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Intelligence Report
of the

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2 ~~Eng. B. H. A.~~
3 ~~Canada~~
4

General War Resources
of
The Dominion of Canada.

By
Charles C. Rogers
Lieutenant, U.S. Navy,
Intelligence Officer.
U.S. Steamer Galena.

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C. H. Davis

Chief Intelligence Officer.

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Nation - England (Colonies) - Canada.
U.S.S. Galena - Comdr. C. M. Chester, Comdg.
August, 1887. Authority - Lieut. Chas. C. Rogers, U.S.N.

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Review of Elements of Strength and Weakness of Canada-
Capability of the United States to attack.

The frontier of Canada is assailable at all points. In some places, it is constituted by a line only visible on a map, in others it is a large lake, in others a river. Coincident with it runs the frontier of the United States.

The weakness of Canada in a war with this country lies in its long frontier, out of all proportion to its population and resources. Its defence must depend upon the maintenance of 4,000 miles of communication running parallel to an northern boundary. This line connects provinces more or less isolated by physical barriers.

A great extent of uninhabitable mountain region stretches from Labrador on the east along the Lower St. Lawrence and Ottawa to Lake Huron and thence to the head of Lake Superior. The Rocky Mountains and the Cascade or Coast Range with their intermediate ranges reduce the habitable area of British Columbia to a few valleys along the coast of Puget Sound. Between these principal ranges lies the fine agricultural territory of Manitoba, in contact with the equally fertile and better populated regions of Minnesota and Dakota, but separated by a barren region of rocks and hills from the rich province of Ontario. The eastern mountain system, besides narrowing the available territories along the St. Lawrence, also forms a barrier between Quebec and the Maritime Provinces.

The New Brunswick Railway seems to be arrested by this obstacle near the north-east angle of the Maine frontier, but it is skirted by the Intercolonial Railway, which follows the south bank of the St. Lawrence. This line is extended across the continent by the Canadian Pacific Railway. These railway lines extend for nearly 2000 miles parallel to the general course of the St. Lawrence and the Great Lakes. West of Lake Superior, they compete only with the railway system of the United States. The fact that navigation is interrupted by ice during 5 months of the year furnishes a partial explanation of the effort made to complete these connections. The Intercolonial Railway affords strategical advantages in any war: but the western portion of the Canadian Pacific will probably be a source of weakness in war with the United States, though as a naval base in the Pacific it might become valuable in an attack

To this the permanent militia force of the Dominion, limited by law to 750 men, and these results as regular force less than one-tenth as strong as the army of the United States.

The active militia of Canada comprises about 37,000 men; the organized militia force of the United States is about 3 times as strong.

The discipline in each case is about the same, but the militia of the United States are better equipped and drilled.

The reserve militia of Canada nominally amounts to 655,000 men, about 15 per cent of the total population. This number is obtained by the enrollment of all men of given age in various classes. A similar enrollment would give the United States twelve times as many men, or nearly 8,000,000 in all. A more significant figure can be obtained by taking the returns showed the number of volunteers raised in each state for active service during the war of the rebellion. Reduced to a three years' standard this gives an aggregate of 2,320, 272. Increasing this by a fair proportion for the Southern States not represented in the national army at that time and allowing for the increased population, it is evident that our available reserve is limited only by the difficulty of arming and equipping such large bodies of men and by the strategical openings for their distribution and employment.

The chief and most effective force that could be employed against the cities of our northern frontier would be the British Navy, which could be sent through the St. Lawrence Canal into the Great Lakes. The number of vessels fit for this navigation is considerable. Facilities for lightering coal, stores, or guns through the Canal is at hand and in daily use. At present, only 9 feet of water can be carried through all the Canals, but improvements now in slow progress may result eventually in 14 feet of water for all locks: this would increase the number of vessels capable of navigating the lakes. Though some of the gunboats in lists compare so far are of low speed and indifferent armament, yet the new types of torpedo cruisers and torpedo-catchers will soon replace the more obsolete vessels to a large extent.

