Two companies, to-wit, Pan-American Airways, Inc., and Isthmian Airways, Inc., each maintain daily service between Colon, and Panama, and Pan American Airways, Inc., maintains a tri-weekly service to and from there David/north through Central America to the United States. The S.C.A.D.T.C.A. Colombian and Ecuadorian Airway System maintains regular service between

Colon and Cartagena, Barranquilla, Buenventura, Guayaquil and the interior of Colombia. It is significant of the strategic commercial position which Panama occupies, that every kind of communication and transportation between North and South America inevitably passes through and serves the Isthmian Republic.

The street railways and telephone systems of Panama City and Colon are controlled by the Electric Bond and Share Company of the United States, but the Government of Panama maintains and operates a rural telephone and telegraph system reaching all districts and important towns.

PUBLIC HEALTH AND SANITATION.

One way of increasing the population of Panama is by lowering the death rate, and without question this can be accomplished to an important degree. Moreover, so doing will enhance the reputation and attractiveness of the country as a place of residence, and tend to encourage immigration.

In the last twenty-five or thirty years
/ a great change has come over the state of knowledge concerning the diseases formerly prevalent in the Tropics. ~~in the last twenty-five or thirty years.~~ Scientific research and experience with sanitation have demonstrated

that the Tropics are not necessarily unhealthful, even though the observance of certain sanitary precautions is more imperative than in colder climates. The old idea that malaria and tropical fevers had their origin in a poisonous condition of the atmosphere resulting from the effects of the climate upon the profuse growth of vegetation or from emanations from stagnant waters, or in running waters ^{polluted by} ~~charged with~~ decaying vegetable matter, no longer has any acceptance among medical or hygienic authorities. It is known now that "emanations" from decaying vegetable matter or from stagnant water cannot produce disease. It is known that the sun's rays, when properly applied to the human being, are highly beneficial, and that by daily exposure a

tolerance of these rays is established. It is known that even in poorly-nourished children rickets is practically unknown, provided such children are reared in the sunlight. Moreover, the common ailments of children are generally held by medical authorities to be less severe in the Tropics than in colder climates. The atmosphere of the Tropics is as pure as the atmosphere anywhere. Port cities around the Caribbean which formerly were thought to be the native home of malignant fevers are now as free from them as any cities in the world.

There was a time when owing to the high death rate prevailing among employees engaged upon the early construction work of the Panama Canal, the Isthmus had the reputation of being one of the most unhealthful spots on the globe, but it is known now that this was due to ignorance of the laws of health and the source of the diseases which were prevalent. A final demonstration of sanitary control over the diseases which were thought to be the natural curse of the Tropics has been made in the Canal Zone and the adjacent cities of Panama.

Desiring to have an authoritative statement covering this subject, we addressed a request for information to the Bureau of ~~the~~ Public Health Service of the United States, Washington, D.C., and received the following very clear and conclusive reply:

An Authoritative Statement.

"United States Public Health Service Bureau"
Washington, D.C.

July 13, 1929

"Receipt is acknowledged of your letter of July 10th addressed to the Public Health Service, and requesting an opinion as to the effect upon health of living in the Tropics. You refer to the old idea that the profusion of vegetation and decomposing organic material as a result of rainfall and heat fill the air with vapors which are deleterious to the health of human beings.

Such an idea is in line with the ancient belief that night air was harmful and that malaria was due to "bad air." The word "malaria" means "bad air." All such ideas are merely relics of the superstitious age. The Tropics are perfectly healthy for all human beings who do not suffer from the effects of high tem-

perature and humidity, provided such persons live a normal life and avoid the bites of insect transmitters of disease.

Mosquitoes and other biting insects are responsible for the unhealthy conditions that exist in many tropical countries. Mosquitoes, as you know, are solely responsible for the spread of malaria, yellow fever, and dengue fever. Infected fleas spread bubonic plague, and infected lice spread typhus fever. The water-borne diseases, such as cholera, typhoid fever, dysentery, and diarrhea, can be controlled just as well in the Tropics as they can anywhere else in the world by proper safeguarding of water supplies.

