



GROUP ON EFFICIENCY OF LABOR

Reading from left to right: Sitting—Jas. A. Green, William Worthington, D. B. Meacham, John V. Farwell, Jr. (Chairman), J. W. G. Cofran, H. J. McFarland. Standing—Murray Carleton, W. D. Mandell, Nathaniel Henchman Davis, Charles S. Dennison.

Passing now to the skilled labor: this force has been recruited almost entirely from the United States. The method now employed to secure it is by employment agencies at home. Inquiry is there made as to the qualifications of applicants, and on arrival the men are assigned to the class of work with which they are familiar. Naturally the scale of wages, which includes free lodging, light, fuel, water and hospital service, is higher than is paid for similar work at home.

Eight hours constitute a day's work: from 7 to 11 a. m. and from 1 to 5 p. m., and each man is entitled to forty-two days vacation, and if he needs it, to thirty days sick leave, on full pay.

The inducements offered have been sufficient to tempt an adequate supply of competent men. Of course some come who are unfitted for the work, and others who, though fit, have not the adaptability to meet the surroundings. These are dismissed as soon as their deficiency is discovered. But the good man stays, is pleased with his work, and makes more money than he could at home.

As vacancies occur in the higher ranks they are filled, if practicable, from below, and some of the men whom we met have reached their present positions by several promotions from inferior positions in which they had proved their capability.

The chiefs with whom we came in contact impressed us as a highly intelligent, picked force—such a representation as might be expected from pursuing the principle of the survival of the fittest.

We made inquiry as to the efficiency of the labor, both skilled and unskilled, as affected by climate, and as to the difference in the product of a day's labor on the Isthmus, compared with that of the same type of man at home, and were told there was practically no difference aside from the allowance already mentioned for vacation and sick leave. That this will continue indefinitely for the whole body of skilled labor may be doubted, as eighteen months or two years seems too short a period from which to draw such a conclusion. But past experience proves at least that the tropical climate has not the enervating influence upon the efficiency of the healthy man interested in his work that had been feared.

As to the unskilled labor there need be no apprehension, for the climatic conditions are those to which the men of that class are accustomed.

We asked also as to the difficulties in handling labor from insubordination, strikes and other troubles, and were advised that none had been experienced or was apprehended. We heard of but one organized labor union, that of the steam shovellers, consisting of 180 men.

The situation is so different here from that in the normal labor market that the occasion for such troubles is not likely to arise. There is but one employer and house owner, and he cannot be expected to furnish lodgings to those who do not work. Those who quit work will be compelled by force of circumstances to go elsewhere, and cannot stay and intimidate those who wish to continue.

In conclusion we wish to call attention to the sympathy with the work and the zeal and intelligence of the men with whom we came directly in contact. They were young men and picked men. One and all, they spoke with unhesitating faith in commendation of the plan of the work, of the ability of the Chief Engineer, and of his fidelity and zeal, and of the practicability of completing the Canal upon the lines now proposed.

And they bore witness to the existence of a like faith in those under them, and of competition among them as to who should make the best showing for his day's work, if an artisan, or for his squad or department, if of higher grade.

We believe that the men in charge have solved the labor problem, and we have only words of praise for what they have accomplished. They have created an *esprit de corps* which has permeated the whole body of men under them, and will lead to a zealous prosecution of the work. It is of the utmost importance that the spirit thus inculcated should be fostered and encouraged by all in whose hands the execution of this stupendous task will fall.

JOHN V. FARWELL, Jr., Chairman,
MURRAY CARLETON, D. B. MEACHAM,
NAT. HENCHMAN DAVIS, WM. WORTHINGTON,
H. J. MACFARLAND, J. W. G. COFRAN,
CHAS. S. DENNISON, WM. D. MANDELL,
JAMES A. GREEN.

At the conclusion of the reading of the report, Mr. Campbell, of Cincinnati, arose and addressed the Chair. He said:

"There is one point in this report that seems to me to be unreliable or incorrect. That is that the skilled labor receives higher wages on the Isthmus than at home. My information is that skilled laborers receive less than in the States."

On behalf of the Committee, Mr. Worthington replied:

"When you take into consideration what they get free, such as lodging, fuel, water, light and hospital service, their wages are greater than at home."

Mr. Farwell added:

"Engineers, for example, on the railway, receive \$180 a month, besides getting forty-two days' vacation a year and thirty days' sick leave, if needed."

Mr. McCormick had made inquiry on this specific point. He said:

"I asked Mr. Beird, the general manager of the Panama Railroad, and he said the engineers all get more in the Canal Zone than in the United States."

Mr. Goepper ended the discussion on that point by saying:

"The truth of that statement is apparent; if they did not get more they would not remain there."



A PANORAMA VIEW OF THE ZONE

The valley here shown will be covered by Gatun Lake, twenty miles long and eight miles wide.



GROUP ON PROGRESS OF THE CANAL WORK

Reading from left to right: Sitting—J. T. Carew, L. W. Noyes, Robert Moore (Chairman), Thos. P. Egan, H. C. Yeiser.
Standing—Cyrus H. McCormick, Charles W. Durrell, Henry C. Scott, Harry L. Rice.

For the group on Progress of the Work, the Chairman, Mr. Moore, of St. Louis, read the following report:

To properly understand and appreciate the progress made it is necessary to take into account the fact that less than three years ago, when the government undertook to construct the Canal, there was no organization and nothing but obsolete tools with which to work, nor was the type of Canal definitely decided upon by Congress until June 30, 1906.

Before work could begin in anything more than a tentative way, it has been necessary to make new surveys and plans; to organize a civil government; to do an enormous work of housing and sanitation; to practically reconstruct the railroad; to order, to transport for thousands of miles and to assemble the largest construction plant ever brought together; to create an organization and to gather an army of laborers, skilled and unskilled, by whom the work should be done—an army which during the wet season of eight months is compelled to work under very adverse conditions.

But all this, though not yet completed, has been so far accomplished that at the most important and critical points—Gatun locks and the great summit cut from Bas Obispo to Pedro Miguel—work is now in operation at a rate which has increased from 178,000 cubic yards in July, 1906, to 500,000 cubic yards in February, 1907, and which promises in a few months to exceed 1,000,000 yards per month.