England has not sufficient guns in readiness to supply a large number of lake steamers with efficient armaments. In this respect, she is only slightly in advance of the United States, while our tonnage and ship building resources on Lakes Erie, Huron, Michigan, and Superior are greater than those of Canada. The Clyde shipyards are ready to supply any demand for iron or steel steamers for use in Canadian waters.

Should the St. Lawrence Canals remain in Canadian hands, they would have a great advantage in the light-draught vessels of the British flag available for attacking our ports at short notice. The wealthiest cities along the Lakes lie directly upon the shore and cannot be protected from bombardment by any batteries or land forces. Our navy has neither gunboats nor torpedo-boats. Were such vessels built they could not be transferred to the lakes from our sea-board. The admission of a British naval force to Lake Erie by the Welland Canal would compel the fortification of the Detroit and St. Clair Rivers, the Straits of Mackinac and the Sault Ste. Marie and the maintenance of large garrisons at each of these points.

It should be remembered that during the winter months, the St. Lawrence is closed to navigation. During the same season, land operations are difficult.

Canada is dependent upon England, to a large extent, for manufactured goods. Iron ore is produced, but most of it is shipped to the United States. Manufactures of railway material and agricultural implements have been stimulated by tariff and other causes.

No manufactory of small arms exists in Canada. There is a cartridge factory at Quebec, and a powder factory at Hamilton: but Canada is still left far inferior to the United States, which has abundant resources for the supply of arms and ammunition to troops.

The defenses of Canada are nearly all of obsolete type, armed with smooth-bore, converted M. L. Palliser rifles, and Armstrong guns of an early type. The defenses of Halifax alone constitutes an exception. No reserve of modern guns appears to exist and England is notably

deficient in high-powered breech loaders for the armament of ships and forts in the colonies.

The ship-building industry of Canada is dependent upon the timber-supply. Like that of Maine, it is engaged chiefly in turning out wooden sailing-ships and schooners, and is hence an industry of little importance in war. Iron ship-building has some importance on the Great Lakes, principally at Buffalo, Cleveland, and Detroit.

Both the United States and Canada have abundant supplies of provisions and stores of all kinds. The railway system provides for the distribution of supplies and is adapted to military requirements. In neither case, is a deficiency of railway stock probable.

In the United States are parallel, competing lines between the Atlantic and Pacific. No attack from the frontier or the coast could interrupt all of them or prevent the transfer of trains from one to the other by cross-lines. The Canadian provinces, however, are linked by single lines, having relied upon American railways to carry their produce to market. This has been the case especially during the winter season, when the St. Lawrence is closed by ice.

The object of an attack on Canada would include the protection of our lake ports by severing the line of communication afforded by the St. Lawrence and Welland Canals. Should war break out during winter, the primary attack would be directed against the land communications, especially the Intercolonial Railway between Quebec and Halifax. The attack on railways parallel to the frontier would be predatory at the outbreak of war and until our forces were mobilized for active operations.

The attack of our forces would be directed so as to prevent defensive operations and to sever the Dominion as a whole from communication with England and the provinces from each other. The British attack on the other hand would be predatory to a large extent. Unprotected cities would be bombarded, private property and public buildings destroyed or threatened for purposes of ransom. Such is the nature of naval attack against rich but poorly armed nations.

The damage that could be done by a few gunboats ~~to~~ a city directly on the lake shore

is evident. Unaimed shots might be fatally destructive and the incendiary effect of shells would equal that of their explosion. The industries that have enriched these cities and the architecture of a rapid growth are peculiarly liable to destruction. Modern high-powered guns of six or eight inches calibre would be highly effective at ranges of 6000 to 8000 yards, while few gunners would claim to hit a moving object at such ranges.

