

# GATUN DAM FOR CANAL

### Structure More Than Mile Long and One-Half Mile Wide—Longest Artificial Lake in the World Is Being Formed.

By FREDERIC J. HASKIN.

(Copyright, 1908, by Frederic J. Haskin.) Washington, July 16.—The Isthmian canal project naturally divides itself into two parts. At the two ends they are simply digging big ditches 45 feet deep and 500 feet wide, which will have the same surface level as the ocean itself. On the Atlantic side this big ditch starts at deep water in Limon bay and extends inland seven miles to Gatun. On the Pacific side, it starts at deep water and extends to Miraflores, a distance of five miles.

From this it will be seen that approximately one-fourth of the whole canal will be a big sea level ditch. For the remaining 28 miles of the canal it is necessary to have the surface of the water 85 feet higher than that of the sea level ends of the canal in order to get ships safely across the big continental divide at Culebra. To get this the engineers have planned a great dam at Gatun, on the Atlantic side, and two relatively smaller ones at the Pacific side, one at Pedro Miguel, called by the Americans "Peter McGill," and the other at Miraflores. These dams will make a vast lake shaped something like a gourd, with the little end at Pedro Miguel, the handle being the Culebra cut.

The topography of the isthmus lends itself admirably to the plans of the engineers. The Chagres river flows more than half way across the isthmus, along the general line of the canal, crossing the line of the big ditch 25 miles on its way to the sea, without the canal ever going out of its way to meet the river. All of these things will of course be eliminated when the dam is completed, and with all of its windings, the Chagres will not be able to wind out of the big Gatun lake.

### Site of Dam.

The Chagres flows down through a valley which gradually widens as it nears the sea. At Gatun this valley is about a mile wide. It terminates here, the hills which form it less themselves in a coastal plain. It is across the valley at this point that they are building the Gatun dam, and its accompanying locks. This dam will be a veritable mountain of mud more than a mile long and a half mile high, ready to dispute the passage of the grim old Chagres, taking from the market waters such a big slice as will fill the largest artificial lake area will be about 165 square miles.

After the Chagres and its smaller neighbors have filled the lake to the required height the dam will allow the rest of the water to pass through its spillway and on to the sea. Further interruption, the only demand being that it shall not approach the line of the canal again. In other words, its various waters will be eliminated from the canal workhouse and when that is filled to overflowing, they will be in "leave town" at once by the spillway route.

### Another Problem.

After we have the lake, the problem is to get ships up into it and down out of it. They cannot go over the dam spillway like a piece of driftwood, neither can they get up into it as a fish wiggles himself up over a dam. Here is where the locks come in. They are nothing more complex than a sort of Brahminian marine stairway for ships to climb. At Gatun there are three of these gigantic steps 1,000 feet wide in the clear. And as ships do not like to pass on single stairways they have put a partition in the middle of the big staircase so that they do not need to run into one another. This partition is no small boarded up affair, either. It is of concrete and is 50 feet across at the base and tapers up to 20 feet. Even with this big partition in the middle of the staircase they will not have to rub against the wall, since they have 110 feet in the clear.

When a ship comes in from the Atlantic and wants to get into Gatun lake in order to make her way across the isthmus, she will steam into the lower lock. The big water gates will be closed behind her and water will be admitted into the lock from the dam above through innumerable holes in the floor. When she has been lifted to the level of the next lock she goes into it and the operation is repeated until she finds that she has climbed up 85 feet in three steps. A ship desiring to go down has the topmost lock gates opened and she goes into it. Then the water is allowed to flow into the next one until they have a common water level. The gates are opened and she goes into this lock where the performance is repeated until she finds herself at sea level again.

### No Question of Success.

If any one has any doubts about the success of the Gatun dam project, let him come down here and see what is being done and how they are doing it. Doubting Thomas would have believed on less evidence than one sees here. With that thoroughness and attention to detail which has made the army engineers the peers of any lot of engineers on earth, Colonel Goetz and Major Sibert have indeed eliminated all the elements of chance by innumerable proofs. For instance, they have built a cross section of the Gatun dam on a scale of one inch to the foot, using identically the same materials that are going into the big dam, and in the same way. They have put the proportionate water pressure against it, and are getting results. Through all this cross section only an occasional drop of water comes out into the basin they have arranged to catch it. And when a drop does come out, it is as

### HOURS OF TORTURE THEN QUICK RELIEF

Annoying Itch Caused by Summer Mosquitoes, Prickly Heat, Mites, Fleas, etc. Can Be Instantly Relieved.