Assuming that there will be no substantial change in the present plans or methods of work, we see no reason to question the estimate of the engineers that the Canal will be open for traffic in eight years, *i. e.*, by January 1st, 1915.

ROBERT MOORE, Chairman,
CYRUS H. McCORMICK, C. H. THORNE,
HENRY C. SCOTT, H. C. YEISER,
H. L. RICE, THOMAS P. EGAN,
LAVERNE W. NOYES, CHARLES W. DURRELL,
W. K. BIXBY.

Mr. Elihu Thomson, Chairman, presented and read the following report for the group on the Efficiency of the Plant, including the Railroad:

The economical and rapid construction of the Canal depends on maintaining its construction and transportation plant at its highest possible efficiency.

Shops: We found the machine and other shops for repairs and maintenance, as well as for the production of parts needed in the work, to be of ample capacity and to possess a good equipment of tools and machinery. It appeared also to your Committee that the men were well adapted to operating this machinery, and the force was sufficient.

Docks and Terminals: On the Atlantic side the dock facilities, including conveyors, appear to be modern and ample, and the railway terminals well arranged for storage and service with a capacity of 1,000 cars, and for 500 more in the storage yards. The same general condition of things seems to exist on the Pacific side.

Railroad: Of the Panama Railroad, thirty-six miles have been double tracked and stone ballasted, leaving nine miles yet to be double tracked; the total mileage being forty-five miles. All of the railway has been relaid with seventy-pound steel rails. A crushing plant for making stone ballast, with a capacity of 900 tons daily, is in operation. The labor available seemed ample for the purpose of operation.

Railway Equipment: The railway equipment of locomotives will be completed when the orders of twenty additional locomotives are filled and those on the ground are assembled and in operation.

The same thing can be said of the car equipment—but at present there is a great car shortage, which is now the most serious obstacle to rapid construction. This refers of course to cars intended for construction and dumpage. While some of the French car equipment is used, it is to be replaced as soon as possible by the modern plant for the reason that is of limited capacity.

Compressed Air Plant: In the compressed air plant for operating drills, hoists, etc., there are twelve compressors of 2,500 cubic feet of air per minute—a capacity which seems to be ample for the requirements.

Coal Shutes: The coal shutes which have been established are apparently modern and well equipped.

Foundries: There are foundries for making cast iron castings, in which the principal source of material is French scrap, with a small addition of pig iron.

Operation and Earnings of Railroad: For general information it may be of use to note that the commercial freight handled per month on the Panama Railroad has increased from about 40,000 tons in August, 1905, to over 96,000 tons in January, 1907. The cost of delivery on the docks per ton is now fifty-one cents, having been reduced from seventy-one cents. The total cost of operating the Panama Railroad is now fifty-nine per cent, reduced from eighty per cent of the gross receipts. The cost per ton mile, which was in December 1905, \$.0634, was in December, 1906, reduced to \$.0422. The earnings per ton mile during the same period increased from \$.068 to \$.071.

Steam Shovel Equipment: The steam shovel equipment is standard and we are informed is quite effective for the work in hand. So far as known, its capacity is much ahead of the capacity for transportation and disposal of the dirt. It is in fact working at about fifty per cent capacity. This it is expected will be remedied when the cars and locomotives now ordered and the additional trackage contemplated are in full service.

Dredging: Before the completion of the Canal there will be needed a considerable amount of dredging, but that stage has not been reached, and the plant for it cannot be dealt with here.

Old Plant: While some of the French machinery is being used in the interim, most of it, on account of it being obsolete, and of limited capacity, has been abandoned, and when the plant is completed with its modern equipment, all the rest should naturally be likewise abandoned, as it belongs to a period more than twenty years back, which fact forbids its economical operation at the present time.

Men: So far as we could learn from our intercourse with the engineers and the people in charge of the various departments with whom we came in contact, they are capable, enthusiastic and energetic men, and seem to have their work well in hand.

Conclusion: In general, it may be said that it appeared to us that the plant, when completed, will be well balanced and capable of being used economically to accomplish the work for which it has been established.

ELIHU THOMSON, Chairman,

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| E. G. COWDERY, | WALTER H. WILSON, |
| R. H. W. DWIGHT, | JOHN OMWAKE, |
| J. B. RUSSELL, | F. A. GEIER, |
| W. J. CHALMERS, | J. T. CAREW, |
| ROLLA WELLS, | J. D. BASCOM. |

As the reading of the reports progressed, the satisfaction of the general body with the work performed by the groups was shown in frequent and emphatic applause. Each report was passed upon by a motion to accept, which was carried unanimously. When the last report was accepted, Mr. Francis, of St. Louis, said:

“Gentlemen, I do not know how these reports impress you, but I feel like paying my respects to the Committee which

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GROUP ON EFFICIENCY OF THE PLANT

Reading from left to right: Sitting—R. H. W. Dwight, W. K. Bixby, Rolla Wells, Elihu Thomson (Chairman), Wm. J. Chalmers, Jos. B. Russell. Standing—J. D. Bascom, Walter H. Wilson, Fred. A. Geier, John O'wake, E. G. Cowdery.

outlined this plan of inspection, and personally I can see no objection to authorizing our press representative to give these reports, as written, to the public.

"In order to bring this matter before the meeting, if the stenographer can take down a motion, I shall be pleased to make one, if you will, Mr. Chairman, recognize me for that purpose."

Upon being requested to proceed, Mr. Francis offered the following:

The Commercial Clubs of Boston, Chicago, Cincinnati and St. Louis, having visited the Canal Zone, and having given such inspection to the work as their time permitted, and having been pleased with the progress of the work, give the following as their conclusions:

That the decision of the United States to connect the waters of the Atlantic and Pacific Oceans by a Canal across the Isthmus of Panama was wise and timely.

That the purchase by the United States of all of the rights and property of the Panama Canal Company for a consideration of \$40,000,000 was a judicious investment.

That this great undertaking should be considered a national enterprise in which every American citizen should cherish a proprietary interest.

That the work should be pushed with all possible vigor to the earliest practicable completion, and such means should be provided and such instrumentalities should be employed as will conduce most effectually to that end.

