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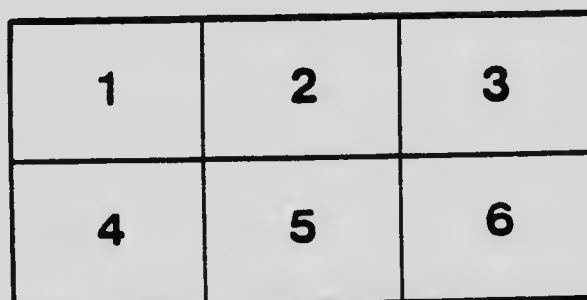
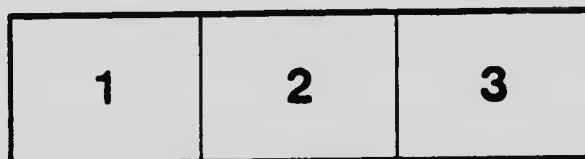
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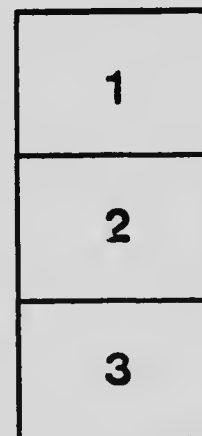
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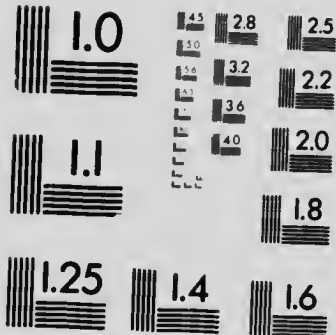
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CANADA
DEPARTMENT OF MINES
GEOLOGICAL SURVEY BRANCH

HON. W. TEMPLEMAN, MINISTER, A. P. LOW, DEPUTY MINISTER;
R. W. BROOK, ACTING DIRECTOR.

REPORT

ON A

RECENT DISCOVERY OF GOLD

NEAR LAKE MEGANTIC, QUEBEC

BY

JOHN A. DRESSER.



OTTAWA

PRINTED BY S. E. DAWSON, PRINTER TO THE KING'S MOST
EXCELLENT MAJESTY

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No. 1028.



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No. 1028.

Deac. 1985

MONTREAL, April 23, 1908.

R. W. BROCK, Esq.,
Acting Director,
Geological Survey Branch,
Ottawa, Ont.

SIR,—I beg to submit herewith, a note on the recent discovery
of gold near Lake Megantic, Que.

I have the honour to be, sir,
Your obedient servant,

JOHN A. DRESSER.

J. L.

A RECENT DISCOVERY OF GOLD NEAR LAKE MEGANTIC, QUEBEC.

JOHN A. DRESSER



LOCATION.

A discovery of gold, which has recently attracted much attention in this district, has been made in the township of Marston in the south eastern part of the county of Compton, a few miles from the village of Lake Megantic. Megantic station, on the Canadian Pacific railway, between Montreal and St. John, is 175 miles from the former, and 307 fr the latter place. It is also connected with Quebec city by the Quebec Central railway, the distance being sixty miles. The place where the gold has been found is in the fifth range of Marston, principally upon lot 19. The distance from Megantic station by road is about eight miles, but this can be shortened to less than six at seasons of the year when the lake can be crossed by boats, or sleighs.

THE DISTRICT.

Lake Megantic is a sheet of water some nine miles in length from north to south, and from a mile to a mile and a half wide. It is drained to the northward by the Chaudière river, which empties into the St. Lawrence river a few miles above Quebec city, after a course of 120 miles. It was on the tributaries of this river, notably the Gilbert, Famine, and du Loup, in the county of Beauce, some forty miles from Lake Megantic, that aboriginal gold was successfully mined for many years.

Victoria bay, on the west side of Lake Megantic, and three miles from its northern end, is the most prominent irregular feature in the shore-line. The head of this bay is within a mile and a half of the gold locations. Victoria river, which empties

into Victoria bay, is a stream some fifteen miles in length, and has several tributaries, the largest of which takes its head near Big Megantic mountain. Along the Victoria river a considerable number of prospecting licences have been lately taken out; the licensee holders evidently considering that the discovery of gold in the rock of the neighbouring hills is a favourable indication of the occurrence of placer deposits in the valleys.

