

UNITED FRUIT COMPANY
MEDICAL DEPARTMENT
ANNUAL REPORT

INCORPORATED
LIVERPOOL SCHOOL OF TROPICAL MEDICINE.
JOHNSTON TROPICAL LABORATORY,
UNIVERSITY OF LIVERPOOL.

1913

ASC

LIVERPOOL
SCHOOL OF
TROPICAL
MEDICINE

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LETTER OF TRANSMITTAL.

During the year sanitary measures have been rigidly enforced throughout the whole Division. New lands are constantly being developed, and our Medical Service, with its dispensaries and District Medical officers, is always ahead of construction work. Two new dispensaries have been inaugurated during the past year to accommodate the rapid development in new districts.

ALMIRANTE.—This rapidly growing port, due to an extensive contract for filling-in and civic improvements, has necessitated an extra amount of work. All employees are properly screened in their houses, and especial attention paid to water supply, which is piped in from a reservoir several miles in the mountains. All water containers which were originally in use here have been destroyed. Mosquito infection, therefore, has been reduced to a minimum. Garbage is frequently collected and destroyed, the same as in older districts.

BOCAS DEL TORO is kept in its usual state of sanitary cleanliness.

Hospital has been improved with the addition of a second story on ward four, necessitated by the increasing pay-roll. Kitchen, several wards, and surgery have been enlarged for the same reason.

The Medical Superintendent of this Division has been appointed by the Republic of Panama Medico Oficial *ad honorem*, and with his staff has full charge of sanitation of Almirante, Changuinola, Sixaola, and Talamanca.

The health of the Division during the year shows a marked improvement, details of which are noted in the following:—

The total number of deaths from all causes among employees was 50. These were divided as follows: from disease 45, and from violence 5, giving the annual average per thousand of 7.5 and .833 respectively. In segregating according to race, the annual average death-rate per thousand from disease among employees was for whites 3.33 and for blacks 7.7, giving a general average for disease of 7.5. For the fiscal year ending September 30, 1912, the average annual death-rate per thousand among whites was 12.0, and blacks 11.36. Among employees during the fiscal year the deaths from principal diseases were as follows: Chronic Nephritis, 5; Dysentery Clinical, 1; Malarial Fever (estivo-autumnal), 2; Lobar Pneumonia, 8; Tuberculosis, 13; Pellagra, 1; leaving 15 deaths from all other diseases and 5 from external violence. No cases of yellow fever, small-pox, or plague originated in or were brought to the Division during the year.—
I. W. McL.

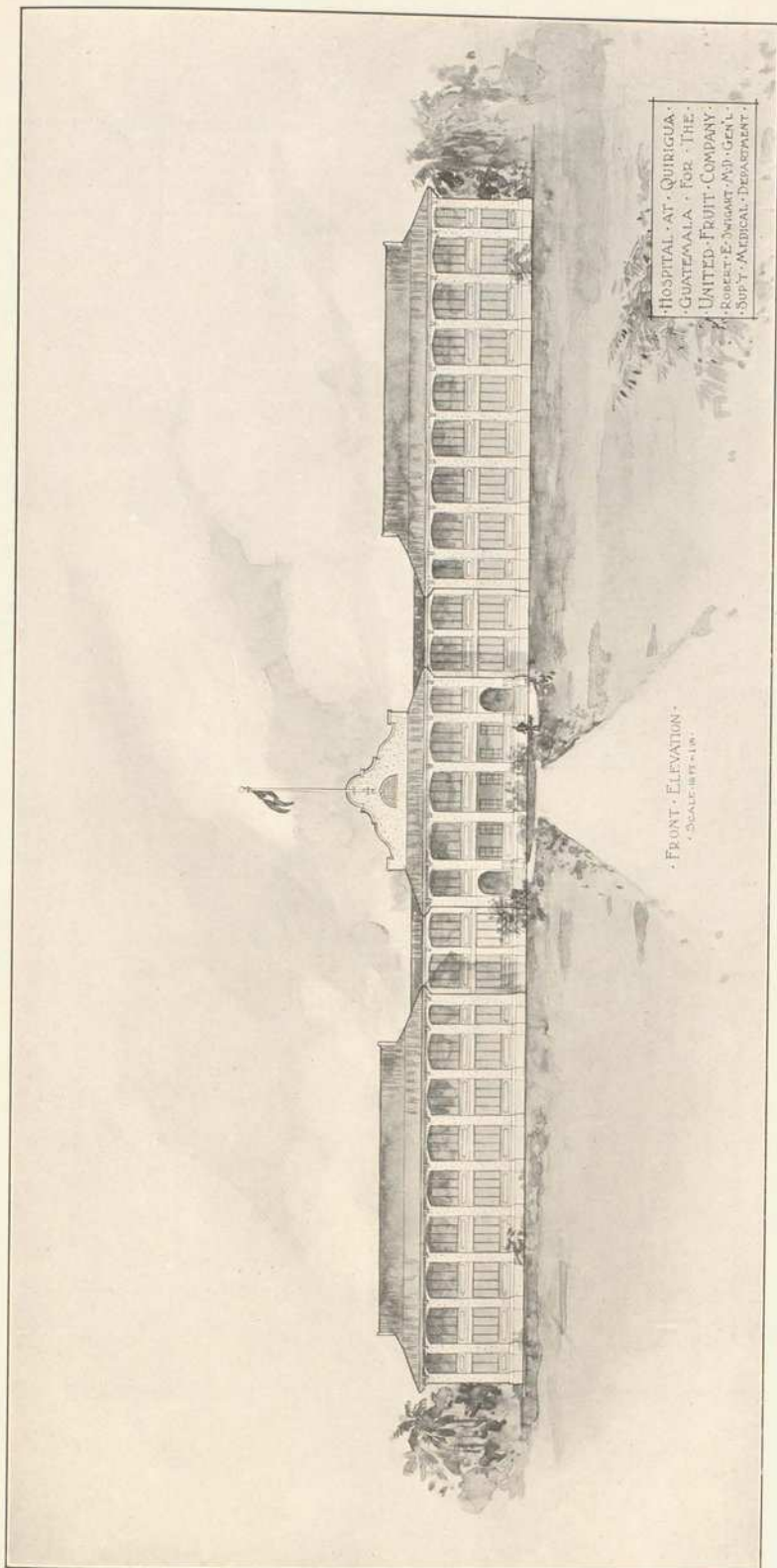
Annual Report, 1913, Guatemala Division.