As Mr. Francis resumed his seat Mr. Bixby, of St. Louis, arose and said:

"I would like to ask Governor Francis if he would not include in his motion an endorsement of the lock system on the Canal."

Mr. Francis replied:

"I thought the report as it now reads on that point would be sufficient. However, if you wish another sentence in my motion specifically endorsing the lock system, I have no objection to inserting it. While I never professed to know which would be preferable, I was inclined, until coming to Panama, to favor a sea level Canal, but since going over the ground I have no doubt that the conclusion to construct an eighty-five-foot lock system Canal is a wise one."

Mr. Wulsin doubted the desirability of including such an endorsement in Mr. Francis' resolution. He said:

"The Committee on Plan of Management, while desiring to limit themselves, according to the instructions of the General Committee, and to the expressions made at the meeting that we hesitate to undertake in our brief visit to discuss and express opinion upon engineering problems which have been referred to and considered by the eminent engineers the President called together, nevertheless did go this far:

"We regard its (the Canal's) successful completion, according to the plan adopted for an eighty-five-foot lock Canal, as absolutely assured."

"Speaking for myself personally, I wonder whether it is wise for us to do more than to say that from what we saw we believe an eighty-five-foot lock Canal is all right. I do not like to see the Commercial Clubs announce conclusions and judgments on a matter of this kind. Maybe I am too much a man of impressions."

The Francis resolutions, being submitted to the meeting, were adopted without a dissenting vote.

Mr. Schmidlapp, of Cincinnati, claimed attention:

"Before we adjourn," he said, "I should like to ask whether anyone made inquiry as to whether the work could progress more rapidly by using night shifts. Did anyone inform himself on that point?"

Mr. Moore, Chairman of the group on the Progress of the Canal Work, had made such inquiries. In reply to Mr. Schmidlapp's question he stated:

"I did make such inquiry and was told that it is the purpose of the management, when they get the additional equipment now ordered, and also an electric plant to light up for night work, to put on a night force where it can be done economically and effectively. Until then they cannot do anything of that sort. Furthermore, when work on the Gatun locks, which is likely to be a sticking point, is begun, it is their purpose to continue the work without intermission or cessation night and day until completed."

Mr. Chalmers, of Chicago, made the following suggestion:

"As there has been so much question," he said, "in the States about the progress of the work, I think some statement ought to be included in this report concerning the increase in the excavation from the Culebra Cut. I am informed that in January that excavation amounted to 500,000 cubic yards, in February to 650,000 cubic yards, and that in March it will probably reach 1,000,000 cubic yards."

Mr. Ryerson brought the matter of disposition of the reports to a point. He said:

"In order to cover these various questions that have been raised, would it not be well to have the chairmen of the several groups constitute a committee to assemble these reports and prepare something that will cover all of the points brought up. I move that such a committee be appointed — a committee consisting of the eight group chairmen."

Before this motion was put to a vote, Mr. Francis, of St. Louis, was recognized:

"I have no objection," said he, "to such a motion. I do not want to throw any firebrands into this meeting. There is one very important question, however, which has not been touched upon here, and which this Committee might consider and report upon, and that is, whether in the judgment of the members of this party, it is wise for the government to continue this work itself, or whether it would be better to let it by contract."

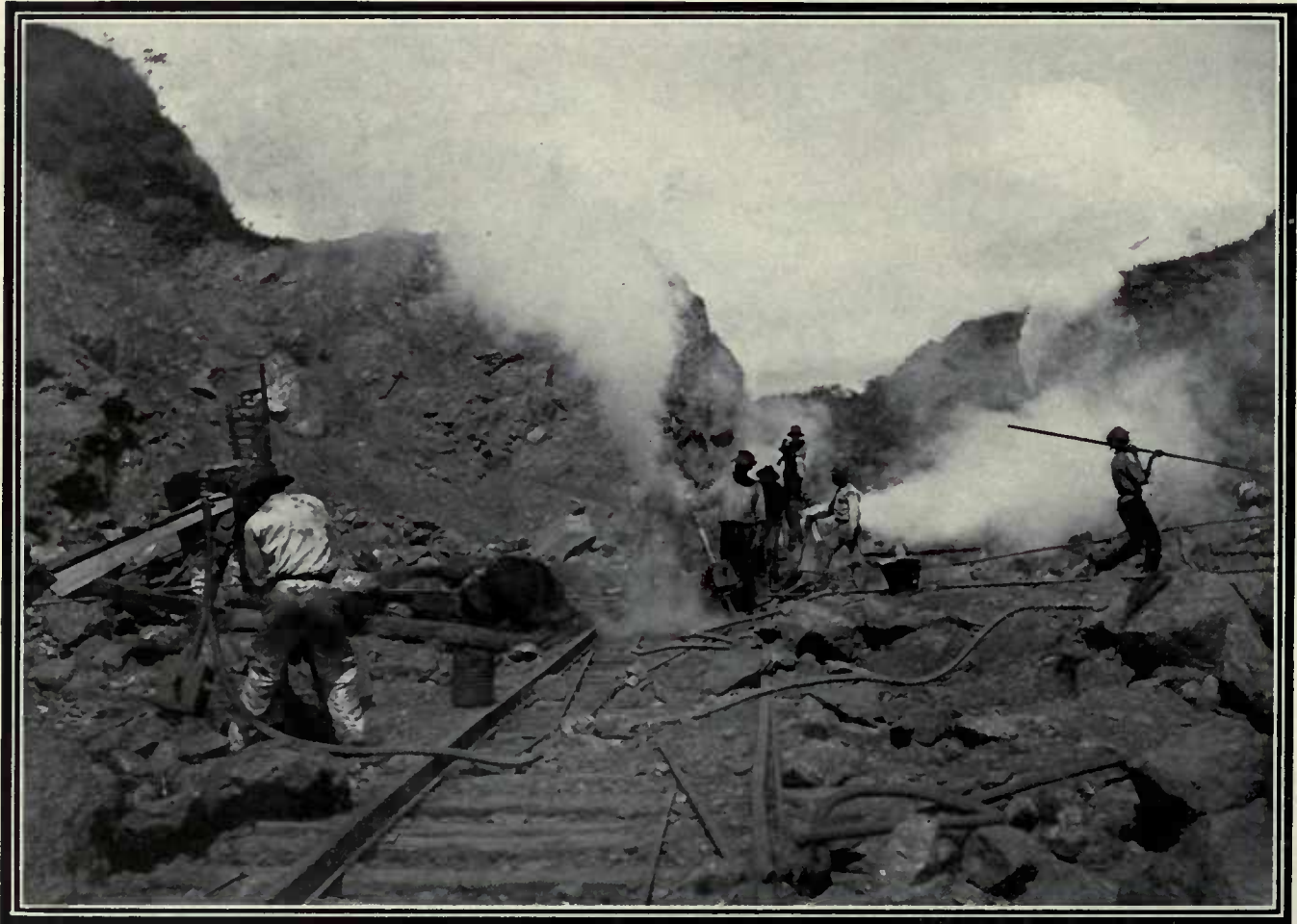
The motion of Mr. Ryerson was seconded and carried.