The only other stream of importance emptying into Lake Megantic is the Arnold river, which enters at the head or extreme south end of the lake after a course of fifteen or twenty miles near and parallel to the watershed which forms the boundary line between the province of Quebec and the United States. The mouth of the Arnold is only six miles from the boundary of the State of Maine, and its source is near the headwaters of the Kennebec river, in that State. It has received its name from having formed part of the route followed by General Arnold and his army in the desperate invasion of Canada by way of the Kennebec and Chaudière, to Quebec, in the late autumn of 1775. Several small deposits of copper are reported from the vicinity of this river in the township of Woburn.

The country along the boundary line, and for some distance north of it, is generally wooded. Small farms were opened on the west side of Lake Megantic, forty years ago, and many parts of the district are now cleared. There are, however, considerable areas of spruce forest still remaining, but they are being rapidly reduced by the lumbermen.

GEOLOGY.

The areal geology of this district has been discussed by Dr. R. W. Ells, of the Geological Survey, in the Annual Report for 1886. The map accompanying that report shows the district to the north-west of Victoria bay—including the locality of the recently discovered gold, and the valley of the Victoria river—to be occupied by sedimentary schists, and slates of Cambro-Silurian. They are dark or iron grey, fine grained sediments, with a good slaty cleavage. As their colour would indicate, they contain small amounts of iron ore, and are somewhat micaceous.

They give a rather even surface to the country, which in this vicinity is broken only by the prominent intrusion of Big Megantic mountain. So far as known, this is wholly a mass of granite. It rises abruptly above the surrounding country for 1,500 or 2,000 feet, and occupies between twenty or thirty square miles.

The area between the south end of Lake Megantic and the International Boundary Line, except for some granite hills, is occupied by rocks of a much earlier age; being a part of the Pre-Cambrian formation brought up from the folding of the White mountains. Large portions of it are known to consist of diabase, and other basic eruptives. The intervening section is mapped as Cambrian. It is largely drift covered in the district in question.

The boundaries of the formations, and the strike of the rocks, are north-east and south-west: that is, parallel with the axes of the mountains on the south-east.

The surface of the entire district is generally covered by drift, which carries a large number of boulders—chiefly granite. Exposures of bed rock are few, and of small extent. Yet, the soil is not usually deep, and seems very evenly distributed.

OCCURRENCE OF THE GOLD.

In June 2, 1905, Mr. Alex. McLeod, of Marsboro, had his attention called by his little son Malcolm to a peculiar rock on lot 19, range IV, which had been uncovered in the operations of putting in the crop. The rock was found to carry native gold in visible amount. After some little exploratory work had been done, protracted negotiations regarding the mining rights followed, and in 1907 prospecting licences on this and several other lots were obtained by Mr. G. A. MacIver of Sherbrooke. Soon afterwards, Messrs. Gendreau, and others, secured licences on several lots, and by the end of November, 1907, prospecting licences had been granted upon some seventy-five lots. In the fall of 1907, the place was visited by Mr. J. Obalski, M.E., Inspector of Mines for the province of Quebec. In anticipation of his Annual Report not yet issued, Mr. Obalski has given a brief account of the occurrence in a more general paper presented at the annual

meeting of the Canadian Mining Institute, held at Ottawa, in March, 1908. Mr. Obalski reports that a specimen of the rock, considered by him to be an average of a band seventeen feet in width, yielded \$10.40 on assay.

At the time of the writer's visit, in April, 1908, no work had been done for several months, and the pits and trenches were filled with ice and water. Hence, samples showing a proper average of the fresh rock could not be obtained. The ground, however, was practically free from snow, and there was favourable opportunity for tracing out the relations and partial extent of the gold-bearing rock.

The rock which carries the gold at Marsboro is a fine-grained granite, slightly porphyritic in structure, and it occurs in the form of dikes in the Cambro-Silurian slates. Three separate dikes were located. They are between fifteen and thirty feet wide—as far as could be ascertained—and all seem to be about vertical in position. One of them was traced by occasional exposures, for 600 yards. They have been much shattered and broken, and in places are quite schistose. In the cracks thus formed there are many small reticulating veins of quartz, in some of which visible gold occurs. These veins are usually less than an eighth of an inch wide; although one, two inches in width, was seen. The granite of the dikes consists of quartz, and feldspar, with a little muscovite, and in places contains grains of dolomite. Grains of chalcopyrite are frequently found in some parts of the dikes, and a little pyrite and galena are also to be seen. The sulphides are, however, not limited in their occurrence to the little veins, as seems to be the case with the visible gold. The rock is often thickly spotted by iron rust; indicating that iron-bearing sulphides were originally disseminated throughout much of the dike. No gold has yet been found in the slates on either side of the dikes.