The writer of this letter lived in Panama for ten years, during the construction of the Panama Canal, with a wife and three children, all of whom were born in Panama and spent their early lives there. The entire family of five were more free from disease, particularly the diseases incident to children, than an ordinary family in any part of the United States would have been. The Tropics can be made perfectly healthy by proper sanitation.

It was meant above that certain people do not thrive well in the Tropics because they are affected by extremes of temperature and humidity. These are the sort of people who suffer heat prostration during the summer weather and of any large city in the United States. Of course, people who are depressed and without energy during hot spells of an ordinary summer would probably not be suitable for continuous residence in the Tropics, even though they selected a well sanitized location."

To Mr. G.E. Roberts,	Respectfully,
55 Wall St.,	(Signed) C. C. Pierce,
New York City.	Asst. Surgeon General."

The mosquito which conveys yellow fever does not breed in running water, but in barrels, buckets, cisterns, tin cans, holes in trees and other receptacles of the kind; moreover, this mosquito flies but a short distance. These conditions make protection against this menace comparatively easy.

One of the most important features of the demonstration of control which has been made on the Isthmus is the proof afforded that a high degree of immunity from the diseases once prevalent can be obtained for small areas without the expense of extending the precaution^{ary} measures to extensive areas. The cities of Panama and Colon are freer from mosquitoes and malaria than perhaps any cities in the United States, although in most of the territory between them conditions are about the same as in pre-canal days.

The cost of providing a pure water supply, proper drainage and disposal of offal is not prohibitive even for rural villages, and these provisions will

give the country population the security which the cities now have.

The prevailing diseases in the public are malaria, tuberculosic and intestinal diseases. Reliable figures as to the relative prevalence of these diseases are not available, but it is known that they are much more common than they used to be, and that not only is the death rate higher than it needs to be, but that much of the inertia and inefficiency of the rural population is due to ill health and unsanitary conditions. The neglect of mankind to dispose of its own wastes is one of the most serious menaces to health in the Tropics.

Prevalent Diseases.

Malaria is the most serious scourge of rural tropical regions. Large industries are usually quite successful in protecting their employees drawn from the United States, if located in the vicinity of cities or residing in limited areas. When scattered, and when employees wander from place to place, this protection becomes more difficult. Malaria is conveyed by the bite of an infected mosquito, a very hardy species that breeds in all kinds of ground water except swift-running streams, and which may fly or be carried from one-half to one mile or more if the wind is favorable. It almost never bites in the daytime, so that if people would remain from sundown to sunup in properly screened houses, they would not get this disease. Quinine is an excellent remedy for malaria if taken at the proper time and in proper doses, but it cannot be very well taken all of the time, so that reinfection with malaria is common where one is constantly exposed. The effective remedy is in draining, filling and oiling of swamps, puddles, lowlands and stagnant ponds, pools and other collections of water that favor mosquito breeding. This work, if intelligently done, need not be prohibitively expensive, and if spread over sufficiently wide spaces near inhabited areas, will solve the malaria problem. It should be done by local communities, since it is for their protection, and

207

everybody should cheerfully contribute ^{money and} labor to do it. The annual poll tax or a similar tax might well be devoted to it.

It used to be thought that tuberculosis was especially prevalent in harsh climates, but it has been estimated that 18 per cent of all deaths in Panama are due to this disease, which exists principally among persons of adult age. Intestinal diseases, on the other hand, are the principal cause of high infant mortality. Exact figures are not obtainable, but a calculation based upon information available indicates that of approximately 16,000 children born each year at least 2,320, or 14.5 per cent, die before attaining the age of one year.