Mr. Davis, of Cincinnati, said:

"I move that these reports as they now read be put together and made to dovetail into each other, and that no new matter be included in them."

The motion was duly seconded and carried.

The meeting adjourned.



DRILLING FOR THE BLASTS IN CULEBRA CUT

The Report to the Clubs

THE group chairmen met in accordance with the instructions of the meeting of the whole body and prepared a general report, made up of the group reports, with an introduction.

A general meeting of the members of the Clubs was held in the dining saloon the day before the "PRINZ JOACHIM" reached Charleston. Mr. Farwell, presiding, read the introduction and laid before the meeting the general report.

On motion the introduction was approved. On motion the report was adopted and ordered to be presented to the Commercial Clubs of Boston, Chicago, Cincinnati and St. Louis.

The introduction and the general report follow:

Members of the Commercial Clubs of Boston, Chicago, Cincinnati and St. Louis, who have just returned from a trip to Panama, have united in a report of their observations for submission to their Clubs. The members participating in the trip numbered eighty-six, divided about evenly among the four Clubs. They chartered a steamer, the "PRINZ JOACHIM," paid all of their bills on the Isthmus, and asked no favors, other than to be given a fair opportunity to see for themselves what were the conditions and the progress of the work.

On the way to Colon the members held several meetings and discussed ways and means to make the observation systematic and to cover as much ground as possible in the time to be spent on the Isthmus. A special Committee reported a plan of action by which the membership was to be divided into groups, each group having a Chairman. Eight of these groups were suggested for the following lines of observation and inquiry:

1. Plan of Management.
2. Sanitary and Hygienic Conditions.
3. Social and Racial Conditions, including Ethical and Welfare Questions.
4. Housing and Food.
5. Climate as it Affects Americans.
6. Efficiency of the Labor.
7. Efficiency of the Plant, including the Railroad.
8. Progress of the Work.

These divisions were approved. The members were divided into eight groups of ten or eleven members each, regard being had to the wishes and special qualifications of members in their assignment to the groups.

During their stay upon the Isthmus the groups, beside inspecting the conditions and work generally, sought out officials who could specifically inform them upon the subjects in which they were most interested. They visited the departments and the localities to which these special lines of inquiry pertained. Several of the groups sub-divided their subjects and separated into sub-committees.

Learning, upon the arrival of the party, that this systematic observation was planned, the officials of the Isthmian Canal Commission, from the Chief Engineer down, co-operated heartily, in every way possible, throughout the entire stay on the Isthmus, to aid the members of the Clubs in carrying out the plan.

By the course pursued the members multiplied many times the effectiveness of their inspection, as compared with what would have been the results of the visit without organization or division of the subject.

After the departure from Colon the groups held meetings. Members compared among themselves the information obtained and the impressions formed.

At a general meeting of the members held on board the "PRINZ JOACHIM," the groups presented their reports, which were discussed and accepted. These group reports were embodied by the chairmen of the several groups in a general report to be submitted to the Clubs, as follows:

Plan of Management: In the prosecution of a great undertaking the first and most important preliminary is the securing of an organization for doing the work efficiently, expeditiously and economically.

We have given as careful consideration as the limited time at our command would permit, to the details of this organization and the general plan of management. Our observation of the operations under the organization convinces us that it is an admirable one for its purpose. The time spent in completing it has not been misspent. The evidences of good results, already apparent, should steadily increase as the work progresses. The officials appear to us to be of a high order as to character and ability. They seem to work in harmony with each other, to be enthusiastically loyal to their chief. It would be difficult to find in any body a better *esprit de corps*.

There was universal expression of regret among them at the recent resignation of the Chief Engineer, Mr. John F. Stevens. It seems unfortunate that circumstances should have necessitated this change.

It is a matter of congratulation that the plan of management provided in the first place for the thorough sanitation of the Canal Zone and of Colon and Panama. The successful accomplishment of this has apparently made the Isthmus so healthful that the great work of construction is now carried on without serious hindrance by climatic conditions. We regard its successful completion, according to the plan adopted for an eighty-five-foot lock Canal, as absolutely assured.