The frontier of the Province of Quebec is contiguous to the territory of the United States for a distance of about 450 miles, that is to say, 167 miles of imaginary boundary along the 45th parallel of latitude southward of Montreal and Quebec, running from St. Regis, on the eastern end of Lake St. Francis (an expansion of the St. Lawrence) to the Connecticut River, in the township of Steeple, abutting on the State of New Hampshire. Thence in an irregular line the boundary of the State of Maine follows the high ground which forms the water-shed between the Kennebec River, in the United States, and the Chaudière, a tributary of the St. Lawrence, running northeast, which brings the territory of the State of Maine to within 25 miles of the St. Lawrence, opposite Rivière-du-Loup. At this point, the Intercolonial Railway is close to the frontier, which from this point runs south-east until it meets Dominion territory in New Brunswick. The disadvantage to the Canadians of having a wedge of our territory thrust into their own is not so great as might appear at first thought, the country being rugged, covered with forest, and thinly populated; there are no natural commercial lines, nor any railroads running through it to the north, the water-shed north of the St. John's River being ^{close to the} St. Lawrence prevents the formation of any long or navigable tributaries to the St. Lawrence: there is, therefore, no natural channel for intercommunication or commerce from the northern angle of the State of Maine into Canada. No military lines of operation always follow natural channels, no invasion of Canada has ever been attempted from this point, the nearest to it being that of General Arnold, who followed the line of the Kennebec and Chaudière Rivers. On the other hand,

if the Intercolonial Railway should remain intact and uncaptured and offensive operations from Canada should take place in the direction of the Penobscot Valley or to seize the triple railroad terminus of Woodstock, Richmond and Haultain, leading to St. John, N.B., their re-entering frontier would form an advantageous base of operations to the Canadians backed by Quebec and the St. Lawrence and the Intercolonial Railway.

The Grand Trunk Railway and others on the south shore are now supplemented by railways on the north shore of the St. Lawrence and the lakes, with their usual telegraphic lines, the whole forming a series of communications which would enable the Canadian troops to act upon what are practically interior lines and so concentrate readily upon important strategic points.

Canada suffers great disadvantage in the proximity of Montreal, her chief city, to the frontier. It is upon an exposed site and totally undefended. Canada would be cut in two by the capture of Montreal, which is the head of the sea navigation of the St. Lawrence and the focus of all communications by land and water between Upper and Lower Canada and the Maritime provinces; the defense of the country would be seriously hampered; Ontario being cut off from Quebec and the maritime provinces, as well as from any aid from Great Britain. An enemy holding Montreal, with its network of communications converging upon it from his basis of supply, could maintain himself in the island on which the city is built, check any force coming from Ontario, hold the communications to Ottawa, the capital of the country, while he proceeded to lay siege to Quebec. The St. Lawrence itself, with its tributary of the Richelieu Canal and the roads and railroads following the line of country in a north-eastern direction, would become fresh lines of communication and supply to an enemy operating against Quebec.

Between Toronto and Kingston are Port Hope, Cobourg, Picton, Deseronto, and Ernestown on the line of railway, all of which present facilities for the landing of an enemy: at any one of these points a hostile occupation would cut the communications with the west at once; and in this respect the position of the Grand Trunk Railway

Ontario

so close to the shore of the Lake is a disadvantage in war. Here too, our side of the Lake has the advantage that the main line of railway - the New York Central - runs many miles south of the Lake, cross lines connecting it with the principal ports; and though another line runs close to the shore higher up, yet there is no position on our side that has to fear in the same way its attack of such a force as could be collected at Kingston.

The frontier of Canada is as available at all points, and the best guarantee against invasion would be complete naval supremacy on the Lakes and rivers, because they constitute the most accessible roads for the invaders and the most serviceable barriers for the defenders, if they have the proper means of defence. To give any chance of successful resistance some equality of naval force on the part of the invaded is almost indispensable. By the principle which forbids a dependency, equipping ships of war in time of peace, Canada can not provide this naval force. Besides, she has not the means now. Great Britain has a powerful fleet, but she is 3000 miles from Lake Ontario, and only criminal carelessness or inactivity on our part will enable her gunboats to pass above Lake St. Louis or the Beauharnois Canal. Although our navy is far inferior, yet we are close at hand, and have every advantage for building vessels suitable for warlike operations in inland waters and canals. Lake Michigan with the enormous resources of Chicago is entirely our own and the possession of such a base is an advantage which is by no means counterbalanced by the English position on Lake Huron. And for this reason too, it is not probable that England would attempt to cope with us on all the Lakes: this same reason, added to the position of her more important ports and resources, renders it a certainty that she will make every attempt to concentrate her strength on Lake Ontario and in the St. Lawrence.

Plan of Operations proposed.