In direction, the three dikes are practically parallel. Dike No. 1, on lot 19, strikes N. 60° E. (Magnetic); dike No. 2, which occurs on lots 20 and 21, N. 55° E.; and dike No. 3, on lot 21, strikes N. 60° E. The direction of the cleavage of the slates, in the few places where it could be seen, was found to coincide nearly—if not quite—with the dikes.

On dike No. 1, there are four exposures:—

(A) A cutting about three feet deep has been made, exposing this rock at the edge of the woods which cover the western half of lot 19. Gold is reported to occur here.

(B) Two hundred feet north-east from A, a shaft fifteen feet by eight feet has been sunk and timbered to a depth of sixteen feet. Visible gold can be occasionally seen in the rock of the wall, and of the dump. The shaft was largely filled with ice and water at the time of my visit. This is the place where the original discovery was made, and Mr. Obalski's specimen was taken from this pit. The width of the dike here is seventeen feet.

(C) Five hundred and sixty feet north-east from B, is a cutting six feet deep, from which visible gold is reported. A specimen taken from this place, showing no visible gold, and carrying a few grains of chalcopyrite, was assayed for me by Mr. H. F. Strangways, M.Sc., at McGill University. The results obtained were:—

Gold	0.35 oz.	@ \$20.00=	\$7.00
Silver	0.70 oz.	@ \$0.60=	\$0.42
			\$7.42

A, B, and C are on lot 19, range V, and the width of the dike, as shown at these places, is between fifteen and twenty feet.

(D) Three hundred and seventy-three yards north-east from C, on the farm of Donald Smith, lot 20, range IV, the rock has been uncovered. This disclosure shows the regularity in direction of this dike. There is no exposure of the rock between C and D; but Mr. Smith found the rock at the latter point, by carrying a line in the direction indicated by pits B and C, until his property was reached. Then, sinking through some eight feet of drift, he found the dike rock, which is reported to carry gold.

A, B and C are on the lands under lease to J. A. MacIver and associates. The mining rights at pit D are owned by Donald Smith.

On dike No. 2 no work has been done, and there are only two natural exposures some forty yards apart. The dike appears on lot 20, a few feet from lot 21, and running obliquely towards the boundary line. It probably enters that lot near the more northerly of the two exposures seen. Slate was found on both sides of it, but at some distance. This dike is not less than ten, nor probably more than thirty feet, in width. It is 437 yards north-west from dike No. 1.

The mining rights on lot 20, are held by Mr. MacIver *et. al.*, and those on lot 21 by Messrs. Gendreau.

On dike No. 3, which is forty yards north-west from No. 2, and thus is on lot 21, a cutting apparently five feet deep has been made. Both walls are slate. Mr. A. B. Gendreau, of Lake Megantie, one of the owners, reports that the rock at this place yields a trace of gold.

SOURCE OF THE GOLD.

The gold has evidently been brought in by the granite magma of the dikes in which it is now found; since, as proved by assay, it occurs in the rock as well as in the small veins. The subsequent shattering of the dikes by regional metamorphism has afforded conditions for the concentration of the gold in the small veins in which visible amounts have been found.

EXTENT OF THE GOLD-BEARING ROCKS.

Thus far only three dikes have been found in this vicinity. But as little or no stripping has been done in search of them, since the natural exposures of bed rock are exceedingly few, and as the dikes yet found are near together, it seems likely that there are many others in the vicinity. Their number depends in a considerable measure upon the source of the dikes. Dikes are offshoots from larger masses of related rocks which have filled cracks and crevices formed by the intrusion of the larger bodies. These dikes all trend directly towards Big Megantic mountain, some seven miles distant. This is an intrusive mass which has been thrust up through the surrounding slates, and, as far as known, is of granite; having a chemical, and mineralogical com-

position that could give rise to such dikes. If Big Megantic mountain is the centre from which these dikes have come, the dikes would then be found more numerous as the mountain is approached. They would also be expected to occur radiating out in all directions around the mountain, but would likely be more numerous and more regular in their direction on the north-east and south-west sides, since these are the directions of the strike of the slates along which cracks would be most easily and regularly formed. For this reason, it would seem advisable to prospect those portions of the townships of Hampden, Ditton, and Chesham which are adjacent to the mountain on the south-west side, as well as the district intervening between Marshboro, and Big Megantic mountain. The long known occurrence of gold in the gravel of Ditton adds weight to this suggestion. If, on the other hand, the dikes in Marston are not connected with Big Megantic mountain, they must come from some subterranean mass of igneous rock. The occurrence of other dikes could not be predicted without more information than is now available. There is, however, no known evidence of importance to indicate that the dikes have such an origin; it is therefore, considered highly probable that they are offshoots from Big Megantic mountain, and consequently, are to be found in various directions around it. Much of the country between Marston dikes and the mountain is wooded, and portions of it a swamp, hence is unfavourable to prospecting.