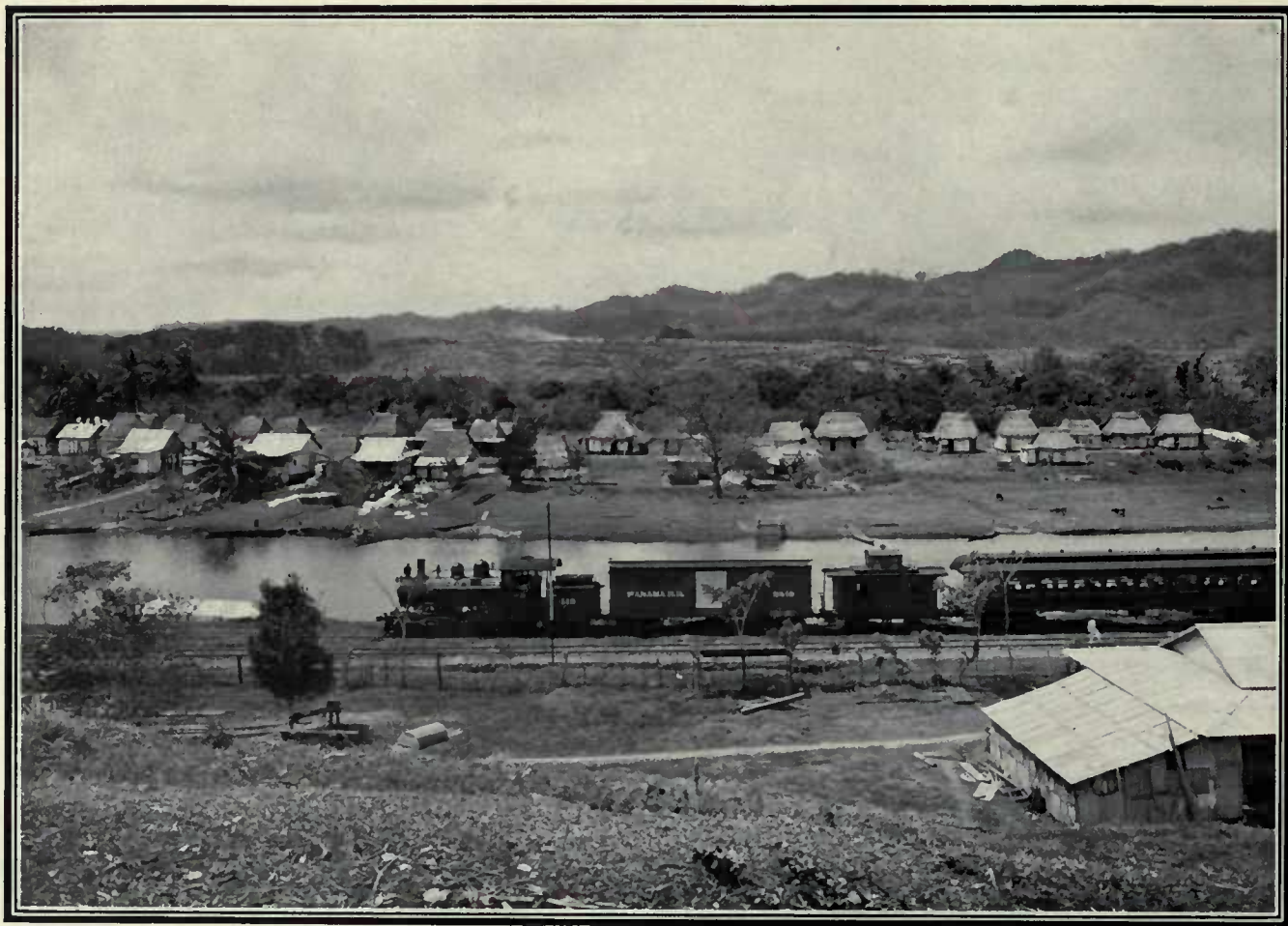
Sanitation: We divide this subject under three heads:

1. Water supply and drainage.
2. Street department.
3. General sanitation of the Zone, Panama and Colon, and the buildings in them.

Water is supplied from three large reservoirs:

1. Located ten miles from Panama, consisting of two lakes, having a capacity of 500,000,000 gallons.
2. Located at Empire, containing 250,000,000 gallons.
3. Located three miles from Colon, with a capacity of 550,000,000 gallons.

These reservoirs are supplied from water sources a long distance from towns and camps, and at points entirely safe from the possibility of contamination. They are formed either from natural lakes or rivers, or, as in the case of Colon, from a pond made by damming a stream in the high land back of Colon. In all cases, analysis has shown the water is soft and contains nothing in solution that is deleterious to health. Filtering will remove any sediment that may be in it. Some persons prefer to boil it, however, before using for drinking.



SITE OF GATUN LAKE

The Panama Railroad, Chagres River and Village of Gatun.

The supplies for Colon and Panama are adequate for towns of much larger area and population, and the pressure is sufficient. There are about twenty miles of water mains in the City of Panama and ten miles of pipe leading to the city.

In Colon and Panama all of the sewer pipes are of vitrified pipe. The sewers are led from the towns in the Zone to rivers and points in them that cannot possibly endanger the health of the inhabitants. In Colon and Panama the sewers run into the sea beyond the low water mark.

The work itself, the materials, the installation and the plumbing, are all good. The work was done by competent head plumbers and skilled labor. In a portion of the work poor material was used, as that was all there was on hand at the time—but that is now being replaced.

The householder in Panama is taxed for water and sewer connections whether he has them or not; and the mains are piped to the curbs of the streets so that the owner's connection requires only opening under the sidewalks. The law in Panama makes the bills for water a direct lien upon the property, but in three cases only has it been necessary to resort to this method of collection. With the introduction of running water, laws were passed prohibiting the use of cisterns and the collection of rain water for domestic purposes; and under close, regular inspection, this custom has been stopped. Those whose houses are not connected with the mains must draw such water as they need from the nearest street faucets.

The garbage in Panama and Colon is collected daily, and throughout the rest of the Zone it is taken up at least once a week, and either burned or carried out to sea, or to some point where filling is going on and dumped there, and the next loads of excavation cover it up.

2. The roads in the villages are treated as are those of any United States village, but where there are to be permanent settlements the streets will be paved and sidewalk* made. In several places this work has already been begun.

Half of the streets of Colon and Cristobal have already been paved or are in process of paving, and the whole of this work will soon be completed.



The Reservoir at Empire, about half-way across the Isthmus.

We were also informed that depressions in the land are being raised to prevent the possibility of stagnant pools. For this purpose the government is supplying the material for filling and is forcing the inhabitants to do the work. In such cases the grade will be raised from three to four feet.

We now come to Panama, which we think in many respects, has become an object lesson. Two years ago this was a city of mud and chaos. Panama has about twenty miles of streets. During the last two years ten miles have been thoroughly laid in vitrified brick; seven and one-half miles in good macadam and concrete; two and one-half miles remain to be completed after the drains have been first laid in them. There are concrete curbs. Panama is to-day a town of well-paved streets. These are not flushed except by the rain, which is carried off by two hundred sewer inlets, but they are swept daily, early in the morning, by machines. We doubt if there is a cleaner looking town of the size of Panama from Maine to Texas.