Typhoid, Para-Typhoid Fever and Dysenteries are nearly always due to drinking water that is contaminated, not with decaying vegetable matter, but with the alvine (body) discharges of human beings. Milk may also give rise to these diseases if contaminated with polluted water, as in washing containers, or by the hands of milkers who may be carriers of the disease. The installation of safe water supplies either from uncontaminated sources, or of supplies which have been sedimented and chlorinated and thus rendered safe, is an effective protection. The pasteurization of milk is practiced in the larger cities, but boiling milk in the home will render it perfectly safe. Any slight loss of vitamins due to either of these processes may be overcome by adding to the daily diet, even of the very young child, orange or tomato juice, or both. If fresh milk cannot be obtained, dried milk or condensed milk may be substituted, missing vitamins being restored by the giving of the fruit juices already mentioned.

The hookworm ^{disease}, or tropical anaemia, as it is often called, is a prevalent disease in tropical and warm climate. It originates in filth and its prevention is a very simple matter. The source of hookworm is the stool of an infected human being. In modern cities with modern plumbing, i.e., with

proper sewage disposal, hookworm will not propagate. Even in rural districts where the people have sanitary privies, ^(which are better) or properly constructed cesspools or septic tanks/ and where these are always used, there is no danger from hookworm. Where the stools from infected human beings are deposited on the ground, in warm, moist climates, the eggs of the hookworm hatch out and live for weeks, and when children come in contact with this polluted soil with their bare feet ~~then~~ infection at once takes place.

It will be seen that safe water, proper disposition of human wastes and protection from mosquitoes, together with wholesome food, are the fundamental requirements for a healthier and more vigorous population. Safe water in sufficient quantity will accomplish a reduction in intestinal diseases, and have a marked effect in reducing infant mortality. In addition, with abundant water, there will be no inducement to maintain cisterns, water barrels and jars, tanks or other receptacles. As a result, mosquito breeding will be reduced, especially in the vicinity of dwellings, and malaria incidence will fall. With the drop in malaria incidence there will be a reduction in tuberculosis, as many cases of tuberculosis occur among persons whose vital resistance has been undermined by repeated attacks of malaria.

Good work has been done in the line of sewage disposal in five provinces, in conjunction with the Rockefeller Foundation. The work should be further extended so as to reach all inhabited localities. This will accomplish a reduction in the cases of typhoid fever, the dysenteries, hookworm and other intestinal parasites, now common, and be of great service in maintaining the everyday health and working capacity of the people.

Public Health Service.

Public health education should be carried on in connection with the public schools and the activities of the churches. The present Health Service is costing \$150,000 per year and there is reason to believe that it might be more efficient in various ways than it now is. One reason why

it has not been more efficient is that it has not had sufficient legal authority to enforce recognized sanitary precautions. A representative of the Pan American Bureau was prepared and recently presented to the President of Panama the draft of a Sanitary Code which has been adopted by most of the countries represented in the Bureau, and with a few reservations to suit the local situation this Code has been approved by the President for adoption. This code has been based upon the experience of other countries with social and economical conditions similar to those of Panama, and has given good results in those countries. Its provisions have all been tested in practice.

The essential features are as follows:

It begins by establishing a central responsible service of health, hospitals and welfare, and outlines the functions and duties that should be applied and carried out.

It confers the necessary authority on the health officials.

An advisory Board is created, in order to provide a check and avoid abuse of authority.

The Republic is divided into districts with personnel and the duties of the personnel are set forth, as well as methods of procedure.

A health fund is created through whose operations the municipalities can bring about the major portion of their own sanitary improvements. The central government will eventually be reimbursed in full for its contribution to such improvements. This is as it should be, for the local communities should be made to feel their immediate interest in and responsibility for the program, and all continuous work can be carried on more economically by them than by the central government.

Prophylactic principles are set forth.

Foods and drugs are regulated and controlled.

The authority to control venereal diseases is conferred.

Legal authority for the care and control of the insane is provided.

Regulation of hospitals, asylums, clinics and dispensaries is authorized. Coordination of their activities with those of the health service is provided for.