Rocks similar to the dikes are reported to have been found on lot 26, range III, of Marston, some three miles north-east of the dikes seen, and directly on the line of their strike. There was not an opportunity to verify this. The line of strike carried three miles farther to the north-east, crosses lot 6, range XI, of Whitton, on which tin has been reported in float. Mr. Faribault reports to have observed a dike sixteen feet wide of the same rock crossing the road, ten chains west of Sandy cove of Lake Megantic, on lot 69, range II, south-west, township of Whitton. The direction of the dike is N. 63° E., and dips south-east 75° .

ALLUVIAL GOLD.

Following the announcement of the discovery of gold in the rock at Marshboro, a considerable number of licences have been

taken up along the Victoria river. These appear to be held chiefly by placer miners from Beauce. It was late in the season when most of the licences were obtained, and no work of importance has yet been done. With the lowering of the water in the early summer, the valley of the Victoria will probably be well prospected. At the time of writing, no evidence of the value of these prospects is available.

PROSPECTING OF THE DISTRICT.

It must be borne in mind that the gold-bearing rock at Marsboro is as yet known only in small amount, and that the proven occurrences of gold are few. While samples have been taken which appear to represent the general rock of the dikes, and have been found to carry gold, they are after all, only random specimens. Samples representative of each dike must be taken at many points before the commercial value can be distinctly asserted. At present there is no place exposed suitably for the taking of such samples. The dikes are definite bodies, and can be easily uncovered by stripping, and fresh rock could be obtained at a few feet from the surface. Continuous specimens taken across the dikes at suitable intervals would soon make it easily apparent what the possibilities are for profitable mining.

The country is easy of access, and prospecting is not unduly expensive. Once recognizing the direction of the dikes, it is a comparatively simple matter to follow them, as was shown by the discovery of pit D, on dike No. 1, by Donald Smith. If the gold proves to be persistent and at all uniformly distributed in the rock, the district would admit of mining under favourable conditions. Labour is not highly expensive, timber is plentiful, water supply can be had at no great distance, and transportation difficulties are not excessive.