3. With regard to general sanitation we can say that we have seen the clearing of the hillsides and the burning of the brush, making broad open spaces about the working settlements. We have seen the draining and the filling of the marshes near the settlements. We have seen the use of petroleum in the pools of small streams that must for the present be allowed to remain. We have seen the draining of the surfaces of the hillsides on which dwellings and other buildings stand. We have seen the careful screening of the houses of operatives. We have seen that these homes are built on posts, that the ventilation under them may be perfect. In our opinion we have seen more suitable and better built and more comfortable homes for laborers than are provided for them anywhere else in the world for a similar purpose.

We have seen the hospitals well laid out and supplied with every necessary appliance for first-class work. These hospitals have a staff of about fifty physicians and surgeons and 150 nurses.

The French company reported only those deaths which occurred in the hospitals. Our records show every death in the Zone. The French company charged the contractors one dollar per day for every patient sent to the hospitals, which resulted in the sending of as few as possible. In the opinion of Colonel Gorgas, not more than one-fourth of the actual number of deaths was reported under the former regime. We observed many little graveyards along the line of the proposed Canal. In these were the graves of the unreported dead of the former period.

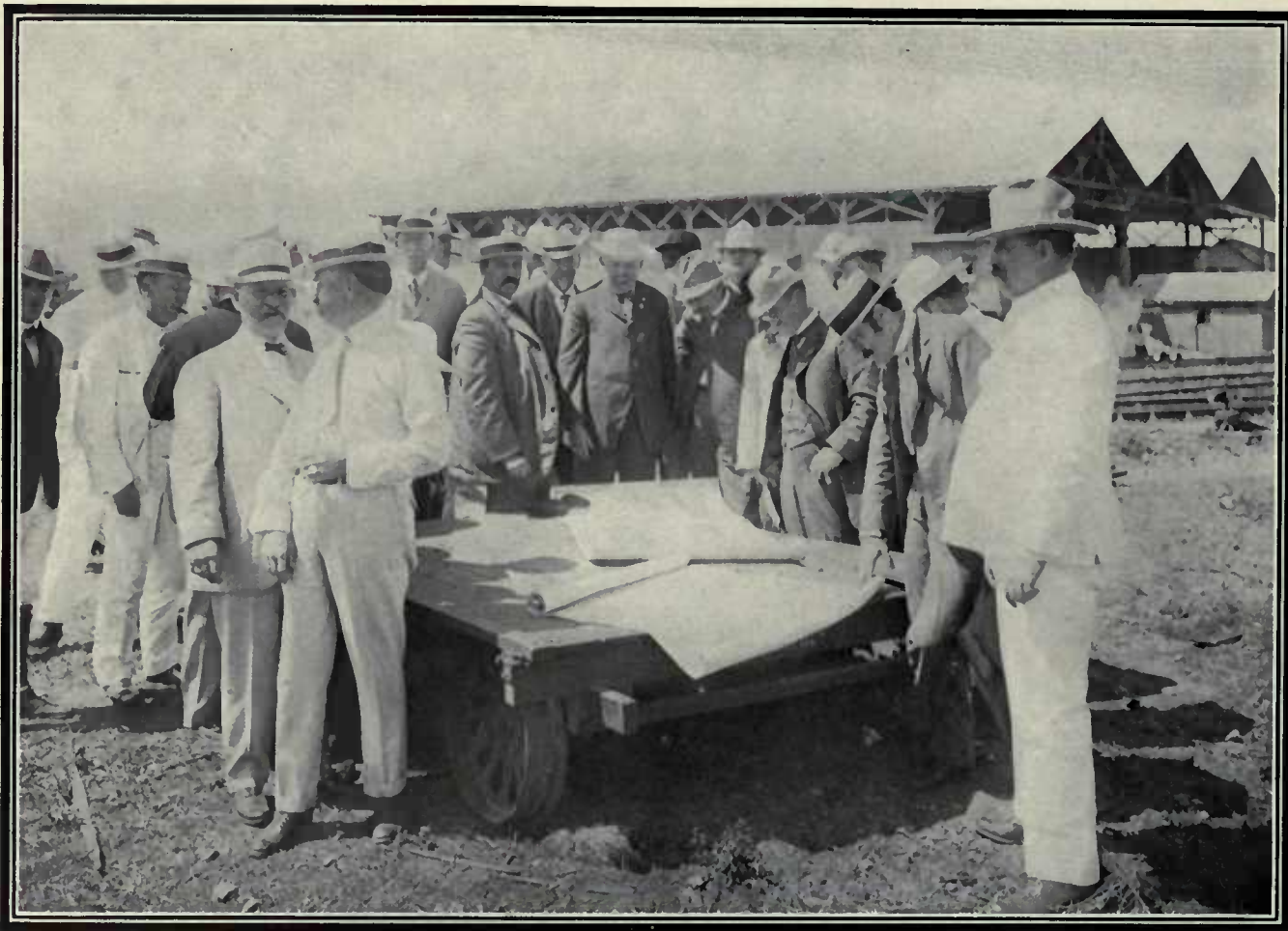
By one of our members a boss laborer was heard to say to Colonel Gorgas: "Colonel, I was up at the hospital for a week, and they just treated me royally." He spoke with evident and sincere gratitude.

The credit for this great sanitary work, which has made the building of the Canal possible, is due to the scientific and executive ability of Colonel W. C. Gorgas and to the devotion of his entire staff.

Law and Order: The Canal Zone is a strip ten miles in width, extending across the Isthmus of Panama, over which complete and exclusive jurisdiction was ceded to the United States by the Republic of Panama by the treaty of November 18, 1903. This jurisdiction is exercised through laws of the United States passed by Congress applicable to the Canal Zone, the executive orders of the President, which have the force and effect of law, and by enactments, rules and regulations of the Canal Commission, in which body is vested general legislative power, subject to the laws passed by Congress and the executive orders of the President. The laws enacted by the Commission are subject to the approval of the President.

The first Act passed by the Canal Commission, known as Act No. 1, to provide for the organization of a judiciary and the exercise of judicial power in the Canal Zone, was adopted August 16, 1904. Under it the judicial power of the government of the Canal Zone is vested in a supreme court, circuit courts and municipal courts.