The right of entry and inspection in such manner as to safeguard personal rights and property is conferred.

Cemeteries are regulated. The handling of the dead in a sanitary manner is provided for.

The regulation of maritime and frontier traffic is authorized.

The welfare in inhabited areas is protected.

If the Code as prepared is made effective, it is believed that annual expenditures under it will not be in excess of present expenditures. Duplication of effort, needless and wasteful expenditure of public funds will be largely obviated and reduction in sickness and death rates will follow, as has occurred in other countries where substantially the same type of health law is in effect.

INDUSTRY AND COMMERCE

Industry as yet has but little diversification in Panama. The primary industries or occupations of a country are based upon the natural resources, the immediate wants of the population and the services which the inhabitants may render to the outside world. In the case of Panama the activities of the people from the beginnings of settlement have been primarily related to transportation across the narrow neck of land which separates the two oceans.

This was the basis of the original settlements on the Isthmus. On the Pacific side, Old Panama and its successor Panama City, and on the Atlantic side Porto Bello and Nombre de Dios, lived on the traffic between Old Spain and the Spanish colonies of western South America, obtaining practically all their supplies in exchange for the services thus rendered. When the mines of Peru were depleted the traffic fell off and the Isthmus languished. Revival came when gold was discovered in California and traffic rapidly developed between the eastern States of the Union and the new Eldorado. The Panama Railroad, built in 1850-55, established its Caribbean terminal at what is now Colon, (named Aspinwall by the Railroad Company) and the old port of Porto Bello twenty-two miles distant, was practically deserted. When transcontinental railroads were completed across the United States, activities on the Isthmus again declined and the cities languished until canal-building began under the French company. During the canal-building periods, a vast distribution of money was made to laborers engaged upon it, but this did not to any considerable extent stimulate industries in Panama or increase the consumption of Panama products, for the reason that the industries

country were not sufficiently advanced to respond to the demands.

Supplies for the workmen upon the canal were almost wholly brought in from outside the country, because they could be obtained in no other way.

Since the Canal has been in operation the Isthmus occupies a much more conspicuous place on the map of the world than it did before. One of the great highways of travel and commerce passes through it, and thousands of strangers visit the terminal cities who never would do so but for the Canal. The Isthmus is one of the outstanding points of interest on the map of the world, not only on account of the famous engineering work which exists here, but because this is a crossing point of many transportation lines.

Nevertheless, except for the travel and traffic which flows through, and the rather incidental benefits which the terminal cities derive, the situation as yet has changed but little. The cities profit by the expenditures incidental to the maintenance and service of the Canal, the expenditures of tourists and the increase of population supported by these expenditures, but as yet they are largely superficial to the country. Their roots do not spread out very much into the country. They draw their subsistence, not only in money income but in the supplies for which their incomes are expended, largely from outside. This, of course, is because the country remains to so great an extent undeveloped and such rural population as it has is of low-producing and purchasing capacity. The growth of population is slow and the cities have gained in part at the expense of the country districts, so that outside of recent developments in Chiriqui and around Gatun Lake it is questionable whether the country districts are producing more wealth than in pre-canal days.

Elsewhere we have discussed the reasons for this slow development and need not recite them here. The truth must be recognized that in order to build up industries and cities it is necessary to have a hinterland of producing and consuming population and to create values out of the natural resources or by trade services.

The Beginnings of Manufacture.

It is a common criticism which Panamanians make of themselves that the country does not supply its own simple wants to the extent that it might do so, and that money is sent out of the country which might be kept in circulation at home. It is obviously true that Panama is importing many things which might be and should be produced at home, but we are not clear that anybody is to blame for this situation. We have not found that unemployment exists to any noticeable extent. We are told ^{that} employers find difficulty in obtaining labor when they want it. One of the largest employing companies in the country has brought in approximately 2,000 laborers in the last two years and would bring in more if it knew where to find them.