The physical features of Canada, the distribution of her population, and the situation of her most important cities and strategical points, suggest three invading armies from the United States to secure the conquest of the Dominion. One of these armies operating by way of chain would cut the Intercolonial Rail way and capture Halifax, disabling Nova Scotia and New Brunswick; the second going by way of Lake Champlain would capture Montreal, thus dividing Canada into two parts and preventing the eastern and the western provinces from lending assistance to each other or combining in an invasion of the United States; after which it would proceed against Quebec and Ottawa; the third would invade Canada by way of the Niagara River, capturing Hamilton and Toronto and reducing the western provinces to submission. Presuming that these lines of action should be followed, it naturally ensues that Canada must concentrate her armies for defense as follows: in the east, at Halifax and thence westward to Fredericton, N.B.; in the west along the line of the Welland Canal and Niagara River and about Hamilton and Toronto; and in the central portion at Montreal and thence to the United States boundary by way of St. John's, Quebec.

With the present disparity between the navies of the United States and of England, our own vessels will be kept at home as a defense for our own ports. Our policy as regards attack will be defensive rather than offensive. And should our Navy become sufficiently strong or victorious to attack the Canadian ports, the greatest advantage will be gained in the Canadian seaboard by the attack and reduction of Halifax and of St. John's, N.B. It is not probable that at the beginning of war, our own squadrons will be able to attack this City: with most of the vessels far from home, and with a small force, it will require a longer time to mobilize them than it will for England to despatch a strong squadron to defend the Canadian coast-line. Besides, the period that precedes the declaration of war between two such powers will enable the Government to send such force in time to be present at the outbreak of hostilities. It will be remembered that Halifax during the revolutionary war was one of the chief stations whence the Royal Forces were

directed upon the American Colonies; and although railways modify its importance in this regard now, yet in winter it would serve this purpose especially, to-day. The presence of the naval station at Halifax still further increases the importance of reducing Nova Scotia to terms; and though operations on a large scale at sea might become impracticable as against the superior British fleet, yet the ports of Maine might be used as points of rendez-vous for occasional attacks against the ports of New Brunswick and of Nova Scotia.

Whatever be the result of our naval operations, the importance of Nova Scotia may be much impaired by the capture of Chignecto Isthmus, which between Sackville, at the head of Chignecto Bay, and the Bay Verte is only 12 miles wide. But this must be the work of the army, or else of a combined attack of the army and fleet. The most favorable time would be at the outbreak of war. An army moving by way of Eastport, Maine, utilizing railways as much as possible, could capture St. John, N.B., Fredericton, and adjacent points and advance to the Chignecto Isthmus. The distance from Eastport to Sackville is about 120 miles. The force should be sufficiently strong to keep open the base of supplies and communications with Eastport, while occupying the Isthmus, and additional value would be given it, if while doing this, detachments were pushed to the westward along the St. John River and the railway to Dalhousie, destroying communications, impoverishing the country, destroying defenses, and flanking the enemy in conjunction with the frontal advance of our troops from New York, Vermont and other points along the frontier. The chief assistance that could be rendered by naval vessels would lie in the reduction of the sea-board towns of New Brunswick and of Western Nova Scotia and in keeping the Bay of Fundy out of the hands of a British fleet. With the Isthmus in possession of our forces, the communications of Halifax with the West by land would be stopped and hence all transportation of troops, supplies, or other material over the Intercolonial Railway. This would be a serious blow to the enemy especially in winter; and it would serve also to cripple Nova Scotia by cutting off the greater part of its food supply.

Besides, this position can be reinforced and strengthened and the invasion of Nova Scotia can be continued. The most difficult as well as the most important point of capture will be Halifax, but the reduction of the remainder of Nova Scotia will be comparatively easy and by holding Chignecto Isthmus, the importance of Halifax to the enemy can be reduced to the greatest minimum short of actual capture. If the army and fleet sent against Nova Scotia are successful, that province and New Brunswick will be powerless to assist the remainder of Canada and with our means of reinforcement, it would be impossible for England to throw an army into Cape Breton Island or any point in Nova Scotia that could hope to cope with our forces. To hold the south bank of the St. Lawrence becomes then an easy matter for an army to the westward, operating from Lake Champlain. The military authorities of Canada do not regard Halifax as, in any sense, a safe base for operating in the inland defense of Canada, however valuable in other senses.