Don't suffer another instant from the itchy, burning, irritating, and annoying bites, poison ivy, etc. Don't rub or scratch as that only makes the itch worse, and may result in something serious.

There is a quick and sure relief for all forms of skin diseases and itches. Dr. D. D. Prescription, a purely vegetable preparation and only known positive cure for eczema and other skin diseases, is equally reliable for summer rashes, and when applied to the itching skin gives instant relief, takes away all irritation, soothes and cools the skin, and permanently cures the itch. Go to Skidmore Drug Co., Woodard, Clarke & Co., or write direct to Dr. D. D. Co., 113 Michigan St., Chicago, Ill., for a liberal sample sent free to any one who encloses 10 cents to help pay cost of mailing and packing.

clear as any water that ever passed through a filtration bed. The water in the Gatun lake is to honeycomb and eat away the heart of the Gatun dam, as critics have prophesied, it will have to reverse the law of experimental engineering to do so.

### Engineers' Experiments.

But even this experiment—a thorough enough one for any commercial firm in the world to accept—does not satisfy the army engineers. They have arranged for a series of auxiliary experiments. In one of these they have an iron cylinder, some four feet high and some eight inches in diameter. Into this they have put three feet of the earth of which they propose to build the big dam. They have subjected this to all degrees of water pressure up to 50 pounds to the square inch. Yet even this tremendous weight of water against it, the amount that seeps through three feet of the material with a pressure equivalent to a head of 115 feet of water, there can be no danger of seepage through 2,900 feet of the material under the pressure of a head of only 85 feet of water. The impermeability of the material which is to be used in the dam has been proven in so many ways that no man who has seen these proofs can doubt it.

### Critics of Dam.

The critics of the dam, most of whom, by the way, have never been over the ground, assert that the earth which is to constitute the foundation of the dam is filled with innumerable underground springs, and that it bears so much water as to make it unfit for any purpose. They also assert that the site has been discovered by dozens and dozens of wells, and that the water which has been discovered, they have never come to light. The water which the engineers find, a negligible amount, has been discovered by the fact that there were five times as much underground water as no one thought of questioning the sites.

If the Culebra cut is the backbone of the canal, the Gatun dam is its most vital organ. Without that dam the canal would be out of commission for three-fourths of its length, and for the most part it would be high and dry. So they are taking every possible precaution to make every detail of the work perfect. Not content with digging dozens of wells several hundred feet to ascertain just what there is below, they are now beginning to dig test pits. This pit is 20 feet square, and Colonel Goetz has planned to send it down to solid rock some 240 feet below the surface, in order that he and his assistants may get right down into it and see for themselves just what is down there. The dam will cover 288 acres at its base and will be 135 feet high, or 50 feet higher than the surface of the water it will be called upon to hold in check. It will contain some 20,000,000 cubic yards of material, or enough to make a mound of earth one yard high and one yard across and nearly 12,000 miles long.

### Immense Amount of Cement.

The concrete which will be required to build the concrete work of the canal would be enough to build as many houses as would give shelter to the entire population of a city 100 miles of Minnesota. It would be enough to build a solid string of houses from New York to Richmond, Va., by way of Washington. The spillway of the Gatun dam will carry off 140,000 cubic feet of water a second, or more than 60,000 gallons a minute. The big water gates of the Gatun dam will have an aggregate weight of nearly 18,000 tons. The ones at the head of the wide river will be a sort of steel bridge on wheels, the track for it being 26 feet gauge. Each pound of water in the dam would have to push aside 62 pounds of earth before it could escape.

### DREADED ARGENTINE ANT IN CALIFORNIA

Entomologists Say It Will Destroy Orange and Fig Crops If Not Killed.

(United Press Leased Wire.) Oakland, Cal., July 16.—Professor C. W. Woodworth, head of the department of entomology of the University of California, has reported to Governor Gillett that the dreaded Argentine ant has made its appearance in California, in East Oakland.

Professor Woodworth states that unless measures are taken at once to drive out the pest it will utterly destroy orange and fig crops in the state. The Argentine ant is a small insect only an eighth of an inch long, but is of a fighting nature and has driven all other ants from East Oakland.

It is one of the most dangerous pests that has ever been brought to the United States from a foreign country. According to a report by the Louisiana crop pest commission, the ant has destroyed millions of dollars' worth of property in that state.