It is true that a considerable portion of the population, particularly in the rural districts, is not very profitably employed, but to the extent that this is due to lack of training in the kinds of work which should be done it cannot be said that anybody is to blame. Nor can the situation be changed suddenly. The most glaring example of importations which might be replaced by home production is in the case of the food products listed in another place in this Report as brought in from the United States. The demand is here and is supplied from 1,500 or more miles away, although the natural conditions are favorable to production at home. But the existing population is not prepared to meet the demand.

It will be found to be much the same in other cases that might be named. Laborers in numbers are not to be had unless drawn away from work at which they are already employed. New work might pay better, but the labor is not trained to it. Time alone can remedy a situation of this kind.

Leadership with capital of course can do much in the way of founding industries that are suited to the conditions and in training the unskilled labor to produce higher values. Generally speaking, the best opportunities are found in lines where the materials are to be had at home and can be

worked up into goods without the use of costly investment in equipment or highly skilled labor, and which are saleable in the Panama market.

It is gratifying to note the beginnings of diversified industry, upon the spontaneous initiative of artisans and business men of varied past experiences. The starting up of numerous small furniture factories affords an illustration, and so of tanneries, shoe factories, soap factories, the manufacture of candles, work clothing, hats, harness, brick, cement blocks and tile. The manufacture of beer has been an outstanding success, because the materials can be brought in more cheaply than the product, and prompt delivery to retail establishments of a satisfactory article wins the business. The Coca-Cola and Orange Crush establishments are illustrations of the workings of the same principle. The salt works at Aguadulce, where salt is evaporated from sea water afford another example of a domestic supply converted to serve a domestic need, for the cattle industry makes a market for salt.

The pearl fisheries long ago gave the name to a group of small islands in the Bay of Panama. The lists of exports from Chiriqui Province in the year 1853, given elsewhere, includes mother-of-pearl shells to the number of 200,000, and pearls and mother-of-pearl shells are a regular item in the declared exports of Panama to this day. In the fiscal year 1927, the aggregate declared value of mother-of-pearl, tortoise shell and pearls was \$140,524.

It is easy to believe that eventually the woods and tropical food products of Panama will afford the basis of manufacturing and canning industries of great importance. There can be no question about the

growing demand for tropical products, and no other tropical country has a more advantageous position for worldwide distribution.

Tourist Business of the Terminal Cities.

The cities of Panama and Colon have grown and are the scenes of busy life, as the result of the completion of the canal, the growth of population in the adjacent communities of the Zone, the establishment of the United States Army posts and naval bases, and the growing volume of travel for business and pleasure. The latter must be regarded as permanent business, advantageous in many respects. The two cities are no longer in an out-of-the-way corner of the world, visited only by those who come for the single purpose, but on one of the main traveled roads. Last year an average of 19 ships per day passed through the Canal, and many more docked at the entrances without making the transit.

It has been estimated by the Tourist Bureau of the Panama Chamber of Commerce that, including passengers for Panama, cruise tourists, through passengers and sailors who take "shore leave," and sailors of the United States fleet, 750,000 persons have visited Panama from overseas in the past year. During the stay of the United States Fleet, January 10 to March 10, 1929, 182,824 shore leaves were granted.

No authentic figures exist for the expenditures of these visitors, and we prefer not to make one, but unquestionably the aggregate is a large item in the prosperity of these cities.

The tourist business is ^{the} most important factor, and is certain to grow from year to year. The people of all countries travel more than formerly, and it is a form of recreation that increases by habit and with the continuing rise of average incomes. It is not far-fetched to visualize Panama as one of the healthiest, most attractive winter re-

sorts for those who want to escape the northern winters.

Its location next to the Canal Zone, probably the most healthful tropical area of the world, should attract travellers in increasing numbers. By the terms of the treaty between the Governments of Panama and the United States, the cities of Colon and Panama have a common water supply with the Zone communities and both Governments share the expense of maintaining the same sanitary precautions in the cities that are maintained in the Zone.