The rich alluvial flats of this Republic have been responsible for the rapid development of the Company's holdings of 200,000 acres. Banana farms have been extended inland 60 miles along the line of the Guatemala Railway which connects Puerto Barrios, its water port, with the rich and productive interior provinces. This is one of the newest divisions, and, due to experience in other Central American Republics, its development has included the most modern sanitary procedures, thus eliminating the high death-rate which followed the Continental Railway to the capital in the early nineties. The district begins at Puerto Barrios, a coast town of the ordinary type, containing about 3,000 inhabitants, the only Atlantic port of Central America in which the Company is interested that is not properly sanitized. The Company's engineers have detailed plans for extensive civic improvements, but arrangements for the work have not to date been made with the Government. The Guatemala Railway and the United Fruit Company have for a number of years, gradually, of their own account, drained and filled in the swamp in which the town is built. Their administrative offices, homes for employees, shops, and hotels are now on high ground, necessitating an expenditure of thousands of dollars for sanitary improvements. In this connection must be mentioned the new concrete and steel rat-proof pier, extending 1,800 feet into the bay, which in construction and design equals or excels anything of the kind in the world. The banana district is developed in broken patches 60 miles inland, along the railway, through villages and towns of the older farms into the vast alluvial valley of Quirigua, which with its ramifications contains about 200,000 acres of the richest land in America. It is here that the aborigines centuries ago had their agricultural centre. Their vast carved monoliths and temples were uncovered in the recent banana planting. It is a peculiar circumstance that at this point the United Fruit Company has established its permanent centre of population and traffic. The site chosen is the village of Quirigua, slightly elevated above the vast alluvial fields, cooled by the constantly blowing winds from the sea miles away. Administrative offices, railroad yards, machine shops, electric light and ice plant, grouped, form a busy traffic organization, indeed. The perfectly screened homes for officers, cottages for minor employees, and camps for laborers, with their cleanly environments, conform in sanitary requirements to the recently erected concrete and steel hospital, at a cost of \$150,000, perfect in detail, the finest structure of its kind found anywhere, and accommodating

150 patients of all classes, with corridor space for an overflow of 100, if necessary. The structure is 350 feet in length, and consists of an administrative building, with quarters in the upper story for our staff of doctors and two double-storied wings, containing public and private wards, laboratories, convalescent quarters, and private rooms. There is a single building devoted to surgery, with modern equipment to match the general appointments, which are of the very best. There is also a service building, containing a modern kitchen, bakery, storage plant, laundry, and incinerator, and an upper story with private rooms for the use of patients. The whole structure is designed as a unit by means of connecting screened corridors, and by the use of elevators one may reach any part of the institution from a single point, entirely and constantly within the protection of mosquito-proof wire-netting. Light, laundry, and elevators are supplied with electric power from the central plant. The structure was completed within the present month, the old hospital at Dartmouth having been converted into a sick-camp. The Division Medical Service is thoroughly organized, and its branch hospitals, sick-camps, and dispensaries effectually protect the health of the 5,000 employees and the 8,000 inhabitants dependent upon us for medical service.

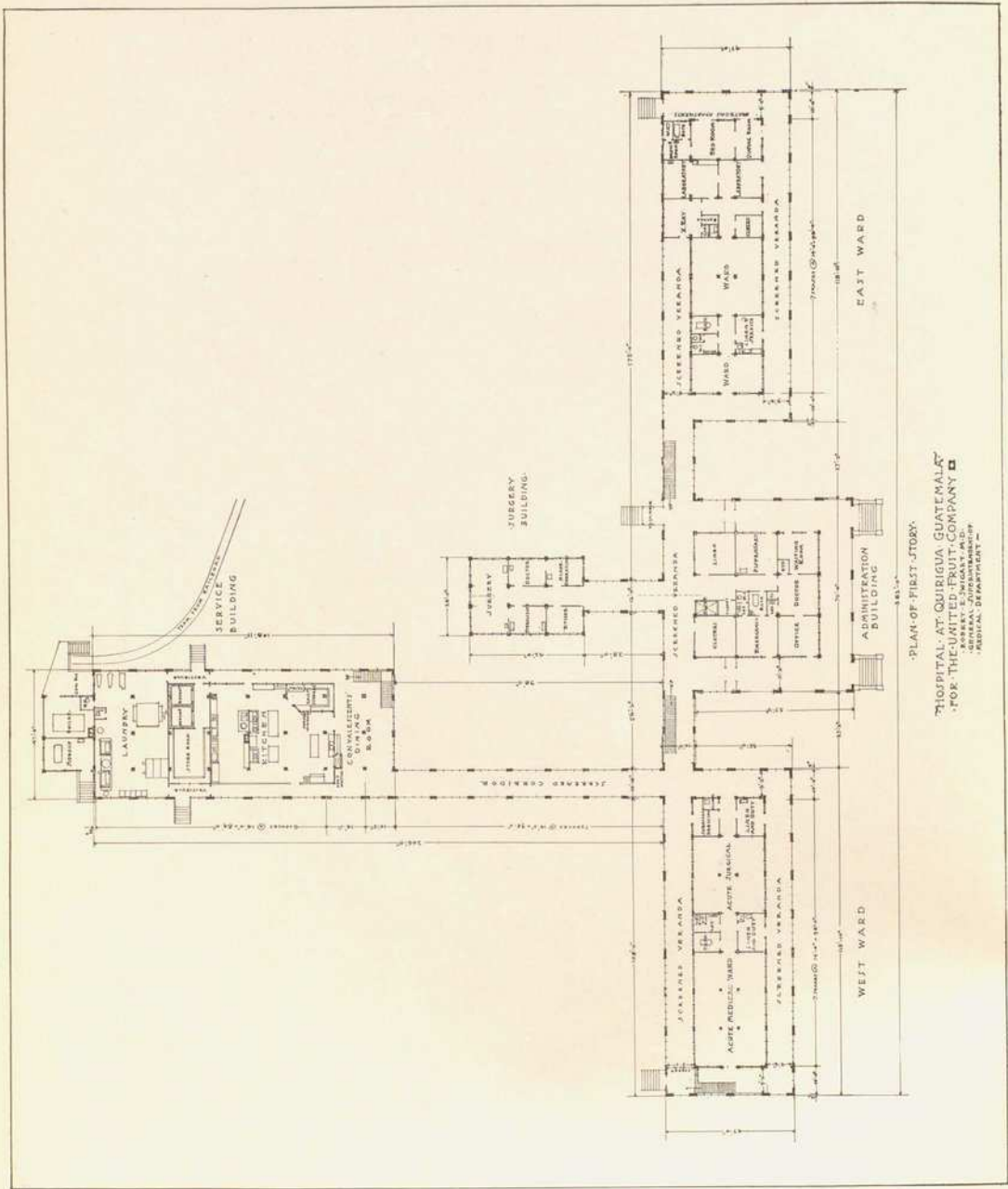
Guatemala, being a new division, has had the benefit of the Company's experience in older developments. Lands have been surveyed and buildings erected from the start with particular reference to sanitary detail. Transmissible diseases, therefore, have not seriously interfered with our development, as was the case in the earlier days of Costa Rica and Panama. Our statistics herewith appended show a decrease in malaria over last year, but, as extension of our planting into virgin forests will continue for years to come, and as malaria decreases only with sanitation, which is not possible in forest lands, our sanitary and protective measures against Anophelina have been directed to older farms and settlements. It is in these planted districts that we have conditions of health that favorably compare with those in the North, where seasonal change, the natural enemy of malaria, affords an immunity against that disease without the constant sanitary efforts necessary in the tropics.

