THE MYTHS OF THE GULF STREAM

From the Chicago Chronicle

"The gulf stream has changed its course again," is the report of captains who make the port of Boston after having had more trouble than usual with currents along the coast.

"The gulf stream has changed its course again," is the comment of many New Englanders when a period of balmy weather chances along at a time when the almanacs say it should be cold.

"The gulf stream has changed its course again," is the remark of the inhabitant of New Brunswick to explain some freak or other of the climate.

"The gulf stream has changed its course again" scores of times in the last few years. It changed its course again a short time ago, according to a sea captain who saw the reporters in Atlantic avenue, and it will continue "changing its course again" for years and years, or until knowledge of the almost utter demolishment of the old theory is as widespread as were the charming details of that old theory itself. Government reports have not shattered it. Magazine articles do not seem to have accomplished much. Persons who were taught the old theory in their school days spread the pretty conception of the gulf stream and a change of the course of the gulf stream is handy for a dozen different purposes.

It was Benjamin Franklin who gave the name of "gulf stream" to the strange movement of a powerful warm stream along the Atlantic coast from below Florida to Cape Race, Newfoundland. The name itself is not apt as it might be, for actually the Gulf of Mexico has very little if any influence on the current, but the theories of Franklin as to the cause of the movement has been found in the last few years to have far more truth in them than had the beliefs of investigators of some years later. Their writings on various oddities of the gulf stream were put so attractively, however, they had so much apparent simplicity and they were backed up by such seemingly good evidence that for a time the memory of Franklin as a hydrographer suffered somewhat.

It is known that the gulf stream has practically no effect on the climate of any part of the United States or Canada, and surely has none at all on any part of Europe, and that there is no danger, a recent publication to the contrary notwithstanding, that New York City may become a semi-tropical spot and palm trees shelter the forms of strollers and loungers at the Battery.

Franklin discussed the casual effects of the winds on the currents and came near hitting the nail on the head. Believing that a knowledge of the gulf stream would be of use to the mother country, he made little noise about his discoveries and theories, and it was not until after the Revolution that English sailors paid much attention to the stream.

Franklin, like many others after him, erred in ascribing to the gulf stream a greater influence than it really had. It has been determined that its effect is practically nil after reaching north latitude 40 degrees and west longitude 60 degrees, where it loses itself in many other silent currents. Franklin thought that the gulf stream had a broad sweep out to sea and that it made a circuit of the Gulf of Mexico.

In his day there was probably much speculation on what the effects would be if the stream should shift its course. That sort of mental exercises was not indulged in strongly until later, when a United States officer, Lieutenant Maury, of the navy, published what was one of the most popular scientific books ever printed in the United States up to that time. This book told of the immense effect of the gulf stream on the climate of various parts of the world, and it led inevitably to assertions that a mere shift of the stream might make summer resorts of many places where the winters were long and severe, might affect seriously the climate of the Mediterranean countries and cause no end of meteorological upheaval generally.

Imagination Plays Part.

Even today articles are printed describing the tremendous import to the United States of any great change in the gulf stream. Many residents of Nantucket believe that they have noticed for years a gradual mellowing of their climate and they have speculated on the time when the nor'easter will be covered with dust in an attic room and duck suits and broad-brimmed straw hats will be quite modish in the winter season.

The almost countless unintentional misstatements in the American books, magazines and newspapers of the period when the scientific treatise on the gulf stream was published by Lieutenant Maury were repeated by foreign publications. Lieutenant Maury had dressed up an ordinary uninteresting subject so prettily that it "took" immediately. Translations of the book were made into foreign languages and no doubt thousands of Europeans of the Mediterranean countries have thought at one time or another that the climate of their land might be changed by a sudden shift in the all-powerful "river in the ocean" as many called the gulf stream.

It was years before it was demonstrated after careful experiments made at the instance of the United States government that the southwest winds of Europe, bringing moisture from the ocean, are not appreciably affected by the gulf stream. The Maury theory of the effect of the gulf stream was all very well at a time when the stream was supposed to swing over and wash the shores of parts of Europe, but when it was proved that the stream did not go, as a stream, within thousands of miles of Europe, his contentions fell to the ground.

In the same way it was once thought that the great banks of fog close to the coasts of Newfoundland and New England were caused by the intermixture of the warm water of the gulf stream and the icy currents from Labrador. It has been proved by meteorologists that the fogs which bother navigators are caused rather by the blowing of warm southwesterly winds over the cold water and that the fogs are therefore creatures of the wind rather than of the water.

The United States government was working on the problem of the gulf stream for years before it arrived at its present knowledge of the phenomenon. It is now known pretty definitely that the gulf stream is caused mainly by the different rates of speed at which the various parts of the earth revolve, by the difference in density of polar and equatorial waters, by the winds which are caused by the revolution of the earth, by the heaping up on the coasts of South America of great masses of water and by solar and lunar tides.