The municipal courts exercise jurisdiction similar to that vested in justices of the peace in the United States. They have jurisdiction of offences where the punishment is limited to a fine of \$25 or imprisonment for thirty days, and of civil actions where the amount in controversy is less than \$100.



THE CHIEF ENGINEER EXPLAINING MAPS AT LA BOCA

From left to right: In the center—John V. Farwell, Jr., Chief Engineer John F. Stevens, Benj. Carpenter, Thomas P. Egan, Chas. W. Knapp. On the left—C. H. McCormick, W. E. Clow, Wm. Lodge, L. D. Dozier. On the right—L. W. Noyes, F. A. Geier, David B. Gamble, Robt. Batcheller, David R. Francis, James R. Carter.

The circuit courts have appellate jurisdiction of all cases arising in the municipal courts, and original jurisdiction over all other civil and criminal cases. They correspond to the nisi prius courts of record of the United States. There are three circuit judges each of whom exercises jurisdiction in one of the three judicial circuits into which the Canal Zone is divided. One circuit court is held at Ancon, one at Empire and one at Cristobal.

The three circuit judges sitting in banc compose the supreme court, which is the highest court in the Zone. It has appellate jurisdiction over the circuit courts and original jurisdiction in mandamus, certiorari, prohibition, habeas corpus and quo warranto.

The chief justice receives an annual salary of \$6,500 and the associate justices \$6,000 each. Each judge is furnished with a dwelling house or apartment, or in lieu thereof is given a sum of money equal to eight per cent of his annual salary. The judges are paid their traveling expenses in coming from the United States to the Canal Zone, at the time of their appointment, and their salaries commence on the date they leave home to go to the Zone.

There is little litigation and the cases are decided promptly. There are no juries. In criminal cases where the penalty of death or imprisonment for life may be inflicted, two municipal judges sit with the circuit judge.

The power of the executive branch of the government of the Canal Zone is vested in a governor, who is appointed by the President of the United States, and in other officers appointed by the governor subject to the approval of the Isthmian Canal Commission.

The police force consists of a chief of police, 175 officers and men, and seven clerks. The community is law-abiding and order is well maintained. The amount of crime is remarkably low for such a large and heterogeneous population. The officers of the Zone report an appreciable advantage resulting from the decrease in the number of saloons in the Zone, following the adoption of a license of \$1,200. Lotteries and gambling were prohibited by one of the first executive orders of the President, and also are prohibited, as is prostitution, by the criminal code adopted by the Commission. The Commission has also enacted a code of criminal procedure.

Educational Facilities: There are 2,500 children of school age in the Zone. Of these, 1,531 colored children and 206 white children are enrolled, and about 700 colored children and seventy-five white children are not yet provided for.

There are thirty-one teachers. Of these, twenty-one are white women from the States, nine are Jamaica men and one is a Jamaica woman. Text books and supplies are furnished by the government. The schools are conducted almost entirely in English. Separate school rooms are provided for the white and colored children.

Education is compulsory, and the Zone police aid in enforcing attendance. Free transportation is furnished where needed. There are morning and evening sessions of three hours each. The attitude of the people toward education is in most cases enthusiastic, and the large proportion of the pupils are apt scholars. There are no adult or evening schools, but classes may hereafter be established for teaching Spanish and such other subjects as are required for civil service examinations.

The pay of the teachers is \$80 a month for twelve months, for those who are graduates of normal schools and have had experience as teachers, and less for those who are not so well qualified.

Five new school houses are to be built and more teachers are to be brought from the States as soon as accommodations are provided for them.

Moral and Religious Conditions: As a means of providing for the religious and moral welfare of those in their employ, and to protect them against temptation by furnishing facilities for religious worship, and for entertainment and social recreation, the Canal Commission has authorized the construction of eight buildings in as many different localities in the Zone, which are to be operated under the direction of the International Committee of the Y. M. C. A. Four of these buildings are practically completed, the one at Culebra being ready to receive its furniture and equipment. The others will be constructed as soon as the first four are opened. Each is a double building of two stories and extension, with spacious verandas, social room, auditorium to seat 300, billiard and pool room,

library, class rooms, bowling alleys, gymnasium, baths and lockers. The plan of operation will be a modification of that followed in the army, navy and railroad Y. M. C. A. buildings, so as to fit special Isthmus conditions.

The Commission is also erecting buildings to be used for church purposes, providing separate edifices for Roman Catholic and Protestant worship, the latter to be used jointly by the various denominations. As necessity requires, additional buildings will be erected.

At Ancon, Culebra, Cristobal and elsewhere, chaplains for the hospitals have been appointed, white and black, Catholic and Protestant, whose salaries are paid by the Commission.

Various denominations have now, at different points in the Zone, places for preaching and for Sunday-school work; some have acquired sites and are about to erect independent edifices. In Panama and Colon there are additional church facilities, but they are not, to any great extent, patronized by Canal Zone residents.

There is a volunteer committee of fourteen, called the Visitation Committee, who visit the hospitals regularly every Sunday morning from eight to ten o'clock, reading to the sick, writing letters for them, and performing other friendly services.

There is also what is known as the Good Order Club; it now has twenty-three members, whose names and identities are not known to the general public. These gentlemen aim to report to the proper officials anything which they observe and deem inimical to the best interests and welfare of the Commission or of those under its control. An effort is being made to extend this movement to include Panama and Colon.

Recreation and Amusements: It is evident that the provision for the recreation and amusement of the Canal employees is inadequate. The early completion of the Y. M. C. A. club houses will help materially, and it may be expected that theatrical and other public amusements at Panama and Colon will improve with time. Lack of means of recreation has been one cause of the resignation and return to the United States of a considerable number of employees. The Commission is evidently alive to this need, and has taken steps to make conditions in this direction, as in others, as favorable as possible.

Baseball grounds have been established at several camps; great interest is taken in the game, and the rivalry between the clubs is as keen as in our leagues at home.

The gymnasium in the Y. M. C. A. club houses will be sure to encourage a wholesome attention to other athletics, and will become centers for all such interests.