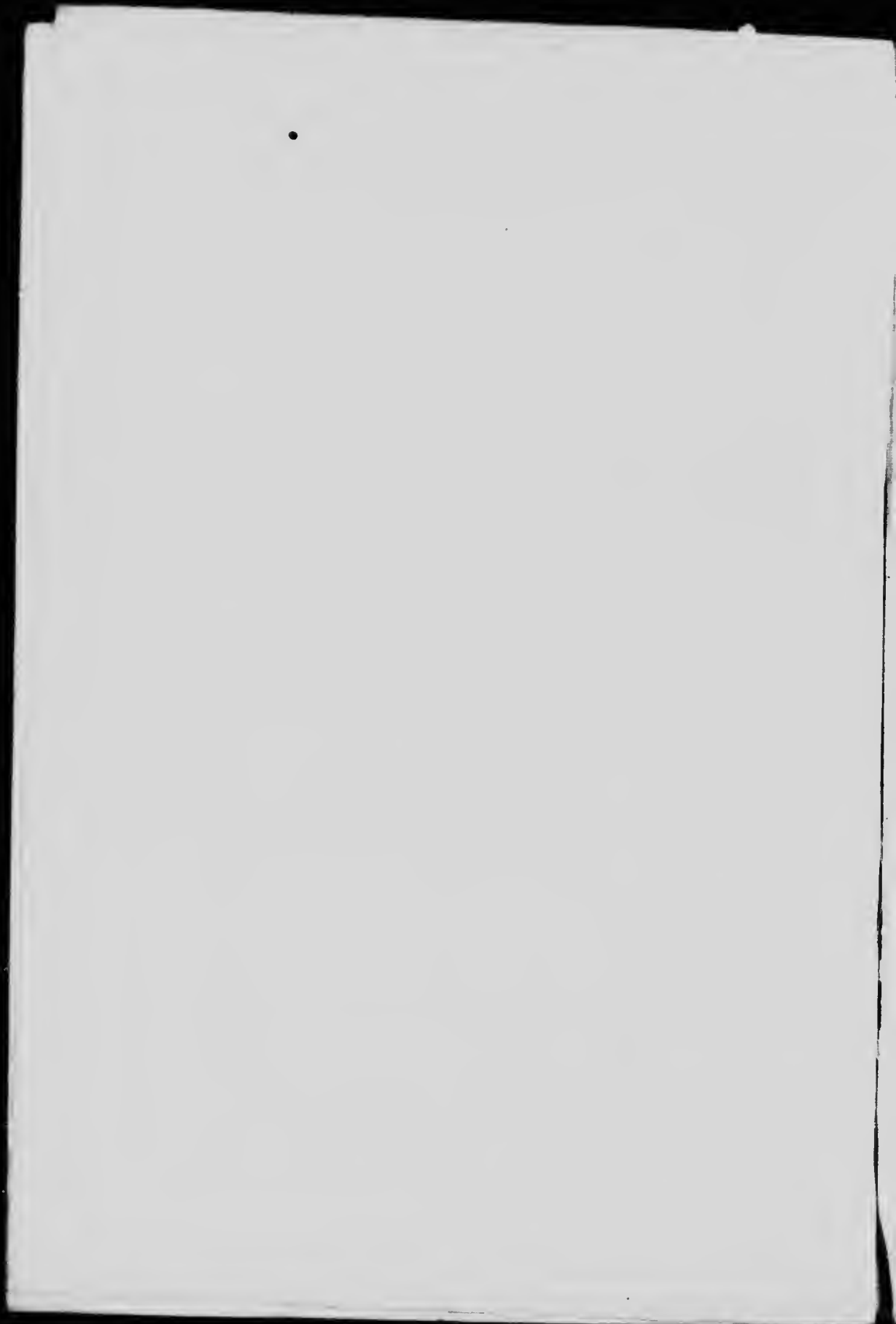
But first, the actual average values of the dike over long distances must be ascertained, and the mode of occurrence of the gold—whether evenly disseminated or unevenly distributed through various parts of the rock—must be found out. And these facts must be determined for each individual dike. Then, if those already found yield values to warrant it, the search for others should be made, as already indicated.

A copper deposit, lately discovered a few miles east of Lake Megantic, was visited with a view to ascertaining whether it showed any relation to the occurrences of gold or not. It is in the sixth range of Ditchfield, on the farm of Alphonse Roy. A shaft has been sunk some twenty-five feet in depth, in a quartzose chloritic slate. The copper occurs as chalcopyrite, and is mixed with pyrite and gangue, in a vein between one or two feet wide. It evidently bears no relation to the occurrence of gold at Marsboro.

LICENCES.

Prospecting licences giving an exclusive right to examine the property, with the privilege of securing mining licences, or of buying mining rights in the province of Quebec, may be obtained from the Honourable the Minister of Mines, Quebec. These licences are granted for three months, and are renewable at the discretion of the Minister. The licence fee in surveyed private lands, as in Marston, is \$2.00 per 100 acres, or fraction thereof; a similar fee being required with each renewal. On November 24, 1907, the following lots were held under prospecting licences, in the township of Marston:—