The general vertical circulation of the ocean brings southward masses of cold water, which sink beneath the northbound warmer water of the equatorial region. On account of the rotation of the earth each current deviates to the right so that the colder current tends to the southwest and the other to the northeast. The tendency is probably very slight at any one point, but in the course of ages it has become great. The steady trade winds aggravate the tendency of each current and the influence of the moon is at times powerful.

Direction of the Stream.

The breadth of the gulf stream at its narrowest point is about fifty miles and its depth something more than a third of a mile. Some parts are more than 100 miles wide. The velocity ranges from five or six miles an hour to two or three and there have been times when there is no perceptible current in many places. The course of the gulf stream is really far to the east of the Windward and Leeward Islands.

Following generally the contour of the coast of the Atlantic, the gulf stream is distinguished in many places by its relative warmth, saltness, color and motion, but not all these characteristics are to be observed beyond 40 degrees north and 60 degrees west. Between the Bermudas and the coast of South Carolina the coast is broken up into several bands of a total width of about 150 miles.

The general drift toward Europe from Newfoundland is no longer referred to by scientists as due to the gulf stream influence. The force of the stream is greatest, probably, in the straits of Florida, where it forces itself along the most easily followed path between the West Indies into the Carribbean sea, and thence partly into the Gulf of Mexico and around Cape Sable, Florida.

Lieutenant J. E. Pilsbury, of the United States navy, made a careful study of the gulf stream at the northern entrance to the straits of Florida, and determined that the hourly flow there is about 90,000,000 tons of water an hour. At three knots an hour about 463,000,000,000,000 tons a day flow through. It has been said that the gulf stream is equivalent to 2,000 Mississippi rivers flowing together, and that if one hour's flow of the water were evaporated there would be more than 50 pounds of salt for every man, woman and child in the United States, or more than could be carried by 100 times the number of vessels afloat.

So peculiar in coloring is the gulf stream in its earlier stages that the line where it is flowing alongside the other water of the ocean can be seen easily. Lieutenant Pillsbury found that the temperature of the gulf stream was seldom more than 83 degrees except under a tropical sun and in calm weather. Heat is gradually lost as the stream goes eastward and northward.

"Gales, storms, changes in the barometric pressure and the season of the year, besides other factors yet unknown," says one writer, "all combine to produce in direction, temperature and velocity fluctuations of a minor kind, while the general features of the stream remain fairly constant from year to year."

Lieutenant Pillsbury had many followers in the study of the gulf stream. Probably the most satisfactory results and the most exhaustive studies were made possible by his researches aboard the Blake.

As recently as 1897, when there was an abnormally cold winter in Massachusetts, many persons thought that the changing of the course of the gulf stream was the principal meteorological factor. One sea captain said that people did not know how much depended on that stream, and was quoted in a Boston newspaper as saying that a change might in time make Newfoundland a winter resort. Many captains recorded in their log books the finding of the warmest weather 250 or 300 miles from the coast.

Captain Jensen, of the United Fruit Company steamer Admiral Schley, was quoted in the Herald of last year as saying that the gulf stream was active to within twenty miles of Nantucket South Shoal lightship and noticeable 2 degrees farther north than usual. The temperature, he said, ranged from 72 to 86 degrees in July of that year and the nearby waters showed a falling off of 10 degrees from the temperature of the gulf stream. It was altogether out of its course and in an opposite direction from that in which it had strayed the winter before.

Many Different Reports.

In August of last year the stream was reported active 600 miles east of New York city at points where, some said, it should be hardly noticeable. One captain gave it as his opinion that the humid weather then prevailing was caused by the gulf stream.

In November last year Captain Rennicke, of the British ship Koranna, reported that in the sail from the Azores to Boston at a place where the gulf stream usually ran a knot an hour he found a current running east by north at a speed of a knot and three-quarters an hour. His opinion was that a hurricane had caused the change.

In May, 1906, a steamship captain said in New York that he found the gulf stream near Florida running westward at a rate of a knot and a half an hour, instead of northeast at that same rate, and the strength of the stream all along the coast was much more feeble than usual. In June of this year the captain of a Dominion line steamer arriving at Portland from Liverpool reported that in west longitude 40 degrees he found the gulf stream running in a westerly direction instead of the usual easterly course. Late in July it was reported by the skipper of a Morgan liner that the gulf stream had changed its eastward course southwest of the Florida peninsula and was running west.

All of these cases have been called to the attention of the United States hydrographic office, but the authorities there laugh at the idea of any but a slight and temporary aberration of the gulf stream from its usual course. It was stated that winds changed the current in many places, but that the gulf stream was following the course it had always followed and always would follow, and it was said also that as "river in the ocean" clearly defined and strong, the gulf stream does not exist north of Savannah.