In the matter of music, the organization of the Isthmian Canal Commission band, at first purely voluntary, was soon taken up by the Commission and encouraged by an allowance of extra pay for attendance on the weekly rehearsals. This excellent reed band of thirty-five pieces gives frequent concerts at the various camps besides playing at public functions. The Commission has made an appropriation for the employment of a professional musician to take charge of this band, as well as to establish singing societies.

Among social or benevolent societies, of which there are several, may be mentioned a masonic lodge, a university club at Panama and another on the Zone, while the excellent Hotel Tivoli at Panama provides still another center of social interest. Another hotel at Cristobal, and possibly another on high ground midway on the Isthmus, seem likely to be required in the future.

The reasonable provision by the Commission of facilities for social enjoyment is a wise expenditure. Such facilities will aid materially in attracting the best class of men to the service, and in keeping up their morale under conditions which involve, for the greater number, long absence from home.

Housing and Food: The Subsistence Department on the Isthmus furnishes supplies of first-class quality at reasonable prices.

Jackson Smith is in charge of commissary supplies, Lieut. Wood, of the Third Cavalry, U. S. A., is his assistant, and looks after issuing the same.

There are no restrictions as regards diet. The purchaser of food from the Subsistence Department has the choice of the kind of

food and the quantity he desires. In the case of the negro laborer, thirty cents per day is deducted from his pay for his meals, which are furnished him cooked, from the government kitchens. This is done to compel the negro to take sufficient nourishment, as it was found he economized in his food at the expense of his health and strength.

The United States has built at Cristobal an up-to-date bakery with a capacity of from 20,000 to 30,000 loaves daily, and bread of first-class quality is furnished therefrom.

There are three grades of meals:

First. A thirty cents meal, served to Americans, where table-cloths, napkins and glassware are provided. This meal is served by waiters in the hotels. It consists of the following dishes:

Breakfast: Fresh fruit, cereals, bacon and eggs, potatoes, batter cakes, tea and coffee.

Dinner (at noon): Soup, an entree, roast beef, pork or mutton, chicken (twice a week), two vegetables and dessert.

Supper: Cold meats, canned or dried fruits, tea, coffee, bread and butter.

Second. A forty cents per day ration for European labor, consisting principally of rancho stew made of meat, beans, potatoes and macaroni, with bread, tea and coffee.

Third. A thirty cents per day ration to negroes, consisting of bread, potatoes or yams, rice, beans, fresh or cured meat or salt fish, tea and coffee.

An ample supply of good drinking water is available at all times from the government reservoirs.

There are about 3,000 Americans and 3,000 Europeans who are fed in hotels and mess-halls, and 7,000 negro employees who are fed from the government kitchens, making a total of 13,000. The 15,000 additional employees get their stores from the Subsistence Department.



ON THE HILL AT GATUN

Excavating for the locks which will raise ships to the lake level eighty-five feet above the sea.

We think it important that fresh vegetables be furnished to employees and, if necessary, believe the government should undertake truck gardening for this purpose. Some complaint is made as to the cooking and the preparation of the food which we believe is well founded. We think increased attention should be given to this matter, as well as to the table service at the hotels.

We have words only of commendation for the housing of employees. There were over 2,100 dwellings of different sizes which came into the possession of the Commission from the French. The poorest of these were destroyed and the balance have been repaired and put in first-class condition. The government is adding constantly to the number of dwellings, and is constructing many at the present time. The houses are simply but comfortably furnished. The buildings have porches and the porches are screened. Shower baths are in every house. At each important station is a hotel with large dining-room on the first floor, with large rooms on the second floor. Connected by piazza is another building containing assembly hall, billiard and pool room, bed rooms and shower baths.

The excellence of the housing seems to us one of the striking features of the Canal work. Those familiar with labor quarters in any section of our own or other countries cannot but feel that the housing offered on the Isthmus is the best in the world.

Climate as it Affects Americans: After making such inquiries as opportunity offered and such observations as the length of our visit permitted, we feel justified in stating that:

1. The climate is equal, if not superior, to that of any other tropical region of similar altitude.
2. Its effects upon Americans are not injurious.
3. We believe there is no reason why Americans, observing proper precautions, should not be able to live in the Canal Zone for years.

4. We believe there is no climatic reason that prevents a satisfactory continuation of the work and the successful completion of the great undertaking.

Efficiency of the Labor: The labor can be most conveniently classified for our purposes as skilled and unskilled.

Before our inquiries on the ground we had supposed the supply of unskilled labor presented a problem of continuing difficulty, but we were assured on all sides that this problem was practically solved.

The unskilled labor now employed consists in the main of West Indian negroes, Italians and Spaniards. A considerable body of Greeks is expected shortly. These white men are sending home for their families and friends, which is encouraging as showing their liking for the work.

The negroes are paid thirteen and one-third cents silver per hour, and their meals; the white men, forty cents silver per hour, and they furnish their own meals. Every laborer of each class is furnished lodging, light, fuel, water and hospital service free of charge.

Nine hours constitute a day's work, namely: from 6:30 to 11:30 a. m. and from 1 to 5 p. m.

The difference above mentioned in the scale of wages indicates a marked difference in the efficiency of the work. If the comparative results achieved were correctly stated to us, the negro is the better paid of the two. For, reducing these figures to a common basis by taking gold to silver at two to one, according to Isthmian usage, and counting the white man's meals at forty cents gold per day, at which rate he can procure the food from the Canal Commission, he receives net per day \$1.40 gold, while the negro receives sixty cents gold, thus making the ratio of two and one-third to one, while the comparative ratio of efficiency in work as given us is approximately three to one.

The reasons assigned for the greater efficiency of the white laborer are greater intelligence, physical strength, endurance and vitality. When instructed as to a new piece of routine work the lesson lasts and needs no repetition, while the negro needs constant supervision. The white man attacks his work vigorously and he keeps in good health. This matter of health has led to requiring the negro to eat the food supplied by the Canal Commission as, if left to his own desires, he preferred the toothsome but innutritious yam to the strength-giving bean. As a result of this policy the efficiency of the negro was greatly increased and he has worked more steadily. The President having recommended this change, it is interesting to note what has been accomplished.