The Company's Medical Service includes plantings along the coast westward through Stann Creek farms to British Honduras. Medical officers and dispensers are detailed as required by local conditions, but are under the jurisdiction of the central organization at Quirigua.—R. E. S.



NEW QUIRIGUA (GUATEMALA) HOSPITAL.

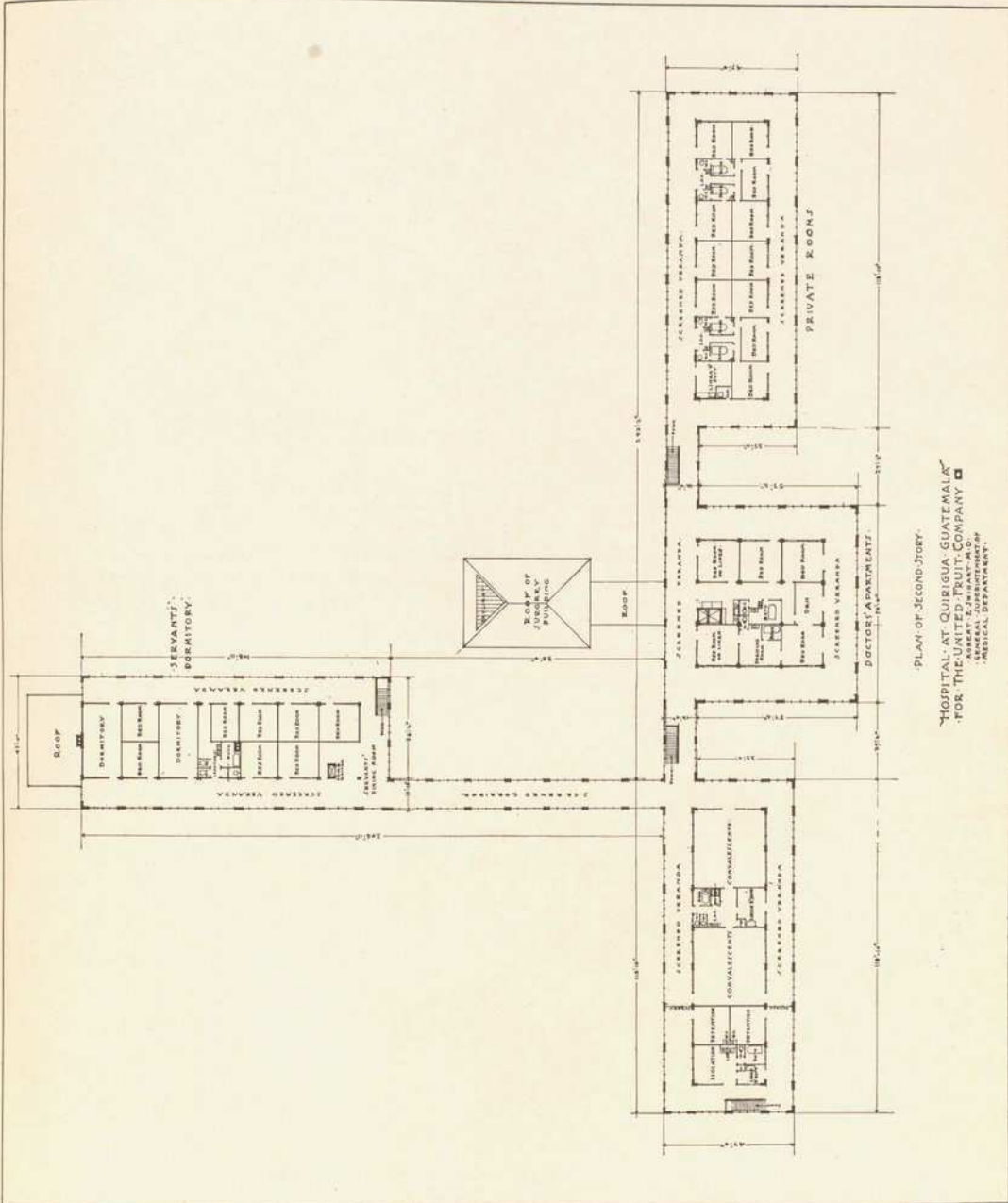
The perfectly screened houses of officers, cottages for minor employees and camps for laborers, with their cleanly environments conform in sanitary requirements to the recently erected concrete and steel hospital, perfect in detail, the finest structure of its kind found anywhere and accommodating 150 patients of all classes with corridor space for an overflow, if necessary.



PLAN OF FIRST STORY

HOSPITAL AT QUIRIGUA, GUATEMALA
 FOR THE UNITED FRUIT COMPANY
 ARCHITECT: J. J. WATSON
 GENERAL SUPERVISOR: J. J. WATSON
 MEDICAL DEPARTMENT: —

FIRST FLOOR PLAN, NEW QUIRIGUA (GUATEMALA) HOSPITAL.



PLAN OF SECOND FLOOR.
 HOSPITAL AT QUIRIGUA, GUATEMALA,
 FOR THE UNITED FRUIT COMPANY
 ARCHITECT: J. W. HARRIS
 GENERAL SUPERINTENDENT: J. W. HARRIS
 MEDICAL SUPERINTENDENT: J. W. HARRIS

RECORD OF HOSPITALS.

	Dartmouth Hospital.	Quirigua Sick-camp.	Total.
Remaining last year	44	8	52
Admitted during year	1,186	858	2,044
Died	60	9	69
Discharged	1,133	846	1,979
Remaining	37	11	48
Total number of hospital days	13,137	4,113	17,250
Number prescriptions issued	4,304	2,280	6,584
Operations with general anaesthesia	39	-	39
Operations with or without local anaesthesia	190	17	207
Number of patients deported as incurable	5	-	5

RECORD OF DISPENSARIES.

	Aztec Dispen- sary.	Barrios Dispen- sary.	Dart- mouth Dis- pensary.	Quirigua Dispen- sary.	Yuma Dispen- sary.	Total.
Number of patients	3,754	1,612	2,816	3,919	3,989	16,090
Employees treated	3,754	1,612	2,816	3,919	3,989	16,090
Visits to homes or camps,	126	130	135	110	50	551
Deaths	-	-	-	-	-	-
Number prescriptions is- sued	2,672	1,367	1,985	2,711	2,679	11,414

DISTRIBUTION OF PATIENTS TREATED AT HOSPITALS AND DISPENSARIES.