BASEBALL

Outlook for the Season

Although it is rather early in the season for Victorians to be talking baseball, the subject is already going the round among the men of leather and the question is being daily asked, "What is going to be done in baseball this season?" But so far no satisfactory answer has been received. Victorians have not been given the baseball during the last few years that they have been accustomed to, and they are very anxious to see a return of the good days when Hal Chase, Elmer Emerson and Johnnie McManus, along with the Victoria boys, used to delight the big crowds to Oak Bay, and Victoria was given a class of ball that is seldom seen in a city of this size. Along this line it is not generally known that Victoria fans have had the opportunity of witnessing some of the best known players in the world perform on the home grounds, and they are very loath to confess that a back seat has been taken in the matter of baseball. It is true that in 1905 this city was represented in the Northwest league by a professional team, but the class of ball they presented to the public would not make an average school boy envious, and it is largely due to their work that baseball is in the condition it is at present. Last season the Ferwoods made an unsuccessful attempt to place a first class team in the field, but although the season might have been a financial success, from a sporting standpoint, it was far from being in the same class as that given to the public in 1903-4. After the lapse of practically two years the outlook for the coming season is very bright, and with a good team the city should meet with the same success as was experienced three years ago. If anything is to be done to give Victoria a first class team to represent the city in the Northwest league, it is time to give Victoria a first class team to represent the city in the Northwest league, it is time to get the playing grounds in condition. The majority of the enthusiasts are anxious to have baseball and are hoping that some effort will be made to have this city represented by a first class team. Applications for games have already been received from teams on the Sound, and if a local team is organized no difficulty will be experienced in filling many dates.

Hospital Directors Meet

Routine business only was transacted at a meeting of the board of directors of the Provincial Royal Jubilee Hospital held last evening at the board of trade rooms. President Foreman occupied the chair and there were also present Messrs. Helmcken, Wilson, Lewis, Brett, Mable, Campbell and Day. The usual reports were received and adopted. This was followed by some discussion in regard to proposed additions and improvements to the hospital. No definite action, however, was decided upon.

MINERAL ACT.

(Form F.)

Certificate of Improvements.

NOTICE.

Mabel, Dora and Ruby Fraction mineral claims, situate in the Helmcken Mining Division of Victoria District, located on Koksilah Mountains.

Take notice that the Koksilah Mining Company, Ltd., (Non-personal Liability), free miner's certificate No. B19668, intend, sixty days from the date hereof, to apply to the Mining Recorder for a Certificate of Improvements for the purpose of obtaining a Crown Grant of the above claims.

And further take notice that action, under section 37 must be commenced before the issuance of such Certificate of Improvements.

Dated this 8th day of February, 1907.

KOKSILAH MINING COMPANY, LTD., (Non-personal Liability.)

WILLIAM FORREST, Agent.

NOTICE is hereby given that, 30 days after date, I intend to apply to the Hon. Chief Commissioner of Lands and Works for a special license to cut and carry away timber from the following described lands on Hunter Island, Coast District, Range 2:

No. 1.—Commencing at a post on Koowee Bay, at the mouth of Koowee River; thence east 40 chains; thence south 160 chains; thence west to the shore; thence north along shore to point of commencement.

No. 2.—Commencing at a post on Koowee Bay, about 2½ miles south of No. 1 post; thence north 40 chains; thence east 80 chains; thence south 80 chains; thence west 80 chains; thence north 40 chains along shore to point of commencement.

No. 3.—Commencing at a post on the east bank of Kilddit Pass, about two miles south of the entrance to Kilddit Rapids; thence east 40 chains; thence north 80 chains; thence west 40 chains; thence north 40 chains; thence west about 60 chains more or less, to the shore; thence southeasterly along shore to point of commencement.

No. 4.—Commencing at a post near No. 3 post; thence east 80 chains; thence south 80 chains; thence west 80 chains to shore; thence north along shore to point of commencement.

No. 5.—Commencing at a post on the east bank of Kilddit Bay, north of Second Narrows; thence south 40 chains; thence west 80 chains; thence south 40 chains; thence west 40 chains to shore; thence northeasterly along shore to point of commencement.

No. 6.—Commencing at a post planted near No. 5 post; thence east 80 chains; thence north 80 chains; thence west 80 chains to the shore; thence south along shore to point of commencement.

No. 7.—Commencing at a post on the east shore of Kilddit Bay, about two miles north of post No. 6; thence east 80 chains; thence south 80 chains; thence west 80 chains to shore; thence north along shore to point of commencement.

No. 8.—Commencing at a post near post No. 7; thence east 80 chains; thence north 80 chains; thence west 80 chains to the shore; thence south along shore to point of commencement.

No. 9.—Commencing at a post on the south bank of Kilddit Bay, near the entrance; thence west 80 chains; thence south 40 chains; thence west 80 chains; thence north to the shore; thence easterly along shore to point of commencement.

No. 10.—Commencing at a post planted near post No. 9; thence west 80 chains; thence south 80 chains; thence east 80 chains to shore; thence northerly along shore to point of commencement.

No. 11.—Commencing at a post about 1½ miles south of post No. 10; thence south 40 chains; thence west 80 chains; thence north 80 chains; thence east 80 chains to shore; thence south along shore to point of commencement.