### ANNOUNCES SOURCES OF "EXAM" QUERIES

(Salem Bureau of The Journal.) Salem, Or., July 16.—It is announced by Superintendent Ackerman that the sources from which questions will be taken for state and county papers will be as follows: Bookkeeping, office methods and practical bookkeeping, part of the course; Echo Mason, certificate; Woodlawn, Louise, Putnam, certificate; Drain; Gertrude Brehaut, Condon, certificate on papers from Prince Edward Island; Aubrey G. Smith, Joseph, certificate on papers from Missouri; L. R. Fancher, Sumpter, certificate on papers from North Dakota.

### NEW ELECTRIC R. R. IS PROMOTED

(Special Dispatch to The Journal.) Astoria, Or., July 16.—A new electric railway is being planned to connect the Nelsieum valley is being promoted. The parties ask for a free right of way and stock subscriptions to the amount of \$100,000.

## Death Roll of The Pioneers

### At Coolidge.

(Special Dispatch to The Journal.) Silvertown, Or., July 16.—Al Coolidge, who died at his home in this city Monday, February 15, 1832. In 1844 he started in life for himself and devoted his energies to the manufacture of brick in his native state. The following year he removed to Wisconsin, where he remained until 1848, when he returned to



Al Coolidge.

Ohio. In 1851 he resolved to make a home and fortune in this promising portion of the country. Reaching Oregon from where Silvertown is now located, subsequently he took up a donation land claim of a quarter section and erected a house thereupon. Some of this land he owned at the time of his death. Later he embarked in the general merchandise business, into which he was then known as Milford, one mile southeast of Silvertown, where the electric light plant is now located, but in 1855 this place was superseded by the town of Silvertown, and Mr. Coolidge moved his building and store here, and for 10 years or more continued business successfully. A short time after coming to Silvertown Mr. Coolidge was married to Sarah Allen, who came here with her parents in 1852 from Illinois. She, together with two children, survive.

### Mrs. J. M. Ralston.

(Special Dispatch to The Journal.) Lebanon, Or., July 16.—Mrs. J. M. Ralston, 52 years of age, died at her home in Albany July 13 of pneumonia. The deceased's maiden name was Lottie Behrens. She was born at Oregon City March 8, 1856. She was married at Eugene to J. M. Ralston October 30, 1876. They took their residence in Lebanon where they lived until 1883, when they moved to Albany, where they have since resided. She was a member of the Presbyterian church, active in church work, and of the Eastern Star, one of its past matrons. She leaves a husband and son, Rolla.

### Mrs. M. A. Miller.

(Special Dispatch to The Journal.) Lebanon, Or., July 16.—Mrs. M. A. Miller, 42 years of age, died at her home in Albany July 15 of pneumonia. She died after an illness of several months. Mrs. Miller's maiden name was Flora McCalley. Her parents settled in Marion county in 1852. Mrs. Miller was born in 1866. In 1872 the family moved to Lebanon, where Mrs. Miller has lived ever since. She was married to Senator Miller August 1, 1888. But one child, a daughter, has been born. She was married a few weeks ago to Sherman Miles of Portland.

### Daniel Herron.

(Special Dispatch to The Journal.) Sherwood, Or., July 16.—The funeral of the late Daniel Herron was held at

## RUSSIAN AGENTS PLAN CAMPAIGN

### Sent to America to Offset Stories of Czar's Cruelty.

(United Press Leased Wire.) New York, July 16.—Forty-two Russian secret service agents are on their way to America today, where they will spend several months in a campaign of misrepresentation of conditions in the czar's domain, according to information received by Dr. Paul Kaplan, chairman of the Russian revolutionists in New York.

Among the spies sent to the United States are 20 brilliant orators who will deliver courses of lectures calculated to deceive the American people into believing conditions in Russia much better than they actually are. Forces have also been sent to the principal countries of Europe, where similar steps will be taken.

Knowledge of the movements of the Russian secret service agents reached the revolutionist society here through the chief of the Russian spy bureau, who recently deserted the service of the czar and joined the rebels. When he abandoned his important post at St. Petersburg he took all his books and papers with him and placed them in the hands of his new friends. These will prove invaluable to the rebels, as they contain descriptions of members of the Russian secret police.

The official who deserted the czar for the rebels knows every member of the secret police, having lived such one personally. While his identity is concealed by Dr. Kaplan it is understood his name is known throughout the world.