The Canal works themselves are world attractions because of their magnitude and the simplicity and perfection of their operations. They seem to be a part of the surrounding manifestations of Nature herself. There is no more restful or interesting occupation for a vacation period than that of watching the procession of ships from all quarters of the globe through the Canal and studying the various problems which the engineers had to solve in order to make the wonderful project a success.

There are other objects of interest and means of amusement. There is sea-bathing in delightful water, tarpon and deep-sea fishing unexcelled in the world, also fresh-water fishing in the streams. Hunting ranges from the varieties of fowl to deer, alligators and other denizens of both jungle and mountain forests. Four golf courses are available including the "million dollar" one on Gatun Dam.

There are banana, coffee and cacao plantations, cocoanut and mango groves, pineapple gardens, pearl fisheries and wonderful forests containing a greater variety of trees than are to be seen in the temperate zone. There is no better opportunity to see in comfort the most interesting features of tropical life, all so novel to residents of the temperate zone. And not less interesting ~~here~~ are the old towns, ~~which~~ among the earliest settlements in the western hemisphere, scarcely changed in

architecture from what they were 200 or 300 years ago.

Trips to the interior up to 200 miles distance can be made over good auto roads equipped with reliable auto service. The auto roads reach attractions like the oldest church in the Americas at Nata, orange groves, waterfalls, tropical anthills, salt fields, hot springs, mountain and ocean views, ^{and} exhibiting at different altitudes the vegetation of the tropics and temperate zones.

The Canal Zone itself, besides its greatest work, the Canal, and its attractive American home communities, affords a view of aviation, ~~and~~ navy and submarine bases, and the most complete system of port defences under the American flag. Once in two years a spectacle is provided of a concentration of the entire United States Fleet for maneuvers. In the Zone is the tropical plant experimental station maintained by the United States Government, and on Barro Colorado Island in Gatun Lake the United States Government maintains under the supervision of the Department of Agriculture the wild life refuge which had its origin in the creation of the lake for the upper level of the Canal and the consequent flooding of a large area of jungle. Here also the Institute of Tropical Research maintains a laboratory for biological studies which is a popular visiting place for scientists.

The City of Panama proper, with its own pronounced atmosphere of old Colonial Spanish life, counts at least 44 places of interest which take up the time of the tourist from a few minutes to a complete morning, day or evening. As trips outside the city, about fifteen are named, requiring from a few hours up to a day or four days.

There are few spots in the western world which have so much historic interest as the sites where stand the ruins of Old Panama, at one time the richest city in the colonies of Spain -- sacked by Sir Henry Morgan in 1681 -- and of Old Port Lorenzo, Porto Bello and Nombre de Dios on

the Atlantic side, all scenes of the most desperate fighting between the Spanish and British adventurers of early American history. Here are the very footprints of Columbus, Balboa, Pizarro, Sir Henry Morgan and Sir Francis Drake, the latter the greatest of Elizabeth's sea captains, whose body was buried at sea off Porto Bello. The scene is practically the same as when they looked upon it, for the dark grim walls of the old Spanish fortresses defy the elements.

Any American who has read the story of the gold rush to California by the forty-niners must feel that the Chagres River belongs in the history of his own country. The wild stream has been tamed to lift great ships across the Continental Divide, but the upper reaches are just what they were when the venturesome youth of that epic period toiled through the swift waters in the most dramatic and heedless assault upon the jungle of which history tells.

The Chamber of Commerce of Panama has grasped the possibilities which lie in the development of tourist business. It has established a Tourist Bureau with an office on the ground floor in a central location, and is establishing connections with the leading Tourist Agencies and the organizations of steamship and railroad companies which are active in promoting travel. The results of this activity already have been manifested, and show that Panama is a name which arouses interest wherever it is brought to the attention of persons contemplating travel. The work of the Bureau will become even more effective with experience, and deserves the support of the public.