No. 12.—Commencing at a post on Kilddit Rapids, about 1½ miles south of post No. 11; thence west 80 chains; thence north 80 chains; thence east 80 chains to shore; thence southerly along shore to point of commencement.

No. 13.—Commencing at a post near post No. 12; thence west 80 chains; thence south 80 chains; thence east 80 chains to shore; thence northerly along shore to point of commencement.

No. 14.—Commencing at a post on the east shore of Kilddit Rapids, about 1½ miles north of entrance; thence east 80 chains; thence north 80 chains; thence west 80 chains; thence south 80 chains to point of commencement.

No. 15.—Commencing at a post near post No. 14; thence east 80 chains; thence south 80 chains; thence west 80 chains to shore; thence northerly along shore to point of commencement.

Located 29th January, 1907.

F. M. RATTENBURY,
H. C. Fritts, Agent.

NOTICE is hereby given that, 30 days after date, I intend to apply to the Hon. the Chief Commissioner of Lands and Works for a special license to cut and carry away timber from the following described lands:

No. 1.—Commencing at a post planted near the 11½-mile post on the E. & N. Ry. boundary line, northwest of Jordan River, Renfrew District; thence west 40 chains; thence north 40 chains; thence west 80 chains; thence north 80 chains; thence east 80 chains; thence south 80 chains; thence east to the said E. & N. boundary line; thence south-easterly along the line to point of commencement.

No. 2.—Commencing at a post at the northwest corner of No. 1; thence south 80 chains; thence west 80 chains; thence north 80 chains; thence east 80 chains to point of commencement.

No. 3.—Commencing at a post at the northwest corner of No. 2; thence south 80 chains; thence west 80 chains; thence north 80 chains; thence east 80 chains to point of commencement.

No. 4.—Commencing at a post at the northwest corner of No. 3; thence south 80 chains; thence west 80 chains; thence north 80 chains; thence east 80 chains to point of commencement.

No. 5.—Commencing at a post at the northwest corner of No. 4; thence south 80 chains; thence west 80 chains; thence north 80 chains; thence east 80 chains to point of commencement.

No. 6.—Commencing at a post at the southeast corner of No. 1; thence north 80 chains; thence west 80 chains; thence south 80 chains; thence east 80 chains to point of commencement.

No. 7.—Commencing at a post on the south bank of Kilddit Bay, near the entrance; thence west 80 chains; thence south 40 chains; thence west 80 chains; thence north to the shore; thence easterly along shore to point of commencement.

No. 10.—Commencing at a post planted near post No. 9; thence west 80 chains; thence south 80 chains; thence east 80 chains to shore; thence northerly along shore to point of commencement.

No. 11.—Commencing at a post about 1½ miles south of post No. 10; thence south 40 chains; thence west 80 chains; thence north 80 chains; thence east 80 chains to shore; thence south along shore to point of commencement.

No. 12.—Commencing at a post on Kilddit Rapids, about 1½ miles south of post No. 11; thence west 80 chains; thence north 80 chains; thence east 80 chains to shore; thence southerly along shore to point of commencement.

No. 13.—Commencing at a post near post No. 12; thence west 80 chains; thence south 80 chains; thence east 80 chains to shore; thence northerly along shore to point of commencement.

No. 14.—Commencing at a post on the east shore of Kilddit Rapids, about 1½ miles north of entrance; thence east 80 chains; thence north 80 chains; thence west 80 chains; thence south 80 chains to point of commencement.

No. 15.—Commencing at a post near post No. 14; thence east 80 chains; thence south 80 chains; thence west 80 chains to shore; thence northerly along shore to point of commencement.

Located 29th January, 1907.

F. M. RATTENBURY,
H. C. Fritts, Agent.

NOTICE is hereby given that thirty days after date I intend to apply to the honorable the Chief Commissioner of Lands and Works for permission to cut and carry away timber from the following described lands situated on Albernl Canal, Clayoquot District, B.C.:

No. 1.—Commencing at the northwest corner of Timber Limit No. 638, thence 80 chains west, thence 80 chains south, thence 80 chains east, thence 80 chains north to point of commencement.

2.—Commencing at the northwest corner of Claim No. 1, thence 80 chains west, thence 80 chains south, thence 80 chains east, thence 80 chains north to point of commencement.

No. 3. Commencing at the northwest corner of Claim No. 2, thence 80 chains west, thence 80 chains south, thence 80 chains east, thence 80 chains to point of commencement.

No. 4.—Commencing at the northwest corner of Claim No. 3, thence 80 chains north, thence 80 chains east, thence 80 chains south, thence 80 chains west to point of commencement.

No. 5.—Commencing at the northeast corner of Claim No. 4, thence 80 chains east, thence 80 chains south, thence 80 chains west, thence 80 chains north to point of commencement.

Staked January 26th, 1907.

A. F. GWIN,
Per T. Rowley, Agent.

NOTICE is hereby given that thirty days after date I intend to apply to the honorable the Chief Commissioner of Lands and Works for a special license to cut and carry away timber from the following described lands situated in District, B.C.