## HOT FIGHT ON IN DRY OLD MAINE

### Democracy Sees Chance to Win—Prohis to Center Effort There.

(United Press Leased Wire.) Bangor, Maine, July 16.—Declaring the prohibition law in Maine has become a farce, and that the majority would be called upon to hold the reins, the hopes of the party leaders for a Democratic victory this year are running high. The prohibition law has been in effect here for more than 50 years, and the Democrats assert that the state knows every member of the law. It has been responsible for the fact that the G. O. P. majority has been cut down from 48,000 to 3,000 in the last few years.

Prohibition leaders from all parts of the United States will participate in the campaign here this year. They realize that the defeat of prohibition in Maine, which was the first state in the union to go "dry," would be a serious blow to their cause elsewhere.

### Pleasant Hill cemetery.

Rev. Reed of Hood View Congregational church officiating. Mr. Herron was a pioneer of 1854, having crossed the plains with an ox team in that year. He was 55 years old at the time of his death. He was married in what was then Yankton county, S. D., to Miss Katherine Waters, who died in 1890. Mr. Herron died two years ago. To them were born four sons, Louis, Harvey, David and John Herron, and two daughters, Mrs. Ella Seely, deceased, and Mrs. Jane Gibson, of Salem. He leaves two grandsons, Mr. Ernest and John Herron, of Wilsonville. Mr. Levi Herron of Salem, his cousin, who is past 80, attended the funeral. Mr. Herron was born in Illinois in 1823, crossed the plains in 1854 and had continuously resided in Clackamas county.

That which is popularly known as the "funny bone" just at the point of the elbow, is in reality not a bone at all, but a nerve that lies near the surface and which, on getting a knock or blow, causes the well-known tingling sensation in the arms and fingers.

## CANADA'S GREAT TRICENTENARY

### Prince of Wales and Notabilities Many to Attend Celebration.

(Special Dispatch to The Journal.) London, July 16.—The Prince of Wales is now en route to Canada. The superb cruiser Indomitable, upon which the heir to the throne is traveling, departed yesterday from Portsmouth, under escort of the cruiser Minotaur. The two vessels are now far out to sea on their first day's journey.

The Indomitable expects to reach Quebec next Wednesday, when the tricentenary celebration will be at its height. No Canadian tour will be undertaken by his royal highness, such as he made 19 years ago. According to the present plans the royal party will remain in the Dominion but one week.

The Prince of Wales is accompanied to Canada by a very brilliant staff. It includes Lord Annulli as lord in waiting, Lieutenant-Colonel Sir Arthur Biggs, who has been private secretary to the Prince of Wales for a number of years and prior to that time was Queen Victoria's private secretary; Sir Francis J. S. Hopwood, who has been permanent secretary of the board of trade since 1901, and Commander Bryan G. Godfrey Faussett as equerries.

### Cause of Yesterday's Accident.

After an investigation of yesterday's accident to the cruiser Indomitable, the following report was made: "An unusually high tide was running at the harbor entrance and the force of it threw the barge, which could not be managed, directly in front of the cruiser. The foremast of the barge was carried away and a huge hole stove in her side. In spite of the fact that the engines of the Indomitable were reversed, fol-

lowing the crash the cruiser lay to and experts examined her plates, while divers examined her armor below the water line. The investigation showed that the damage amounted to little more than the loss of some paint. The Prince of Wales and his party were not perturbed by the accident. The prince was on the bridge and waved a salute to the nearby craft when the voyage was resumed.

### Notables to Be at Quebec.

Quebec, July 16.—A list of the distinguished guests who are to be in this city during the coming week on the occasion of the great celebration of the tricentenary of the founding of Quebec would read like pages extracted from the "Almanach de Gotha" and the "Statesman's Year Book." First and foremost, of course, will be the Prince of Wales, who will be accompanied by a brilliant staff, so that none of the pomp and ceremony of the British court will be missing.

After his royal highness the most popular visitor to Quebec probably will be General Lord Roberts, the hero of the Boer war and probably the most popular man in the British army.

The United States will be officially represented by a party headed by Vice-President Charles W. Fairbanks and which will include a number of prominent army and naval officers.

The government of the French republic will be represented by Vice-Admiral Jaureguiberry, L. S. Herbet, councillor of state, and J. De Loynes, councillor of state. Other visitors of note will include Earl Dudley, the Duke of Norfolk, Earl Ranfurly, Sir Alfred Lyttleton, the Marquis of Londonderry, Lord Lovat and Sir Henry De Villiers.