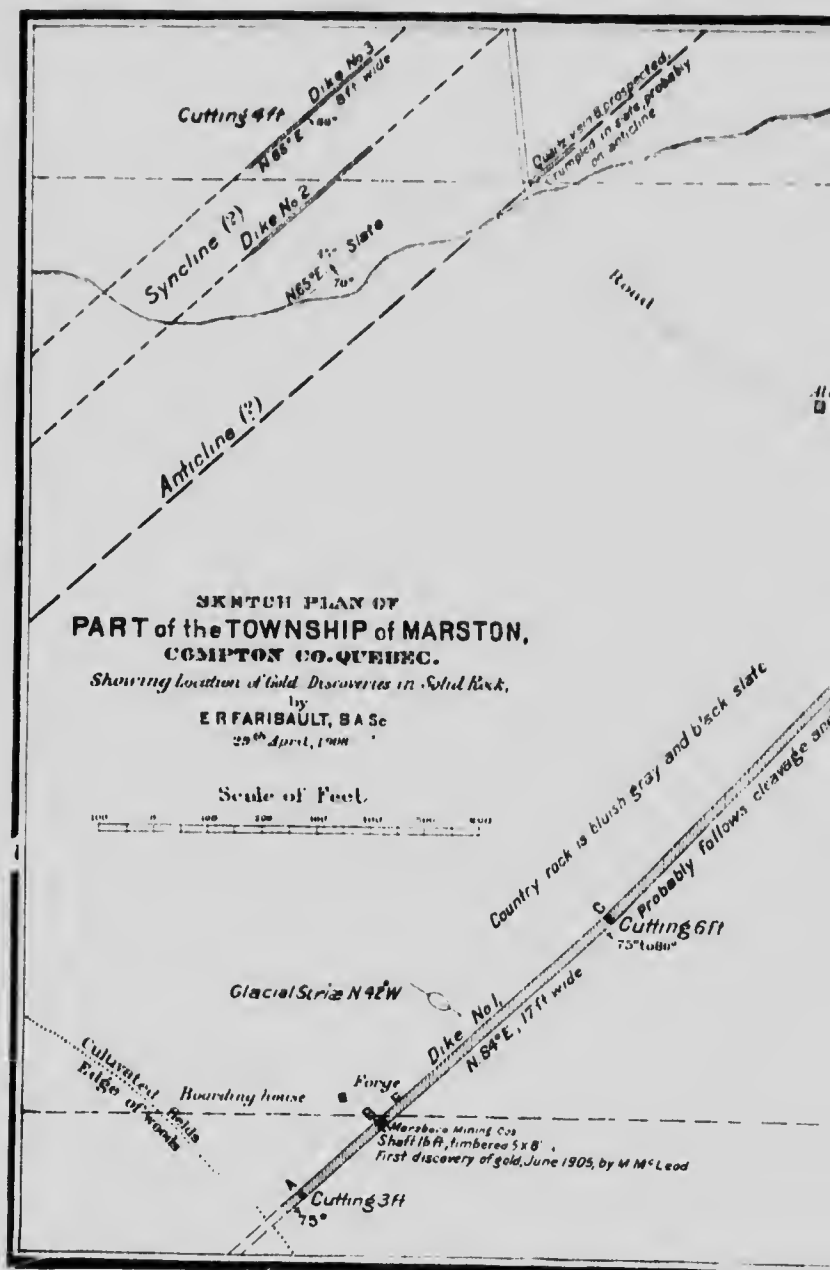
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"	II,	"	19.
"	III,	"	18-22, inclusive.
"	IV,	"	18-22 " and 28.
"	V,	"	16-22 "
"	VI,	"	13-20 "
"	VII,	"	12-21 "
"	VIII,	"	10-14 "
"	IX,	"	7-14 "
"	X,	"	7-14 "
"	XI,	"	4-11 " and 4.
"	XII,	"	6-10 "