No. 1.—Starting at the southeast corner post situated by the west boundary of lot 201 and by the dividing line between subsections 28 and 21, and township 26, Rupert District, thence 80 chains north, thence 80 chains west, thence 80 chains south, thence 80 chains east to point of commencement.

No. 2.—Commencing at the northeast corner post adjoining post of No. 1, thence 80 chains south, thence 80 chains west, thence 80 chains north, thence 80 chains east to point of commencement.

No. 3.—Commencing at the southeast corner post situate about 80 chains west of No. 1, thence 80 chains north, thence 80 chains west, thence 80 chains south, thence 80 chains east to point of commencement.

No. 4.—Commencing at the northeast corner post adjoining post No. 3, thence 80 chains south, thence west to shore line, thence north by following the shore line up to a point due west of initial post, thence east to point of commencement.

A. F. GWIN,
W. B. GARRARD,
C. NORTSTROM, Agent.

Dated Victoria, B. C., January 21, 1907.

NOTICE is hereby given that 30 days after date we intend to apply to the Hon. Chief Commissioner of Lands and Works for a special license to cut and carry away timber from the following described lands situated on Albernl Canal, Clayoquot District:

Commencing at a post on Clayoquot Arm planted at the N.W. corner lot No. 613 and marked S.W. Corner, post C and S timber limit, thence E. 60 chains; thence N. 120 chains; thence W. 60 chains; thence along the beach to commencement containing 640 acres more or less.

FRANK CLAPP.
THOS. STOCKHAM.

January 8, 1907.

2. Commencing at a post planted on Clayoquot Arm marked S.W. corner, post C. and S. timber limit, about one and one half miles of lot 613, thence E. 60 chains; thence N. 120 chains; thence W. 60 chains; thence along the beach to point of commencement, containing 640 acres more or less.

FRANK CLAPP.
THOS. STOCKHAM.

January 8, 1907.

No. 3. Commencing at a post marked S. W. corner post C. and S. timber limit, and planted at a post marked S. E. corner lot 615, on Kennedy Lake, and about half a mile E of Sand Creek, thence N. 60 chains, thence E. 120 chains, thence S 60 chains, thence along the beach to point of commencement, containing 640 acres more or less.

FRANK CLAPP.
THOS. STOCKHAM.
Locater.

4. Commencing at a post planted on the E. bank of Sand creek, at a post marked lot 615, and marked S.W. corner, C. and S. timber limit; thence E. 40 chains; thence North 120 chains; thence W. 40 chains; thence S. 100 chains; thence West 40 chains; thence S. 40 chains; thence E. 40 chains; thence North to point of commencement, containing 640 acres more or less.

FRANK CLAPP.
THOS. STOCKHAM.

January 12, 1907.

5. Commencing at a post planted on Kennedy lake at S.E. corner lot 66 and marked S.W. corner post C. and S. timber limit; thence N. 40 chains; thence W. 40 chains; thence N. 40 chains; thence E. 100 chains; thence S. 80 chains; thence W. along the beach to point of commencement, containing 640 acres more or less.

FRANK CLAPP.
THOS. STOCKHAM.

January 14, 1907.

6. Commencing at a post planted about 40 chains south of S. W. corner lot 616 and marked S.E. corner post C. and S. timber limit; thence N. 100 chains; thence W. 40 chains; thence S. 100 chains; thence W. 40 chains to point of commencement, containing 640 acres more or less.

FRANK CLAPP.
THOS. STOCKHAM.

January 14, 1907.

NOTICE is hereby given that I intend to apply to the Chief Commissioner of Lands and Works for a lease for fishing purposes, of the following described area, situate at the head of Rivers Inlet, Coast District.

Commencing at a post marked N. W. Corner, placed about ten chains north of the permanent site established to denote the limit for fishing with seines; thence south twenty chains; thence east twenty chains; thence north twenty chains; thence west twenty chains to the place of commencement, and embracing 40 acres more or less and sea, and land covered by the sea.

ARTHUR HOLMES.

NOTICE is hereby given that thirty days after date I intend to apply to the honorable the Chief Commissioner of Lands and Works for a special license to cut and carry away timber from the following described lands situated in Rupert District, B. C., on the west arm:

No. 1.—Commencing at the northwest corner of Limit 196 dated January 28th, 1907; thence east 160 chains, thence north 40 chains, thence west 160 chains, thence south 40 chains to point of commencement, being south half of sections 6 and 5, township 25, staked January 28th, 1907.

No. 2.—Commencing on shore on township line running north and south on section 1, township 32, thence north 90 chains, thence west 80 chains, thence south 70 chains, thence east along shore line to point of commencement, staked January 28th, 1907.

No. 3.—Commencing at a post on shore line at head of Atluck Lake, on corner of section 2, township 32, thence north 80 chains, thence west 80 chains, thence south 80 chains, thence east 80 chains to point of commencement. Staked January 28th, 1907.

No. 4.—Commencing at a post on south east corner of section 36, township 26, thence north 80 chains, thence west 80 chains, thence east 160 chains, thence south 40 chains to point of commencement, being the south half of sections 36 and 35, staked February 1st, 1907.