	Dartmouth Hospital.	Quirigua Sick-camp.	Aztec Dispensary.	Barrios Dispensary.	Dartmouth Dispensary.	Quirigua Dispensary.	Yuma Dispensary.	Total.
EL PILAR DISTRICT:								
Cherokee	13	44	-	-	5	21	106	189
Chickasaw	13	47	-	-	4	22	717	803
Choctaw	16	59	-	-	6	26	620	727
Creek	15	52	-	-	5	22	1,136	1,230
Seminole	7	41	-	-	5	6	421	480
Yuma	17	89	219	-	32	41	639	1,037
No definite residence	5	-	-	-	8	-	114	127
QUIRIGUA DISTRICT:								
Nahua	2	30	158	-	1	53	-	244
Yaqui	8	49	475	-	2	32	81	647
Puebla	5	52	244	-	-	84	-	385
Aztec	12	60	739	-	3	85	1	900
Maya	18	62	645	-	1	351	-	1,077
Toltec	9	20	197	-	1	294	-	521
Quirigua	214	169	169	-	97	2,637	148	3,434
Tahauna	10	43	615	-	5	125	-	798
Quiche	10	41	293	-	3	96	-	443
No permanent residence	2	-	-	-	10	-	-	12
LOS ANDES DISTRICT:								
Virginia	247	-	-	-	482	-	-	729
York	31	-	-	-	57	-	-	88
Mohawk	14	-	-	-	27	-	-	41
Seneca	26	-	-	-	85	-	-	111
Oneida	176	-	-	-	368	-	-	544
Dartmouth	62	-	-	-	730	-	-	792
Navajo	12	-	-	-	197	-	-	209
Cayuga	38	-	-	-	232	-	-	270
Pequot	32	-	-	-	194	-	-	226
Huron	13	-	-	-	16	-	-	29
PUERTO BARRIOS								
MISCELLANEOUS, FAMILIES, STEAMSHIPS, ETC.,	153	-	-	1,612	171	-	-	1,936
	6	-	-	-	69	24	6	105
TOTAL	<u>1,186</u>	<u>858</u>	<u>3,754</u>	<u>1,612</u>	<u>2,816</u>	<u>3,919</u>	<u>3,989</u>	<u>18,134</u>

TRANSMISSIBLE DISEASES AND WHERE CONTRACTED.

	Ankylo- stoma.	Cholera.	Diph- theria.	Dys- entery.	Gonor- rhea.	Malaria.	Plague.	Pneu- monia.	Small- pox.	Syph- ills.	Typhoid Fever.	Yellow Fever.	Total.
EL PILAR DISTRICT:													
Cherokee	-	-	-	4	1	80	-	-	-	-	-	-	85
Chickasaw	-	-	-	12	1	267	-	-	-	-	-	-	280
Choctaw	-	-	-	10	-	256	-	-	-	-	-	-	266
Creek	-	-	-	16	-	465	-	3	-	-	-	-	484
Seminole	-	-	-	12	-	220	-	-	-	-	-	-	232
Yuma	-	-	-	12	-	465	-	-	-	-	-	-	477
No permanent residence	-	-	-	1	1	59	-	-	-	-	-	-	61
QUIRIGUA DISTRICT:													
Nahua	-	-	-	-	1	169	-	-	-	-	-	-	170
Yaqui	-	-	-	5	-	378	-	-	-	-	-	-	383
Puebla	-	-	-	5	-	256	-	-	-	-	-	-	261
Aztec	-	-	-	2	1	428	-	-	-	1	-	-	431
Maya	-	-	-	3	1	616	-	-	-	-	-	-	621
Toltec	-	-	-	-	-	204	-	-	-	-	-	-	204
Quirigua	-	-	-	5	4	1,410	-	3	-	-	-	-	1,422
Tehuana	-	-	-	-	1	451	-	-	-	-	-	-	452
Quiche	-	-	-	2	-	253	-	-	-	-	-	-	255
LOS ANDES DISTRICT:													
Virginia	-	-	-	-	9	121	-	-	-	2	-	-	132
York	-	-	-	-	1	29	-	1	-	1	-	-	32
Mohawk	-	-	-	-	1	10	-	-	-	-	-	-	11
Seneca	-	-	-	-	-	52	-	1	-	1	-	-	54
Oncida	-	-	-	2	6	129	-	1	-	6	-	-	144
Dartmouth	4	-	-	1	4	209	-	4	-	7	-	-	229
Navajo	-	-	-	-	1	88	-	-	-	5	-	-	94
Cayuga	-	-	-	-	3	82	-	1	-	2	-	-	88
Pequot	-	-	-	-	7	80	-	-	-	1	-	-	88
Huron	-	-	-	1	1	4	-	-	-	-	-	-	6
PUERTO BARRIOS	-	-	-	9	9	378	-	2	-	4	-	-	402
TOTAL	4	0	0	102	53	7,159	0	16	0	30	0	0	7,364

TABLE SHOWING CLASSIFICATION OF DISEASES.