13C

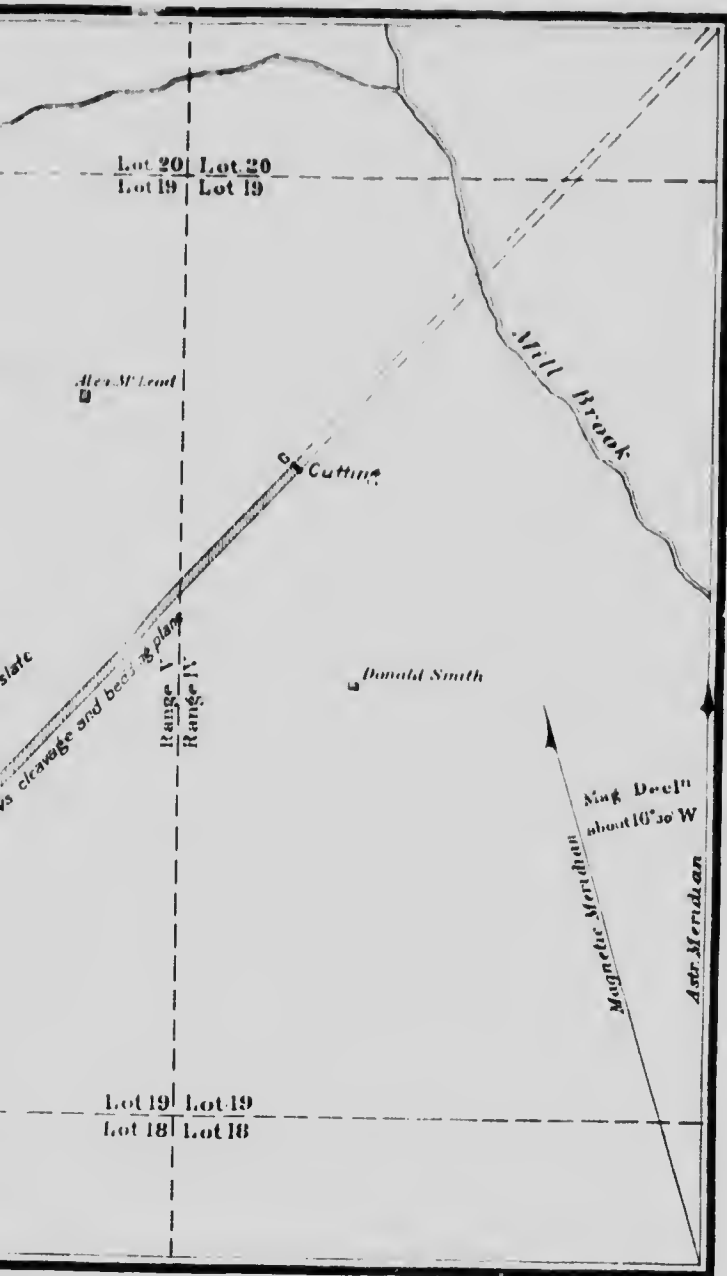


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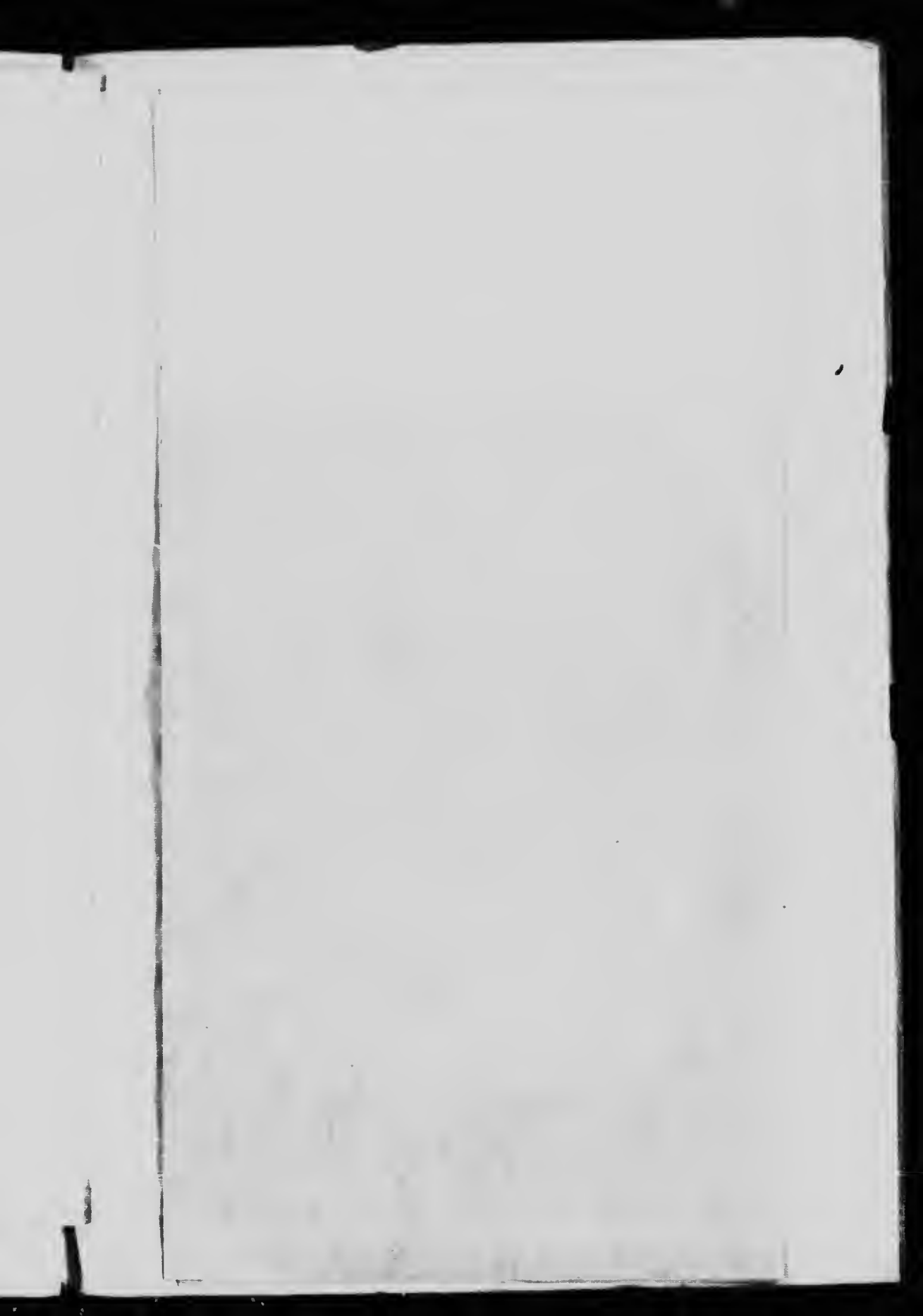