To capture Halifax, then, or to hold the Chignecto Isthmus shuts out all chance of assistance from Nova Scotia or via the Intercolonial Railway; while at the same time an army advancing by way of Lake Champlain and capturing St. John's (Quebec) and Montreal will divide Canada into two parts and cut off all assistance from Ontario or Western Canada. Besides this, an attacking force should be sent towards the north-east against Quebec from St. John's; any number of troops can be poured readily into the Province of Quebec by way of the Hudson River and Lake Champlain, or by way of Burlington and St. Albans, Vermont, with the view of concentrating at Farnham (Quebec), and advancing towards the City of Quebec; while at the same time the great network of railways in New England is especially favorable for sending large quantities of troops and stores against Quebec. The two branches of the Grand Trunk Railway to Portland and down the Connecticut River to New London, can be used for concentrating troops at Shubrooke or Waterloo - preferably the latter since St. John's and Farnham are fine strategical points and probable sites for massing our own forces. The province of Quebec south of the St. Lawrence becomes by this a large theatre of operations. As the army advances, it should destroy the agricultural resources, and by means of the railways of New

England should keep itself supplied with needed stores. Besides, the country is well-valued by numerous streams, and lakes, and advantage should be taken of the network of railways, concentrating at Sherbrooke and Richmond and of the two main lines leading to Quebec itself for purposes of transportation. It is also possible that with Montreal in our possession, another army advancing to the northward of the St. Lawrence could either attack Quebec or threaten it as deemed most advisable; for either would be attended with unusual risks if British gunboats held the river and the Quebec army were very strong.

The capture of Montreal means also the possession of the Lachine Canal and the impossibility of the enemy's gunboats passing into the Lakes. It is not probable that we shall be able to hold the Saint Lawrence with a fleet. Though we may be able to hold the southern bank of the St. Lawrence with an army, the enemy's gunboats would be able to reach Quebec and could probably do all in their power to embarrass our forces by patrolling the St. Lawrence between Quebec and the nearest point toward Montreal that they can reach.

The transportation of torpedo boats is a feature of war that is yet undeveloped; but if while holding the southern bank, our forces should be unable to block the river with torpedoes or other obstructions, every attempt should be made to drive the enemy's vessels out of the river or to annoy them as much as possible by torpedo boats. With Montreal in our possession, torpedo boats should be shipped over the several lines of railway leading from the United States to that city and started down the River towards Quebec from that point. They can be shipped also by way of St. John's Farnham, Waterloo, and Sherbrooke to Sorel or to Doucets landing, both of which places are on the St. Lawrence, and are connected by branch lines with the Grand Trunk Railway. Montreal or Sorel can be used as places of repair; if these boats are lost, the damage to us will be little, and they may be able to drive the British vessels below Quebec, may sink some of them, and in any event would annoy the enemy no little and would seriously hamper the movement of his vessels. Such torpedo boats should be small and swift and the greater the number, the better. Every attempt

? How
could
they
be
used?

should be made to place torpedoes in the river above Quebec, or else to obstruct the channel, which is shallow.

To allow Montreal to remain in the hands of the enemy is to give them the power to concentrate there not only all the forces of Canada but also of England, arriving through Quebec. Not only troops but supplies and stores of all kinds could be massed there and an army strengthened in every way. Our railway communications on the west side of Lake Champlain and to the eastward of it in New England give us great facilities for the transport of an army to the frontier. Albany should serve as one point of the base of operations.

The Beauharnois Canal on the south shore of the St. Lawrence should be rendered useless at the commencement of hostilities by our forces. The St. Lawrence between Kingston and Montreal is of special value to us in war and should be held at the earliest moment possible. While the capture of Kingston should take place as soon after hostilities begin as possible and the St. Lawrence from the Lake to Montreal held with even Lake or river steamers fitted out at Rochester, Oswego, or Ogdensburg till gun vessels can be provided, yet an attacking army should not advance upon Montreal from the westward if it can be avoided; because such a course would only roll up the defense along the lines of communication toward the point of support and base of supply instead of cutting it in two by an attack on the center. The advance therefore should be from Albany or by way of Lake Champlain. The capture of Montreal would give us a base in the enemy's territory from which his most important strongholds, Quebec and Ottawa, can be attacked. Operations can be directed to the north-eastward against Quebec, and to the northwest against Ottawa, taking advantage as well of the Ottawa River and its valley.