Diseases.	Dartmouth.		Quirigua.		Total.
	W.	B.	W.	B.	
GENERAL DISEASES.					
Malaria, Estivo-autumnal	9	—	—	2	11
Malaria, Tertian	46	125	—	—	171
Malaria, Undetermined	6	8	—	379	393
Malaria, Clinical	6	92	—	—	98
Malaria, Cachexia	2	41	—	—	43
Hemoglobinuric Fever	—	4	—	—	4
Dysentery	1	4	—	21	26
Inc. Dysentery, Amœbic	—	8	—	—	8
Inc. Dysentery, Bacillary	—	2	—	—	2
Inc. Dysentery, Clinical	1	3	—	—	4
Erysipelas	—	—	—	1	1
Mumps	—	13	—	1	14
Tuberculosis of the Lungs	2	18	—	1	21
Inc. Tuberculosis of Bones and Joints	—	1	—	—	1
Syphilis, Secondary	—	11	—	—	11
Syphilis, Tertiary	—	5	—	—	5
Soft Chancre	1	7	—	—	8
Inc. Adenitis, Chaneroidal	4	4	—	14	22
Gonococcus Infection	2	11	—	12	25
Inc. Gonorrhœa	3	13	—	11	27
Inc. Gonorrhœal Arthritis	—	3	—	—	3
Inc. Gonorrhœal Ophthalmia	—	1	—	—	1
Tumors (Tumors of the Female Genital Organs excepted)	—	1	—	—	1
Acute Articular Rheumatism	1	19	—	10	30
Chronic Rheumatism and Gout	1	17	—	3	21
Inc. Gout	—	1	—	—	1
Inc. Muscular Rheumatism	—	8	—	2	10
Leucæmia	—	3	—	—	3
Anæmia, Chlorosis	1	15	—	—	16
Inc. Anæmia, Primary, Pernicious	1	3	—	—	4
Other General Diseases	3	2	—	25	30
Alcoholism (Acute or Chronic)	1	—	—	—	1
Inc. Alcoholism, Acute	—	2	—	—	2
DISEASES OF THE NERVOUS SYSTEM AND OF THE ORGANS OF SPECIAL SENSE.					
Simple Meningitis	—	3	—	—	3
Other Diseases of the Spinal Cord	—	1	—	—	1
Cerebral Hemorrhage, Apoplexy	—	1	—	—	1
Softening of the Brain	—	1	—	—	1
Other Forms of Mental Alienation	—	5	—	—	5
Epilepsy	—	1	—	—	1
Convulsions (Non-puerperal)	—	5	—	—	5
Neuralgia	—	4	—	—	4
Neuritis	2	8	—	—	10
Tumor of the Brain	—	1	—	—	1
Neurasthenia	2	—	—	—	2
Other Diseases of the Nervous System	—	2	—	10	12
Follicular Conjunctivitis	—	5	—	1	6
Other Diseases of the Eye and its Annexa	2	10	—	7	19
Diseases of the Ear	4	4	—	14	22
DISEASES OF THE CIRCULATORY SYSTEM.					
Acute Endocarditis	—	3	—	—	3
Organic Disease of the Heart	1	6	—	8	15
Angina Pectoris	—	2	—	—	2
Embolism, Thrombosis	1	—	—	—	1
Hemorrhoids	3	—	—	—	3
Lymph Adenitis (Non-venereal)	—	2	—	—	2
Other Diseases of the Circulatory System	1	—	—	—	1

W. = White.

B. = Black or yellow.

Diseases.	Dartmouth.		Quirigua.		Total.
	W.	B.	W.	B.	
DISEASES OF THE RESPIRATORY SYSTEM.					
Myositis of Nasal Fossæ and Sinuses	-	1	-	-	1
Other Diseases of Nasal Fossæ	-	2	-	-	2
Laryngitis	-	2	-	-	2
Acute Bronchitis	5	25	-	12	42
Chronic Bronchitis	-	1	-	-	1
Broncho-pneumonia	-	1	-	-	1
Pneumonia (unqualified)	-	4	-	2	6
Lobar Pneumonia	-	24	-	1	25
Pleurisy	-	6	-	-	6
Asthma	2	3	-	1	6
DISEASES OF THE DIGESTIVE SYSTEM.					
Diseases of the Teeth and Gums	-	3	-	-	3
Stomatitis	-	1	-	-	1
Other Diseases of the Mouth and Annexa	-	3	-	18	21
Follicular Tonsillitis	2	3	-	-	5
Acute Gastritis	6	3	-	-	9
Chronic Gastritis	2	3	-	15	20
Acute Indigestion	18	42	-	-	60
Other Diseases of the Stomach (Cancer excepted)	1	-	-	-	1
Diarrhœa and Enteritis (under two years)	-	4	-	-	4
Diarrhœa and Enteritis (two years and over)	4	21	-	3	28
Ankylostomiasis	1	1	-	16	18
Tape-worm	1	1	-	-	2
Other Intestinal Parasites	-	1	-	-	1
Appendicitis and Typhlitis	1	-	-	-	1
Inc. Inguinal Hernia	-	4	-	-	4
Diseases of the Anus and Fecal Fistulas	4	2	-	12	18
Cirrhosis of the Liver	-	2	-	-	2
Biliary Calculi	1	-	-	-	1
Abscess of Liver (unqualified)	-	1	-	-	1
Jaundice	-	5	-	-	5
Other Diseases of the Liver	-	2	-	-	2
Diseases of the Spleen	1	1	-	-	2
Other Diseases of the Digestive System (Cancer and Tuberculosis excepted)	1	10	-	-	11
NON-VENEREAL DISEASES OF THE GENITO-URINARY SYSTEM AND ANNEXA.					
Acute Nephritis	1	4	-	-	5
Bright's Disease (Chronic Nephritis)	-	7	-	-	7
Calculi of the Urinary Passages	1	-	-	-	1
Inc. Cystitis	1	1	-	-	2
Stricture of the Urethra	-	2	-	-	2
Hydrocele	-	1	-	-	1
Other Non-venereal Diseases of the Male Genital Organs	-	3	-	-	3
THE PUERPERAL STATE.					
Accidents of Pregnancy	-	1	-	-	1
DISEASES OF THE SKIN AND OF THE CELLULAR TISSUE.					
Gangrene	-	2	-	-	2
Furuncle	1	1	-	12	14
Inc. Carbuncle	2	1	-	-	3
Acute Abscess	11	36	-	21	68
Inc. Phlegmon	-	1	-	-	1
Trichophytosis	6	1	-	-	7
Scabies	3	1	-	-	4
Other Diseases of the Skin and Annexa	-	6	-	2	8
Myositis of Skin	-	1	-	-	1

W. = White.

B. = Black or yellow.

Diseases.	Dartmouth.		Quirigua.		Total.
	W.	B.	W.	B.	
Prickly Heat	2	-	-	-	2
Ulcer of the Skin	1	55	-	24	80
Tropical Ulcer	-	10	-	-	10
Impetigo Contagiosa	1	-	-	-	1
Urticaria	-	3	-	-	3
DISEASES OF THE BONES AND ORGANS OF LOCOMOTION.					
Mastoid Abscess	-	1	-	-	1
Other Diseases of the Bones (Tuberculosis excepted).	-	2	-	-	2
Synovitis	1	2	-	-	3
Amputations	-	7	-	-	7
Other Diseases of the Organs of Locomotion	2	-	-	-	2
DISEASE OF EARLY INFANCY.					
Lack of Care	-	1	-	-	1
AFFECTIONS PRODUCED BY EXTERNAL CAUSES.					
Venomous Bites and Stings	-	1	-	-	1
Inc. Snake Bites	-	2	-	-	2
Burns (Conflagration excepted)	1	2	-	1	4
Traumatism by Firearms	-	10	-	1	11
Traumatism by Cutting or Piercing Instruments	4	58	-	194	256
Traumatism by Fall	6	25	-	-	31
Traumatism by Machines	-	2	-	-	2
Traumatism by Other Crushings (vehicles, railroads, landslides, etc.)	6	13	-	-	19
Inc. Heat Exhaustion	1	-	-	-	1
Homicide by Cutting or Piercing Instruments	-	-	-	1	1
Sprains	2	3	-	-	5
Fractures (cause not specified).	3	6	-	-	9
Other External Violence	1	3	-	-	4
ILL-DEFINED DISEASES.					
Inc. Infections of Undetermined Origin	1	5	-	-	6
TOTAL	215	971	-	858	2,044

W. = White. B. = Black or yellow.

SURGICAL REPORT.