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Index to colours and signs

D. Cambro Silurian

C. Cambrian

AB. Pre Cambrian

Gr. Granite

Di. Diorite

* Gold

○ Copper

— Gold bearing dikes

▭ Areas under gold prospecting licenses

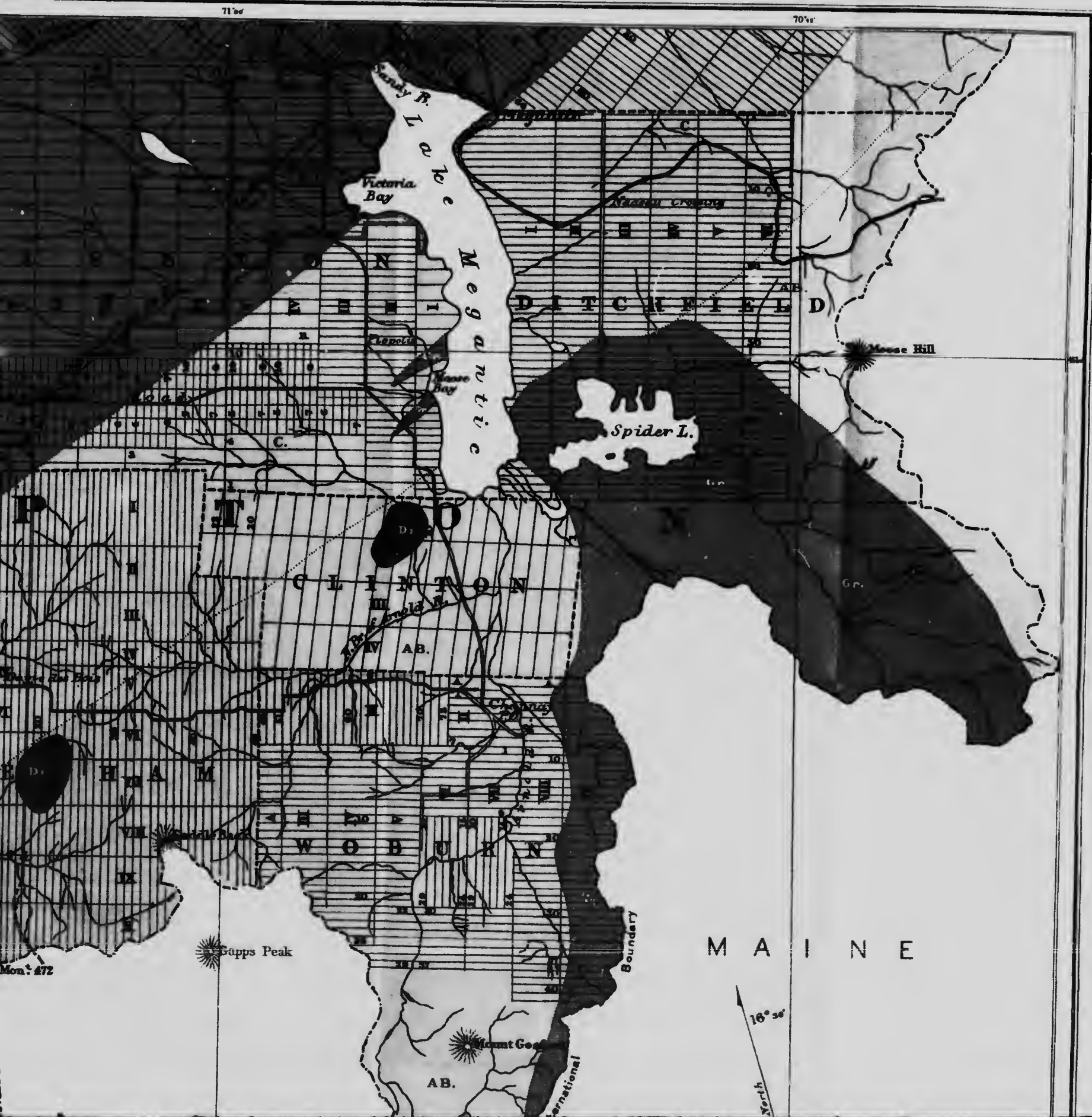


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