It is hardly to be expected that at this stage of war, any vessels of our fleet would engage in the capture of Montreal. Should, however, the attack be made from the westward, the Lake or river steamers or gunboats fitted out on the Lakes should descend the St. Lawrence and bombard Montreal.

In the advance from the South, an ad.

rancing army would meet with resistance from
 St. John's, Quebec. The site of the old redoubt
 at that point commands the railway bridge
 of the Vermont Central, the junctions from Rouse's
 Point, Waterloo, and the Passumpsic; the Richelieu
 River Canal, and the roads running north and
 south. The advance guard of observation would
 probably be found at Fort Isle-aux-choix close
 to Rouse's Point and St. Albans Railway junction.
 To prevent our forces from passing vessels down
 the Richelieu River from Lake Champlain, for the
 transport of troops, stores, and material for the
 attack on Montreal, tripredges would probably
 be placed in the river on either side of and
 flanked by the fort at Isle-aux-choix. If
 this fort were captured, the enemy in retreating
 would destroy the canal lock in the Richelieu
 River. Advanced bodies of troops at Lemayville
 and Richmond Railway junction would retire on
 Quebec, destroying the railway bridges behind them.

In Albany, we possess an admirable
 primary base of operations against Canada.
 The Hudson River is an open highway between
 Albany and New York City, and railways and
 even rivers (by way of Lake Champlain) connect
 it with the St. Lawrence, Lake Ontario, and
 our great centres of resource and industry.
 Albany is especially suited as a base against
 Montreal and Quebec. Rouse's Point, at the
 upper extremity of Lake Champlain, would
 serve as an immediate base for the collec-
 tion of supplies and the concentration of an
 army, whilst Albany would become the
 great depot for the war. The New York Central
 Railway with Utica, Syracuse, and Rochester,
 would be the great base to the westward for our
 army operating along the St. Lawrence and
 Lake Ontario against the Canals, Prescott,
 and Kingston. Strategically Rouse's Point is
 the key of Lake Champlain. It commands every
 vessel passing up or down the lake between New
 York and Canada. The point projects into the
 narrowest passage by which the waters of the
 lake pass into the Richelieu. Any vessel
 passing in or out of the lake must come
 within easy range of the guns of a fort erected
 on this point; any vessel approaching the
 fort, head on, would be exposed for several miles
 to a raking fire from the battery, before she

could bring her broadside to bear upon the fort at all.

Ottawa may be regarded as the apex of a triangle whose two other corners are Montreal and Kingston. Its base becomes then the St. Lawrence River and its other two sides are the Ottawa River and the Rideau Canal. Prescott is near the centre of the base, and its distance from Ottawa may be regarded as the altitude of the triangle. The Ottawa River is important not only on account of the facilities of transportation but of the resources of the valley in the way of food supply. The Rideau Canal affords facilities of internal communication and of transport, especially of food supply. The St. Lawrence River adds great facilities in transporting both troops and supplies and is the highway by which England may throw gunboats into the Lakes for the destruction of our Lake ports. Ottawa as the seat of government for all of Canada, as a city of nearly 40,000 people as a centre of wealth, trade, political, and military influence, is of great strategical importance and its capture would produce not only a great moral effect on the enemy's troops but would add largely to the military strength of our own position. Prescott is the focus, in a sense, of the great network of railways lying between the St. Lawrence and Ottawa. It becomes thereby the key of the approach to Ottawa from the United States and on account of Fort Wellington has a most important bearing on the retention of the St. Lawrence by England as a highway for her gunboats.