Operations with General Anæsthesia:			
Amputation of Arm	3	Operation for Empyæma	2
Amputation of Finger	2	Operation for Osteomyelitis, Femur	1
Amputation of Leg	1	Opening Deep Abscesses	7
Amputation of Metacarpal and Finger	2	Removal of Hemorrhoids	2
Amputation of Toes	1	Repair of Abdominal Wall	1
Circumcision	3	Scraping Anal Fissure	1
Curetting Uterus	2	Scraping Tibia, Necrosis	1
Enterorrhaphy	1	Scraping Diseased Ribs	1
Laparotomy	1	Tendon Suture	1
Mastoid Abscess	1	Trephining Skull	1
Miscellaneous	4		39
Operations without or with Local Anæsthesia:			
Aspiration of Bladder	2	Opening Abscesses	70
Circumcision	1	Removal of Hemorrhoids	7
Dilating Strictures	4	Removal of Foreign Bodies	5
Fistula in Ano	1	Tooth Extractions	93
Hydrocele tapped	2	Wounds stitched	13
Miscellaneous	9	Total	207

LABORATORY RECORD.

Blood Examinations:	
Estivo-autumnal	18
Tertian	95
Negative	48
	<hr/> 161
Sputum Examinations:	
Positive to Tubercle Bacillus	27
Positive to Pneumococcus	13
Negative	21
	<hr/> 61
Urine Examinations:	
Albumen	29
Casts	8
Pus	11
Sugar	3
Blood	3
Negative	63
	<hr/> 117
Fæces:	
Ankylostoma Duodenale	28
Ascaris Lumbricoides	10
Tricocephalus Dispar	13
Blood	1
Negative	17
	<hr/> 69
Smears (Miscellaneous):	
Gonococci	10
Ducrey's Bacillus	2
Pyogenic	4
	<hr/> 16



TYPE OF HOUSE FURNISHED EMPLOYEES GUATEMALA DIVISION.

SANITARY REPORT.

Rainfall (Month): Average, 8.9. Maximum, 17.40. Minimum, 2.32.
 Temperature (Month): Average, 77.82. Maximum, 92. Minimum, 63.

Quarters:	
Number of laborers' camps constructed	99
Number of laborers' camps repaired	49
Old laborers' camps condemned or demolished	10
New houses for whites constructed	12
Old houses for whites repaired	27
Houses in which defective screens were repaired	52
Plumbing and Sewerage:	
New sanitary plumbing installed	13
Sanitary plumbing repaired	33
Water Supply:	
Kind of water in use	Rain and river
Number of new water tanks built and screened	73
Number of old water tanks repaired and screened	30
Garbage:	
Number of times per week garbage is collected	2
Yard:	
Number of square feet of grass or bush cut around or near quarters or camps	5,358,968
Drains:	
Number of feet of new ditches dug in vicinity of quarters for sanitary reasons	7,641
Number of feet of ditches cleaned for sanitary reasons	35,833
Number of times camps are inspected by farm runners	Twice weekly
Presence of pests	Rats and mosquitoes present
Presence of sickness, live stock	No serious diseases

EXTRACT OF LETTER OF TRANSMITTAL.

QUININE PROPHYLAXIS has been encouraged as far as possible, and all dispensers supplied with a stock of this drug, and carefully instructed in administering same. The health of laborers throughout the Division has been very satisfactory. While there have been a considerable number of malarial cases treated, there has been a marked diminution in the number of Estivo-autumnal infections, only two having been admitted in a comatose condition. The only disease of epidemic nature which appeared in the Division during the year was mumps. For three months, April, May, and June, there were numerous cases in the camps, and sporadic cases have appeared from time to time. A number of these were followed by orchitis. Blackwater fever and pneumonia have decreased as compared with the past fiscal year, though the cases of the latter which presented themselves were more severe and had a larger death-rate than those treated in previous years. Five laborers were deported, their cases having been regarded as incurable. The natives have given much less trouble than in former years. They, to a large extent, have realized the value of quinine as a

prophylactic, and mosquito nets in their camps are more in evidence than in the past. There have been 69 deaths, 60 in Dartmouth Hospital and 9 in Quirigua sick-camp, as follows:—

Pneumonia	15	Machete Wounds	1
Tuberculosis	11	Traumatism by Firearms	1
Estivo-autumnal Malaria	8	Burns	1
Dysentery	4	Homicide	1
Organic Disease of the Heart	3	Cirrhosis of the Liver	1
Nephritis and Uræmia	3	Senility	1
Multiple Neuritis	3	Apoplexy	1
Meningitis	3	Gangrene of the Arm	1
Endocarditis	2	Broncho-pneumonia	1
General Paralysis	1	Train Accident	1
Dementia	1	Epilepsy	1
Chronic Diarrhœa	1	Liver Abscess	1
Malarial Cachexia	1	Acute Enteritis	1

CEMETERY.—There were 69 patients buried during the year, 44 being native laborers, 23 West Indian negroes, and 2 white men, an American locomotive engineer and a German laborer.—N. P. MACP.

WATER SUPPLY AND DISPOSAL OF SEWAGE.—For the purification of sewage accruing from the hospital at Quirigua, as well as from various habitations included in the settlement at that place, there has been designed and built a digestive or septic tank of the so-called Imhoff pattern. The ordinary septic tank contemplates the isolation of all putrefactive substance in sewers, with proper appliances to prevent the escape of solids after undergoing the disintegrating process in the settling tank. The Imhoff pattern is designed to separate the fresh sewage from the stale or putrid portion, which at the same time permits the solids in suspension to be deposited where they may be promptly made inert by anærobic bacteria. The delivery of sewage, in volume will exceed 15,000 gallons. The tank is supplied with an automatic discharge to accommodate 25,000 gallons per day, if necessary. The plant is situated in a convenient place for collecting sewage, equipped with a high corrugated iron fence which, it is believed, will materially assist in ventilation. The discharge is carried into a pasture, and there broadly distributed over an area of several acres. A sufficient elevation is provided, so that filtration beds may be installed, if necessary, for the reception of sewage. It is contemplated that disintegrated sludge from the tank will not be withdrawn more than twice a year, and arrangements have been made for doing this with the least amount of trouble and expense.

WATER SUPPLY.—Water for flushing and bathing is pumped from the Quirigua River above the line of habitations, by a small gasoline engine actuating duplex pumps through 5,000 feet of 4-inch pipe, to a reinforced concrete reservoir situated on a hill at the back of the hospital. This same reservoir has also a second story, so situated to take the rainfall discharged from the roof of one of the wings of the hospital.