Dated at Victoria, B. C., February 14th, 1907.

JAMES FLETCHER.
Stakes marked J. Fletcher.

NOTICE IS HEREBY GIVEN that thirty days after date I intend to apply to the Honorable the Chief Commissioner of Lands and Works for permission to cut and carry away timber from the following described lands:

No. 29.—Commencing at a post on the North-east shore of South Bay, Moresby Island, Queen Charlotte Group, thence east 80 chains, thence south 80 chains, thence west 80 chains, thence north 80 chains to point of commencement.

No. 23.—Commencing at a post about 100 yards south west of Creek on South Bay and on West Boundary of Location 22, thence south 80 chains, then west 80 chains, thence north 80 chains, thence east 80 chains, to point of commencement.

No. 24.—Commencing at a post near the North east corner of No. 22, thence east 80 chains, thence south 80 chains, thence west 80 chains, thence north 80 chains to point of commencement.

No. 25.—Commencing at a post near the North east corner of No. 24, thence east 80 chains, thence south 80 chains, thence west 80 chains, thence north 80 chains to point of commencement.

No. 26.—Commencing at the North east corner of No. 25, thence east 80 chains, thence south 80 chains, thence west 80 chains, thence north 80 chains to point of commencement.

No. 27.—Commencing at a post on the North east shore of Allford Bay near North Boundary of Lot No. 4, thence east 80 chains, thence north 80 chains, thence west 80 chains, thence or less to shore, thence and following shore line to point of commencement.

No. 28.—Commencing at J. M.'s location Post No. 16, thence east 80 chains, thence south 80 chains, thence west 80 chains, thence north 80 chains to point of commencement.

No. 29.—Commencing at a post on Graham Island in bay north of Lina Island, thence north 80 chains, thence west 80 chains, thence south 80 chains more or less to shore, thence along shore line to point of commencement.

No. 30.—Commencing at location Post of No. 29, thence north 80 chains, thence east 80 chains, thence south 80 chains more or less to shore, thence following shore line westerly in point of commencement.

JOHN MACMILLAN
Locator.

Victoria, B. C. February 14th, 1907.

NOTICE is hereby given that 60 days after date I intend to make application to the Hon. the Chief Commissioner of Lands and Works for a special license to cut and carry away timber from the following described lands on Saturna Island:

No. 1. Beginning at a post marked L. S. Higgs, approximately and by intention, the northwest corner of Section 9, thence east 20 chains, thence south 10 chains, thence east 20 chains, thence south 30 chains, thence east 40 chains, thence south 40 chains, thence west 80 chains, thence north 40 chains, thence west 40 chains, thence north 20 chains, thence east 20 chains, thence north 20 chains to point of commencement.

No. 2. Beginning at a post marked L. S. Higgs, approximately and by intention the northwest corner of Section 10, thence east 40 chains, thence south 40 chains, thence west 80 chains, thence north 40 chains, thence east 40 chains, thence north 20 chains, thence east 40 chains, thence north 20 chains to point of commencement.

L. S. HIGGS,
Agent for A. J. Gaisache.

Dated Jan. 12th. 1907.

Lever's Y-Z (Wise Head) Disinfectant Soap Powder is better than other powders, as it is both soap and disinfectant.

NOTICE is hereby given that 60 days after date I intend to apply to the Hon. Chief Commissioner of Lands and Works for a special license to cut and carry away timber from the following described lands situated in the Clayoquot District:

Lot C.—All that piece of water and submerged land lying south of Parsons Bridge in Esquimalt harbor, British Columbia, shown colored red as Lot C on plan made by F. C. Swannell, D. L. S., B. C. L. S., under date December 14th, 1906, and more particularly described as follows:—Commencing at a stone monument planted at the S. E. corner of Section 98, Esquimalt District; thence east astronomic sixteen hundred and twenty-five (1,625) feet, more or less, to a post painted on the east shore thence north-westerly and following the shore to Parsons Bridge; thence following the shore to initial point; exclusive of any part of Cole Island; the whole containing 45 acres, more or less.

ALFRED MARKHAM.

Dated December 19th, 1906.

MINERAL ACT.

(Form F.)

Certificate of Improvements.

Southern Cross, Ballerat, Little Dipper Fraction, Constance Fraction mineral claims, situate in the Alberni mining division of Clayoquot district. Located on the east side of Uchucklesit Harbor.

Take notice that the Southern Cross Copper Mine Co., Limited, free miner's certificate No. B70,925, intend, sixty days from the date hereof, to apply to the Mining Recorder for a Certificate of Improvements, for the purpose of obtaining a Crown Grant of the above claim.

And further take notice that action, under section 37, must be commenced before the issuance of such Certificate of Improvements.

Dated this 24th day of January, A.D. 1907.