The Chamber of Commerce may be a very useful organization in the upbuilding of Panama, for the fact that it is a private organization controlled by business men gives it greater freedom of initiative than

a Government Bureau can have. It would be well for the Government to give a moderate degree of financial support, but not to the extent of either bringing it under government control, or of causing the business men of Panama to think that there is no need for them to support it liberally. Either of these results would be fatal to its usefulness. The Chamber of Commerce should make a study also of the immigration problem.

There is more to the development of tourist business and of travel through Panama than the mere expenditures of visitors, although the latter are an important factor in current business and in the Government revenues. The chief value of this travel is the publicity value -- the value which every merchant appreciates of having a location where thousands of people pass his show windows. Men of all lines of business and varieties of interests will be visitors here in increasing numbers, and business men of experience, even on vacation trips, have their eyes open to opportunities.

The natural wealth of Panama and the possibilities of development will come under their observation, and it may be expected that ultimately substantial results will come to the entire country.

The fact should not be overlooked that the cities of Panama and Colon are bearing much more than a proportionate share, based on population, of the expenses of the National Government. The rural schools, the rural governments, the highways, the lighting systems, the health service, the postal service, are mainly sustained by revenues collected in the cities. It is right that this shall be so, for the cities have the tax-paying capacity and in the long-run they will be benefited by the development of

181

tax-paying capacity and purchasing power in the rural districts, but at present this tourist business in the cities is an important factor in their ability to pay taxes, and directly in the revenues themselves.

Foreign Trade

The foreign trade figures of Panama afford convincing evidence that a large portion of the imports of the country are paid for in some other way than the usual course of trade. Thus in the latest three years for which we have figures, 1925-1927, the imports aggregated \$44,932,000, an average of \$14,644,000 per year, while the exports aggregated \$11,122,000, an average of \$3,707,000. (*) Here on the face of the situation is an average adverse balance of \$10,932,000, a sum nearly equal to three times the recorded exports. Statistics of exports and imports never tell the whole story of business relation between countries, but such an unbalanced state as this is unique. It is not likely that the exports are seriously under-calculated. It is more likely that the imports are under the true values, which would make the difference greater.

How did Panama settle for the difference between what she imported and what she exported? Borrowing would account for some of it, income from foreign investments for some, but Panama also has invisible payments to make. A calculation of such items running both ways probably would not materially alter the net figures. The reasonable conclusion is that in the main the difference is accounted for by sales of entertainment and goods to visitors, the goods being carried away by the purchasers without entry at the customs houses. The goods thus sold of course are for the most imported, but as a rule are novelties which carry larger profits than staples. Entertainment is mainly service, hence the net receipts from this class of business may be assumed to be large enough to balance

(*) Table of imports and exports appears as Appendix

the costs of the imports, including the share consumed by residents of the country. Evidently the expenditures of visitors and of the neighboring communities of the Zone are a highly important factor in maintaining the business activity which prevails in the two Cities and in effecting settlement for the country's imports.

ENTREPOT TRADE

It must be said that as yet the hopes which the residents of Panama have long cherished that a distributing center of world importance would eventually develop on the Isthmus have not been realized to a gratifying extent. This, however, is not conclusive as to the future, and the Government and commercial organizations should be alert to act upon every opportunity to improve the position of the Isthmian ports in the system of rate charges maintained by the shipping world.

The taxation policy of the Republic has not been favorable to the development of its cities as trading centers. Since they have practically no domestic products to sell, they sell only imported products and the cost is increased by the levy of import duties. Thus they are practically ruled out of international trade before they begin and they would be in a much more favorable position for the tourist trade if it were not for the import duties. We think that the situation might be bettered for foreign trade by the establishment of Free Zones in the port cities, which proposal is discussed at some length further on in this Report, and therefore will not be enlarged upon here. Free Zones, however, would not lower the cost of living in Panama or help the merchants with the tourist trade.

Taxes upon imports hamper the business of the merchants of Panama in every way, and violate the fundamental principle that taxation should be