A separate system of supply over the hospital is installed from this reservoir for drinking purposes, the main part serving as a distributing reservoir for the entire district.—T. H. B.

DISTRICT MEDICAL SERVICE.

FIELD WORK.—All camps in the Division, with few exceptions, have been patrolled twice each week by dispensers, whose duty it is to make house-to-house inspections, treating all minor cases of illness, dressing all cases of minor surgery, and arranging for removal of all serious



TYPE OF RESIDENCE SHOWING ITS PROPERLY SCREENED VERANDAS AND CLEANLY ENVIRONMENTS, GUATEMALA DIVISION.

cases to sick-camp or hospital. The medical officers have visited the various camps routinely once a month, and in many of the districts twice a month, while special visits have been made as necessity arose.

EMPLOYEES AND DEPENDENTS.—In the Guatemala Division there are about 210 foreign white employees. Laborers of all classes total around 4,000, and many of them have wives and families, who for the most part depend on the Medical Department for attention during illness. A fair estimate of the wives, children, and dependents, would be 4,200.

PRESCRIPTIONS ISSUED.—There have been 11,414 prescriptions issued through the out-patient department. These include prescriptions dispensed at the various dispensaries, but do not include these cases treated from the medicine-case of the physician or dispenser while

making the rounds of camps. There were 6,584 prescriptions dispensed for patients in Dartmouth Hospital and Quirigua Camp Hospital.

QUARANTINE.—No diseases of a quarantinable nature have originated in the Division, nor have any been imported during the year.

PERSONNEL.

Name.	Position.	School of Graduation.
Dr. Neil P. Macphail	Superintendent	Aberdeen University
Dr. David C. Alexander	Assistant Surgeon	Edinburgh University
Ellen C. McArdle	Matron	Massachusetts General Hospital
Martin J. Connelly	Steward	
Mary L. Douglas	Nurse	Graduate, U.S.A.
Louisa Kurath	Nurse	Graduate, U.S.A.

TOTAL NUMBER OF EMPLOYEES OTHER THAN DOCTORS, 23.

Dispensers	6	Yardmen	3
Clerk	1	Wardmen	3
Nurses	5	Laundresses	2
Cooks	2	Watchman	1

PATIENTS ASSISTED TO THEIR HOMES DURING YEAR.

Nationality.	Disease.	Number.
Jamaica	General Debility	1
Jamaica	Neuritis and Dilatation of Heart	1
Jamaica	Pyo-thorax	1
Spain	Malaria Cachexia	1
Total		4

DEATH REPORT OF EMPLOYEES.

Name.	Nationality.	Occupation.	Age.	Sex.	Cause of Death.
Avelardo Clesso	Mexican	Plumber	38	M.	Liver Abscess
John Danvas	Jamaican	Laborer	25	M.	Bright's Disease
Francisco Esquivel	Guatemalan	Laborer	65	M.	Tuberculosis
Wilfred Cooper	Jamaican	Clerk	27	M.	Bright's Disease
Lazaro Lopez	Honduranean	Laborer	22	M.	Pneumonia
Albert Barnett	Jamaican	Laborer	24	M.	Pernicious Malaria
Avelardo Aniaza	Guatemalan	Laborer	17	M.	Meningitis
Juliano Santiago	Guatemalan	Laborer	39	M.	Dysentery
Roberto Paz	Honduranean	Laborer	16	M.	Pneumonia
Pedro Salgero	Guatemalan	Laborer	38	M.	Endocarditis
William Fergusson	Jamaican	Laborer	30	M.	Phthisis
Hory Suhr	German	Laborer	40	M.	Acute Endocarditis
Elias Lamus	Guatemalan	Laborer	20	M.	Lobar Pneumonia
Trinidad Costa	Honduranean	Contractor	40	M.	Acute Phthisis
William Trotman	Barbadian	Laborer	20	M.	Phthisis
Sebastian Jimenez	Guatemalan	Contractor	40	M.	Broncho-pneumonia
Hilario Mungillo	Guatemalan	Contractor	20	M.	Train Accident (Amputation)
Henry Cox	Jamaican	Laborer	20	M.	Epilepsy
Beobelo Cortez	Guatemalan	Laborer	33	M.	Amputation of Arm for Gangrene
Casimero Ruan	Guatemalan	Laborer	23	M.	Lobar Pneumonia
Julio Cruz	Guatemalan	Laborer	40	M.	Pneumonia and Meningitis
Jacinto Gonzales	Guatemalan	Laborer	23	M.	Trephining (Traumatic)
Name (unknown)	Guatemalan	Laborer	-	M.	Pneumonia
Edward Chambers	Jamaican	Contractor	23	M.	Phthisis
James Carter	Jamaican	Laborer	23	M.	Phthisis
Thos. Williams	Jamaican	Laborer	71	M.	Semility
Antoine Sweeden	American	Foreman	45	M.	Mitral Stenosis
Francisco Agular	Guatemalan	Laborer	30	M.	Pneumonia
Robert Smith	Jamaican	Contractor	28	M.	Pneumonia and Meningitis
David Miller	Trinidadian	Carpenter	51	M.	Pneumonia
Name (unknown)	Guatemalan	Laborer	-	M.	Apoplexy
Salvador Mollinedo	Guatemalan	Laborer	33	M.	Neuritis and Dilatation of Heart
Mejmo Mendez	Guatemalan	Laborer	15	M.	Double Pneumonia
Munga Singh	East Indian	Laborer	25	M.	Cirrhosis of Liver
Peter Jones	British Honduranean	Laborer	26	M.	Nephritis and Uremia

DEATH REPORT OF EMPLOYEES—Continued.