NOTICE

Notice is hereby given that sixty (60) days after date, we intend to apply to the Hon. Chief Commissioner of Lands and Works for permission to purchase the following described lands, situated at Glendale Cove, on the south side of Knight's Inlet, Coast District No. 2, for cannery purposes: Commencing at a post marked R. C. & M. C.'s S. W. corner, thence east 40 chains, thence north 40 chains, thence west 40 chains to shore line, thence following shore line to point of commencement, containing 160 acres more or less.

R. CHAMBERS.
M. CHAMBERS.

January 1st, 1907.

NOTICE

Take notice that 30 days after date I intend to apply to the Chief Commissioner of Lands and Works for permission to cut and carry away timber from the following described lands situated in the Rupert District.

Commencing at a post planted 20 chains due east from the S. W. corner of Section 2, about 1 mile south of the mouth of the Kokish river, thence 80 chains south, thence 100 chains west to the S. E. corner of Douglas Grant; thence north 80 chains; thence 40 chains north to the south boundary of Section 1, thence 40 chains east to S. E. corner of lot 384, thence 40 chains north; thence 60 chains east to point of commencement.

LAWRIE W. LANSDOWNE.

NOTICE is hereby given that 60 days from date we intend to apply to the Hon. The Chief Commissioner of Lands and Works for permission to lease the foreshore of the following described land situated on the north shore of Skeena River fronting lot (11) eleven, block (1) one, range 5, Coast District, for wharf building purposes.

JANE NOBLE.
ELLEN ADAMS.

Port Essington, B.C., December 15, 1906.

NOTICE is hereby given that 30 days after date we intend to apply to the Hon. Chief Commissioner of Lands and Works for special license to cut and carry away timber from the following described land, situated in Rupert District.

Claim No. 1.—Commencing at a post at the head of Atluck Lake, marked "International Lumber Co."; thence 80 chains north; thence 80 chains west; thence 80 chains south; thence 80 chains east to place of commencement.

Claim No. 2.—Commencing at same post as No. 1, marked "N. E. corner"; thence 80 chains north; thence 80 chains west; thence 80 chains south; thence 80 chains east to place of commencement.

Claim No. 3.—Commencing at a stake at the outlet of Atluck Lake, marked "International Lumber Co."; thence 40 chains north; thence 80 chains east; thence 80 chains south; thence 80 chains west; thence 40 chains north to place of commencement.

Claim No. 4.—Commencing at a stake about one mile east from the outlet of Atluck Lake, marked "International Lumber Co., S. W. corner"; thence 80 chains north; thence 80 chains east; thence 80 chains south; thence 80 chains west to place of commencement.

Located January 4th, 1907.

THOS. J. MARKS

NOTICE is hereby given that thirty days after date I intend to apply to the honorable the Chief Commissioner of Lands and Works for a special license to cut and carry away timber from the following described lands situated in Rupert District, B. C.

No. 1.—Commencing at the southeast corner post on the east boundary of the Indian Reserve, thence following the boundary of the Indian Reserve to the north-east corner, thence 60 chains east, thence south to the shore line, thence following the shore line westerly and to point of commencement.

January 26, 1907.

A. F. GWIN,
W. B. GARRARD.

NOTICE is hereby given that thirty days after date I intend to apply to the honorable the Chief Commissioner of Lands and Works for permission to lease the foreshore of the following described land situated in Clayoquot District, B.C.

No. 1.—Commencing at a post planted about 30 chains west of the southwest corner of Location No. 1, thence south 80 chains, thence west 80 chains, thence north 80 chains, thence east 80 chains to point of commencement.

No. 4.—Commencing at a post planted about 40 chains west of the southwest corner of Claim No. 2, thence west 80 chains, thence north 70 chains more or less to the south line of Lot 85, thence east 80 chains, thence south 70 chains more or less to the point of commencement.

CHAS. TAYLOR.

Dated, Victoria, B.C., December 28, 1906.

NOTICE is hereby given that thirty days after date I intend to apply to The Honourable the Chief Commissioner of Lands and Works for a special license to cut and carry away timber from the following described lands, situate in the Renfrew district.

No. 1. Beginning at the North East corner of Timber Limit no. 10,492, thence north 80 chains, thence west 80 chains, thence south 80 chains, thence east 80 chains to point of beginning.

No. 2. Beginning at South West corner of No. 1, thence North 80 chains, thence west 80 chains, thence south 80 chains, thence east 80 chains to point of beginning.

No. 3. Beginning at South West corner of No. 2, thence north 80 chains, thence west 80 chains, thence south 80 chains, thence east 80 chains to point of beginning.

No. 4. Beginning at South West corner of No. 3, thence north 80 chains, thence west 80 chains, thence South 80 chains, thence east 80 chains to point of beginning.

No. 5. Beginning at North East corner of No. 1, thence East 80 chains, thence north 80 chains, thence west 80 chains, thence south 80 chains to point of beginning.

No. 6. Beginning at South West corner of No. 5, thence north 80 chains, thence west 80 chains, thence south 80 chains, thence east 80 chains to point of beginning.