The natural tendency of the western army of invasion advancing by way of Toronto will be to proceed towards Ottawa; and one wing of the army that reduces Montreal will find its natural field of operations in the direction of Ottawa. The triangle then becomes one of the chief theatres of battle. It skirts the boundary of the United States from Kingston by way of Prescott to Cornwall; its corner, Montreal, is only 30 miles from the boundary line and its apex, Ottawa, only 47 miles; its other corner, Kingston, is not only near the boundary but must become a naval stronghold as well. Its base, the St. Lawrence, contains an important system of Canals and within its area lie the Grand Trunk and the Canadian Pacific Railways which with their con-

nections add greatly to the strategic importance of both Montreal and Ottawa, and also of Prescott. The St. Lawrence River from Kingston to Montreal must become the great line of defense or of invasion either for the United States or Canada, as the advantage is with the one or the other. And while Montreal and the Welland Canal route must be the primary points of defense against invasion, yet in order to protect Ottawa and the great railways in the limits of its triangle and to keep open the St. Lawrence and its line of canals, an army must guard the line from Kingston to Cornwall, leaving to the Montreal army to secure the rest of the base. The principal part of this Canadian army must be stationed in and around Prescott and Brockville.

The English gunboat should ever be able to pass Montreal and especially to enter Lake Ontario. Ogdensburg is a railway centre, directly opposite Prescott. One of the first steps of a force at Ogdensburg should be to plant torpedoes and to sink obstructions between Chimney Island and the point of land opposite, $3\frac{3}{4}$ miles below Ogdensburg. The channel here is from 20 to 30 feet deep and 800 feet wide and is on the American side of the River. Ships must through it to reach Prescott or the Lakes. The channel on the Canadian side is 9 feet deep and only river boats can pass through it. Every attempt should be made to destroy Galop Canal which might be accomplished, if direct attack fails, by a few guns from the banks on the American side of the River. Torpedo boats, shipped by rail to Ogdensburg, could be launched near the mouth of the Oswegatchie River and used against the enemy's gunboats on the river above or below Prescott.

At present the waterways of the Canadian frontier are much exposed. While Great Britain retains her supremacy, the St. Lawrence is open during the summer and can be kept free by armed vessels as far up as Montreal. The canals along the St. Lawrence are of vital importance to Canada: but it is not probable that she will build forts along them and it is not possible to defend a canal by simply guarding the locks. If Canadian troops secure the St. Lawrence, English gunboats will ascend the River into Lake Ontario and we can not hope to maintain supremacy.

there and scarcely to defend our important ports like Oswego and Rochester. The Beauharnois Canal has a very unfortunate position from a military standpoint; and the Morrisburg Canal, like the Galop, can be shelled and destroyed from our own shore. Another important point affecting these Canals is that the majority of gunboats draw more than 9 feet of water, and only the Lachine Canal (12 feet deep) will permit the passage of a vessel of greater draft. England's resources, even if she were to hold the river, are limited in consequence. Lighter and smaller torpedo boats could pass the Canals but the larger ones would not enter the locks after passing Lachine.

As a chain of great frontier fortresses can not be established or maintained it would be the policy of the Canadian forces to cover the approaches to the vulnerable points, so that Ottawa, Montreal, and Quebec would be defended by forces posted in earthworks, to which must be added the garrisons of the Lewis fort, at the latter point and the Squadron in the river, as far as Montreal at least, where gunboats in Lake St. Louis could support a tête de pont at Naudreuil; and these lines of defences would further be covered by entrenched camps at Prescott and at Richmond or Belleville, west of Kingston, and by the fortifications of Kingston with its garrison and the supporting Squadron, whose headquarters would be at that point. (See Register No. 7455 for plan of attack of Kingston: also Chapter XI.)

For the plans of operations against the Welland Canal and frontier along Niagara River, see my Intelligence Report on the Welland and other Canals of the Dominion of Canada: Register No. 7.

An inspection of the map will show the Welland Canal running from Port Maitland and Port Colborne, on Lake Erie, to Port Dufferin on Lake Ontario. The Command of this Canal would be of the greatest importance to the Canadians as a part of their own territory and especially as allowing gunboats to pass between the Lakes. On the contrary, it would be equally valuable to our army of invasion as establishing a water communication of like purport inside the Falls of Niagara: but it would be difficult to obtain such Command so as to prevent the destruction of the Canal by the British forces and render it useless to our army or navy. The line of it will be defended and British garrisons will be stationed at Fort Erie, Chippewa, Stamford, and Niagara to resist an invading army.