Name.	Nationality.	Occupation.	Age.	Sex.	Cause of Death.
Antonio Sentena	Guatemalan	Laborer	37	M.	Dysentery
Manuel Ramirez	Guatemalan	Laborer	32	M.	Malarial Coma
José Moralez	Guatemalan	Laborer	21	M.	Pernicious Malaria
Miguel Aguilar	Guatemalan	Laborer	24	M.	Lobar Pneumonia
Hubert Shaw	Jamaican	Laborer	43	M.	Mitral Regurgitation
Victor Sandoval	San Salvador	Laborer	22	M.	Meningitis
Adela Ruis	Guatemalan	Laborer	22	M.	Phthisis
Esejia Rojas	Colombian	Laborer	28	M.	Pernicious Malaria
Denacio Rodriguez	Honduranean	Laborer	36	M.	Pernicious Malaria
Manuel Rivas	Guatemalan	Laborer	32	M.	Homicide
Candelario Guerra	Mexican	Laborer	36	M.	Phthisis
Alexander Reid	Jamaican	Laborer	23	M.	Phthisis Pulmonalis
S. L. Beekley	American	Engineer	42	M.	Accidental Burns
Trinidad Tobar	Guatemalan	Laborer	29	M.	Multiple Neuritis
Alejandro Melgar	Guatemalan	Laborer	18	M.	Malaria (Estivo-autumnal)
Samuel Wallace	Jamaican	Laborer	28	M.	Lobar Pneumonia
Victor Estelate	Panamanian	Foreman	22	M.	Machete Wounds
Rafael Mendez	Guatemalan	Laborer	34	M.	Organic Disease of the Heart
Inez Catalang	Guatemalan	Cook	23	F.	Traumatism by Firearm
Hencio Miguel	Guatemalan	Laborer	28	M.	Malaria
John Leo (Carib)	British Honduranean	Laborer	64	M.	Multiple Neuritis
Charles Blake	Jamaican	Laborer	46	M.	Dementia
Alejandro Oliva	Guatemalan	Laborer	28	M.	Pneumonia
Ramos Onofre	Guatemalan	Laborer	30	M.	Chronic Diarrhoea
Edward Black	Jamaican	Laborer	23	M.	Tuberculosis
Manuel Curtez	Guatemalan	Laborer	22	M.	Dysentery
Alao Tecora	Guatemalan	Laborer	52	M.	Malaria Cachexia
Santiago Pice	Guatemalan	Laborer	27	M.	Tuberculosis and Pneumonia
Thos. Cardoron	Guatemalan	Laborer	29	M.	Pernicious Malaria
Chas. Thomas	Jamaican	Contractor	29	M.	General Paralysis
James Nesbeth	Jamaican	Laborer	46	M.	Nephritis and Uremia
Manuel Rivas	Guatemalan	Laborer	38	M.	Lobar Pneumonia
Ricardo Estrado	Guatemalan	Laborer	34	M.	Lobar Pneumonia
James Williams	Jamaican	Laborer	26	M.	Lobar Pneumonia

UNITED FRUIT COMPANY

General Offices: Boston, Massachusetts

MEDICAL DEPARTMENT

TWENTIETH
ANNUAL REPORT



1931

VERPOOL
SCHOOL
OF
TROPICAL
MEDICINE



UNITED FRUIT COMPANY HOSPITAL AT QUIRIGUA, GUATEMALA (FRONT VIEW)



UNITED FRUIT COMPANY HOSPITAL AT QUIRIGUA, GUATEMALA (REAR VIEW)

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SPECIAL COMMENT

The author of each paper is afforded an opportunity to give free expression to his own ideas on the subject of the article, and it is understood that he is solely responsible for the opinions expressed and the statements made therein.

SECTION I

UNITED FRUIT COMPANY
MEDICAL DEPARTMENT

R. C. CONNOR, M.D.
GENERAL MANAGER

CABLE ADDRESS
UNIFRUITCO, NEW YORK

Pier 3, North River,
New York, N. Y.
May 1, 1932

Mr. V. M. Cutter, President
United Fruit Company
Boston, Massachusetts

Dear Sir:-

The annual Report of the Medical Department of the United Fruit Company for the fiscal year ended December 31st, 1931, is herewith submitted.

The Medical Department of the United Fruit Company and the world of tropical medicine in general suffered a great loss through the death of Dr. W. E. Deeks, on July 24th, 1931. By his sincere devotion to and intense interest in tropical diseases and preventive medicine, his thorough knowledge of the problems encountered in the warmer climates and the measures necessary to cope successfully with them, his numerous contributions to medical literature which he utilized as a medium for distributing widely among his fellow members of the medical profession the wisdom that he had gained from long practical experience and application so that it might be used for the general good of humanity, and his extensive contacts with people in all walks of life while pursuing his untiring and altruistic efforts to serve mankind; he achieved an outstanding recognition in medical circles throughout the world. His loss will be felt keenly for years to come.

No other important changes occurred in the personnel of the Medical Department during 1931. Furthermore, while material retrenchments have been made in the expenditures of the Department as a consequence of the continued financial depression, it is gratifying to state that it has not seriously handicapped the efficiency of our organization nor affected us in our efforts to maintain satisfactory health and sanitary conditions in the localities where our Company operates.

The vast improvement in transportation facilities, in the Cuban Divisions, has greatly expedited the conveyance of patients; and sick or injured persons from any locality in the plantations can reach a Hospital Dispensary or a Hospital without delay or inconvenience. Furthermore, the energetic and sustained campaigns waged during recent years against malaria and other preventable

diseases has reduced morbidity in these Divisions to a very low rate. Under the circumstances, it has been considered advisable to consolidate the two Hospitals located formerly at Banes and Preston respectively; and all patients from both Divisions are now hospitalized in the Preston Hospital, with the exception of emergency and special cases which are temporarily hospitalized in the Banes Hospital. The accommodations and equipment of the Preston Hospital, supplemented by the Hospital Dispensaries located in farm centers and by the Banes Emergency Hospital, are such that the Medical Department of the Cuban Divisions continues to render prompt and efficient medical attention to all the employees and members of their families. Despite the fact that the organization was not functioning as one unit until the latter part of 1931; the statistics of the Medical Departments of the Preston Division and the Banes Division have been combined in this Report under the designation of "Cuban Divisions," as they will operate as one Department hereafter.

No serious epidemics of contagious or infectious diseases have occurred in any of our Divisions during the course of 1931; nor have we been confronted with any unusual or alarming situations in our efforts to control endemic and pandemic diseases. Elsewhere in this publication we have reviewed briefly the morbidity and mortality statistics for the more important and more prevalent ailments encountered, and have commented concisely upon them.

Members of our own medical staff, as well as individuals outside of our organization, have pursued certain lines of investigation during 1931 which we feel will develop new and improved methods for coping with malaria, dysentery and other diseases endemic in the tropical countries where we operate. Papers are published in this Report which record the present status of these investigations.

It is our desire to acknowledge our appreciation of the cooperation which we have received from various outside organizations; and particularly from the United States Public Health Service, the Rockefeller Foundation, and the Gorgas Memorial Laboratory. We are also indebted to Dr. H. C. Clark, Dr. W. M. James, Dr. R. P. Strong, and Dr. T. T. Mackie for valuable contributions to our Annual Report.

It is superfluous, perhaps, to state that any success which the Medical Department has attained in its efforts to maintain satisfactory health and sanitary conditions in the various localities where the Company operates is largely due to the liberal and farsighted policy of the executives and Directors of the United Fruit Company and to the loyal and wholehearted assistance rendered by all employees in charge of various operating units of the Company's organization—nevertheless, we desire to take this opportunity to express our sincere gratitude.

Respectfully,

R. C. Connor