The prominent officials and other men of note from all the provinces of Canada have been invited to attend the celebration and hundreds of them have accepted the invitation. Military organizations from every part of the Dominion will be in attendance and there will also be present a number of semi-military and other organizations from the United States. A special detachment of the northwest mounted police will serve as a bodyguard to the Prince of Wales during his visit to the city.

### Warships of Other Nations.

Warships belonging to the navies of Great Britain, France and the United States will fill the harbor of Quebec during the celebration. Several of the warships have already reached here and

others are expected before the end of the week. The crowd during the week will be the far largest that has ever assembled in any city of Canada. All of the hotel accommodations were reserved weeks ago and the boarding-houses likewise have booked all the guests they can accommodate. But the hotels and boarding-houses will take care of only a small proportion of the celebration visitors. Private residences will accommodate hundreds and countless others will be sheltered in the tented city, which will be one of the unique features of the celebration.

As on all such occasions it is expected that the city will be the Mecca for pickpockets and other varieties of criminals who are always attracted where the crowds are largest. The local authorities are taking every precaution to protect the visitors from these gentry. The local police and detective force will be more than doubled next week and will have the assistance of leading detectives from Montreal, New York, Chicago and other large cities.

## KNOCKER ON NAVY VISITS PRESIDENT

(United Press Leased Wire.) Oyster Bay, L. I., July 16.—Henry Reuterday was the guest of President Roosevelt yesterday. This is the first time the writer has seen the president since he visited the White House. It is understood that Reuterday went over the whole article with the president and pointed out to him the basis of the criticism.

## Companies Incorporated.

(Salem Bureau of The Journal.) Salem, July 16.—Articles of incorporation have been filed in the office of the secretary of state as follows: Yankina Bay Land & Abstract company; principal office, Toledo, Or.; capital stock, \$5,000; incorporators, Harmon W. Ong, Carrie M. Ong and Milton Holstead. The Biesner Auto-Livery company; principal office, Portland; capital stock, \$250,000; incorporators, Emma Becker, J. E. Biesner and Harry Biesner. Clatskanie & Nehalem Valley Electric Railway company; principal office, Clatskanie, Or.; capital stock, \$1,000,000; incorporators, A. E. Kurtz, C. L. Conyers, Henry Kratz and J. L. Woodan.

For appetites of growing folks  
For appetites of grown folks  
For all appetites — for all folks

**Uneeda Biscuit**

The World's Best Soda Cracker

5c In dust tight, moisture proof packages. Never sold in bulk.

NATIONAL BISCUIT COMPANY

## FOR MEN and WOMEN

# Crawford Shoe Store

270 WASHINGTON STREET.

## Sharp Pace for a Short Race

All Discontinued Lines and Broken Sizes Must Vacate in a Hurry

A straightforward business proposition. We have been in Portland less than a year, have established a splendid following, and have already arranged for the most elaborate assortment of fall shoe styles ever shown in this city. During past season popular demand has been heavy on some particular shoe patterns, and light on others. The purpose of this sale is to clean up the lines in which sizes are broken, and to stimulate business on such styles as have run second in public favor. Not an old model in the entire outfit.

Regular \$3.50 and \$4.00 Values

**\$3.15**

FOR MEN—High and low shoes; button, Blucher, buckle or regular lace patterns; pumps, Yale ties, Tuxedo ties, low shoes with two buttons and fancy buckle, high or low shoes with combination colored tops; patent colt, gnu calf, box calf, vici kid, gunmetal calf and tan leathers in all shades. A large assortment.

Regular \$4.00 and \$5.00 Values

**\$3.45**

FOR WOMEN—Every stylish pattern in demand this season—colonials, pumps, garden ties, Gibson ties and low shoes with one, two or four buttons. A great variety of regular high shoe models, in button, Blucher or lace. Different weights of sole and heights of heel. All the stylish shades of tan leathers, patent colt, gunmetal calf and vici kid.

This is a clear call. A genuine opportunity to secure shoes of exceptional high grade at prices extraordinarily low. Every pair will be sold in our usual careful manner and well backed by the liberal "Crawford" guarantee of satisfaction. Only the price is discounted—no restrictions as to fitting, exchanging or having your money refunded if you want it. Come in while assortment is largest.

Prices are stamped on the soles of all "Crawford Shoes" before they leave the factory. The prices are regulated by what goes into the shoes, not by what we can get out of our customers. Therefore reductions mean something.