No. 7. Beginning at South West corner of No. 6, thence north 80 chains, thence west 80 chains, thence south 80 chains, thence east 80 chains to point of beginning.

No. 8. Beginning at the South West corner of No. 7, thence north 80 chains, thence west 80 chains, thence south 80 chains, thence east 80 chains to point of beginning.

No. 9. Begining at South West corner of No. 8, thence north 80 chains, thence west 80 chains, thence south 80 chains, thence east 80 chains to point of beginning.

No. 10. Beginning at South West corner of No. 9, thence north 80 chains, thence west 80 chains, thence south 80 chains, thence east 80 chains to point of beginning.

No. 11. Beginning at South West corner of No. 10, thence north 80 chains, thence west 80 chains, thence south 80 chains, thence east 80 chains to point of beginning.

No. 12. Beginning at South West corner of No. 11, thence north 80 chains, thence west 80 chains, thence south 80 chains, thence east 80 chains to point of beginning.

No. 13. Beginning at South West corner of No. 12, thence north 80 chains, thence west 80 chains, thence south 80 chains, thence east 80 chains to point of beginning.

No. 14. Beginning at north east corner of No. 13, thence east 80 chains, thence north 80 chains, thence west 80 chains, thence south 80 chains to point of beginning.

No. 15. Beginning at South East corner of No. 14, thence east 80 chains, thence north 80 chains, thence west 80 chains, thence south 80 chains to point of beginning.

No. 16. Beginning at South East corner of No. 15, thence east 80 chains, thence north 80 chains, thence west 80 chains, thence south 80 chains to point of beginning.

No. 17. Beginning at South East corner of No. 16, thence east 80 chains, thence north 80 chains, thence west 80 chains, thence south 80 chains to point of beginning.

No. 18. Beginning at South East corner of No. 17, thence east 80 chains, thence north 80 chains, thence west 80 chains, thence south 80 chains to point of beginning.

No. 19. Beginning at South East corner of No. 18, thence east 80 chains, thence north 80 chains, thence west 80 chains, thence south 80 chains to point of beginning.

No. 20. Beginning at South East corner of No. 19, thence east 80 chains, thence north 80 chains, thence west 80 chains, thence south 80 chains to point of beginning.

C. T. MOORE.

Dated at Victoria, B. C., this 23rd. day of January, 1907.

NOTICE IS HEREBY GIVEN that thirty days after date I intend to apply to the Honourable the Chief Commissioner of Lands and Works for permission to cut and carry away timber from the following described lands situated on Queen Charlotte Islands, Northern British Columbia, and described as follows:

No. 1.—Commencing at a post planted on a small bay about four miles east of East Narrows, Skidegate Channel, thence north 40 chains, thence west 40 chains, thence South 40 chains, thence west 80 chains, thence south 40 chains, thence west 40 chains, thence south 40 chains more or less to the shore, thence along shore northeasterly to the point of commencement.

No. 2.—Commencing at southeast corner of Claim No. 1, thence north 40 chains, thence east 40 chains, thence north 40 chains, thence east 80 chains, thence south 80 chains more or less to the shore, thence along the shore southwesterly to the point of commencement.

No. 3.—Commencing at a post planted on the south shore of Skidegate Channel, about south from Location Post No. 1, thence south 40 chains, thence west 160 chains, thence north 40 chains more or less to the shore, thence along the shore easterly to the point of commencement.

No. 4.—Commencement at the northeast corner of Claim No. 1, thence south 40 chains, thence east 160 chains, thence north 40 chains more or less to the shore, thence along the shore westerly to the point of commencement.

No. 5.—Commencing at a post planted on the north shore of Skidegate Channel opposite Thurston Rock, thence north 40 chains, thence west 80 chains, thence south 40 chains more or less to the shore, thence along the shore easterly to the point of commencement.

No. 6.—Moresby Island. Commencing at a post near the west entrance of East Narrows, thence south 40 chains, thence west 160 chains, thence north 40 chains more or less to the shore, thence along the shore easterly to the point of commencement.

No. 7.—Commencing at a post on the west side of the entrance to North Arm, thence west 40 chains, thence north 80 chains, thence west 40 chains, thence north 80 chains, thence east 20 chains more or less to the shore, thence along the shore southeasterly to the point of commencement.

No. 8.—Commencing at a post about ¼ of a mile west from the head of the North Arm, thence north 80 chains, thence east 80 chains, thence south 80 chains thence west 80 chains to point of commencement.

No. 9.—Commencing at a post at the southeast corner of Claim No. 8, thence north 40 chains, thence east 80 chains, thence south 80 chains, thence west 80 chains, thence north 40 chains to point of commencement.

No. 10.—Commencing at a post planted at the head of Long Bay, Moresby Island, thence east 40 chains, thence south 80 chains, thence west 40 chains, thence south 40 chains, thence west 80 chains more or less to the shore. Thence along the shore to point of commencement.

No. 11.—Commencing at a post on the north shore of the mouth of West Narrows, thence north 120 chains, thence east 80 chains, thence south 80 chains more or less