At Port Erie is an insignificant work; but with that exception the line of the Welland Canal may be considered as open and defenceless but not as indefensible.

The Niagara River is not broad enough to prevent hostilities between the banks, and no practical advantage would be gained in a campaign by any operation which did not settle the fate of the Welland Canal. The locks will permit vessels 270 feet long with 45 feet beam, and drawing $13\frac{1}{2}$ feet of water, to pass between Lakes Erie and Ontario; and it would be important to the Canadians to prevent our forces from getting possession of this Canal. Nor would it suffice to the Canadians to give up resistance and destroy the Canal by injuring a lock and the like, for such an act would militate against their own line of communication, which is most important to them who are not only inferior in possible military forces but also in transport power on the Lakes. To defend this Canal, it would be necessary to establish a well-defined system of field works and permanent fortifications to cover the termini of the Canal, the feeder from Port Maitland, and the approach to St. Catharines. At present the defensive means of Port Erie and Niagara are inferior and quite incapable of resisting modern artillery. Hamilton's situation in a great agricultural region will make it a great depot of provisions and supplies for the army at the frontier or defending the Canal. It would become also a rendezvous for troops. The natural base for the defense of the Canal would extend from Hamilton by way of Brantford to Simcoe. From this base only 38 miles long, troops and supplies of all kinds can be shipped to the Canal by the four lines of railway between Hamilton and Simcoe, on the west, and Niagara River on the east. The industrial and manufacturing resources of Hamilton and its vicinity will give power of increasing its facilities for transport in the locomotives, cars, and wheeled vehicles that can be made there.

With energy and despatch, a squadron fitted out at Oswego could reach Hamilton and Port

and destroy them without difficulty very soon after the opening of hostilities. But as long as Toronto remains in the hands of the English it will be the key to Central Ontario, to all the populous, well cultivated, and wealthy district between Toronto and Lake Simcoe on the west and Kingston and Ottawa on the east.

An army drawn up between Toronto and Lake Simcoe on the north, holding the railways and in a strongly entrenched position would render the conquest of Central Ontario difficult to a victorious invading army from Niagara up to Toronto itself: It would furthermore secure those important railway communications of Canada, which must add in the greatest degree to the power of resistance until Montreal is captured and they are severed.

With the resources of Chicago, it would be difficult for the English to establish a naval force on Lake Huron; and with Buffalo, Erie, Cleveland, Sandusky, Toledo, and Detroit on our side, it should be impossible for them to do so on Lake Erie. A naval descent on Port Colborne, the Lake Erie terminus of the Welland Canal, and on Ports Dover and Stanley would deprive the Canadians of their chief ports on Lake Erie; and another on Goderich would destroy the chief stronghold on Lake Huron. Our armies too should invade Canada from Lockport and Buffalo by way of the Niagara River: while the many railways to Detroit and Port Huron would enable another force to attack the western Canadian settlements between Lakes Huron and Erie, capture Sarnia and Chatham, and advance on London, a city of 27,000 people, and a very important point strategically in account of its central position between the two lakes and the several railways centering there. Our army from Niagara would meet a strong resistance on the line of the Welland Canal, especially between Meriton, Fort Hill, and St. Catharines; and the enemy, if forced to retreat, would probably destroy the Canal and concentrate on Brantford and Hamilton; and if dislodged from there, they would retreat towards Guelph.

If in our naval descent on Goderich, a force were landed there, its objective point

Upper Sand
has a
ship plant
H

Field
Camp
at
Brantford
near
Guelph

would be Stratford. This place and London, being railway centres would be held as long as possible; and when captured, Guelph would serve also as a point of concentration for troops falling back from those places. Toronto would become the natural point of concentration for troops retreating from Guelph or Hamilton. For plans of capture of Toronto, see Chapter XI.

Very respectfully,
Charles C. Rogers
Lieutenant, uschavy,
Intelligence Officer.

Approved & Forwarded
W. H. H. H. H.
"Andy Andy H. H. H."