

PROVINCE OF QUEBEC

FOREST INSECT SURVEY

RÉNE MARTINEAU AND RENÉ BÉRIQUE

Forest Biology Laboratory, Forest Zoology Unit, Quebec City, Que.

INTRODUCTION

In 1954, the Forest Insect Survey was conducted through the co-operation of the Provincial Bureau of Forest Entomology and the Forest Biology Laboratory. The 1954 growing season was characterized by relatively low spring temperatures and an unusual amount of rainfall throughout the summer. Such conditions were unfavorable for fieldwork.

Collections recorded by the Forest Insect Survey totalled 6,574, an increase of 775 samples over 1953. This increase resulted from a special program of sampling jack pine, initiated at the request of woods industries. The contribution of fire rangers and general co-operators was 4,371 samples whereas the remaining 2,203 collections were made by the nine provincial forest insect rangers. The distribution of these collections, according to tree species, is given in the following synopsis:

Coniferous trees	Collections	Broad-leaved trees	Collections
Balsam fir.....	2,289	Trembling aspen.....	618
Spruce.....	1,935	Maple.....	164
Jack pine.....	940	White birch.....	161
Larch.....	74	Poplar.....	26
Pine (various).....	46	Yellow birch.....	18
White pine.....	30	Elm.....	12
Cedar.....	7	Oak.....	7
Hemlock.....	7	Mountain ash.....	4
Total.....	5,828	Total.....	1,010
	Miscellaneous.....		236
	GRAND TOTAL.....		6,574

The spruce budworm showed the highest frequency in the collections, whereas the forest tent caterpillar was less common than in 1953. The jack-pine sawfly collections were unusually abundant because of increased sampling of its host tree.

A summary of collections of the most important insects received from each region is shown in the following table.

Number of Collections of Important Insects per Region

Regions	<i>Choristoneura fumiferana</i>	<i>Malacosoma disstria</i>	<i>Neodiprion swainei</i>	<i>Diprion hercyniae</i>	<i>Lambdina fiscellaria</i>	<i>Pikonomis alaskensis</i>	<i>Hypomyz piceus</i>	<i>Dioryctria reniculella</i>	<i>Acleris varians</i>	<i>Neodiprion abietis</i>	<i>Palaeocrita vernata</i>	<i>Pristiphora erichsonii</i>	<i>Eranis tillaria</i>	<i>Coleophora laricella</i>	<i>Pristiphora geniculata</i>
Matagami.....	2	1		8	1	1			1						
Abitibi.....	9	86	22	50	6	3	10					12			
Temiskaming.....	6	79	25	47	7	15	5			1					
Ottawa.....	92	26	26	44	34	16	9	2	5	6		2	5	1	1
North Montreal.....	168	36	6	30	22	7	4	5	3	5	2	1	1	1	
St. Maurice.....	306	75	100	77	12	4	9	17	2	7		1	2		
Jacques-Cartier.....	37	4		6			5		2	1			1		
Lake St. John.....	47	35	9	20	2	7	3		3						
Saguenay.....	92	25	2	25	5	4	10	3	7	7			1	2	
Manicouagan.....	157	1		12	6	6	4	4	7	5					1
Romaine.....	2						1								
Plains of Montreal.....	11	13	1								5		4		
Plains of Three Rivers.....	10	9		2											
Plains of Quebec.....	3	1		1											
St. Francois.....	7	5	1	6		1				2	15		1		
Chaudiere.....	5	7		12	3	3				3	12		1		
Pl. and Pl. South Shore.....	34	3		18	1	2				1					1
Pl. and Pl. Rimouski Matane.....	83			4	10		5	3	1	1					
Matapedia.....	99	1		2											
Chaleur Bay.....	51			2	4		2			1			1		1
Gaspé.....	24				6										
Anticosti.....	19		2	3	2		2								
Total.....	1,264	407	194	368	122	69	69	36	35	34	34	16	17	4	4

IMPORTANT INSECTS

Spruce Budworm, *Choristoneura fumiferana* (Clem.).—The spruce budworm continued to be the most important insect pest of coniferous forests in Quebec in 1954. The situation did not change appreciably from 1953. The main infestation was again located south of the 49th parallel of latitude and east of the 75th meridian, as shown on the accompanying map.

In western Quebec, only small areas of light infestation were found. In the Abitibi Region, one patch of approximately 180 square miles of light infestation was recorded on the Bell River Watershed, about 25 miles north of Senneterre. Two other areas were reported near the boundary of the Temiskaming and Ottawa regions; one at Lake Camatose, the other at Lake Bouchette. The same conditions prevailed at the head of Gens de Terre River and around Lake Tomasine in the Ottawa Region. Farther south in this same region, a heavy infestation which had developed in the Coulonge-Est River, decreased considerably during the last season. An area of light infestation was also found on the Noire River in the vicinity of Lake Achigan.

As in 1953, one of the main centers of active infestation was located in the central portion of the Province. It covered the northeastern half of North Montreal Region and extended in a northeast direction to Lake St. John and the Saguenay River Watershed. Within this territory, the infestation varied in intensity from medium to heavy whereas the periphery was only lightly infested. Larvae were most abundant at the following points: (1) headwaters of the Kiamika, Rouge and Macaza rivers; (2) Masson Reservoir and Upper Mattawin; (3) a stretch extending from Manouane Lake through Vermillon and Bostonnais watersheds, Van Bruyssel and Lake Edward, then through Metabetchouan, Ecorces, Chicoutimi, and Cyriac watersheds to the Saguenay Region.

The only center of active infestation on the north shore of the St. Lawrence River in 1954 was the upper sections of Portneuf and Escoumains watersheds.

In the Rimouski-Matane Region, defoliation was light along the shore of the St. Lawrence and increased progressively towards the south down to the sprayed area where it varied from light to moderate.

In the Matapedia and Chaleurs Bay regions the current year's growth was heavily defoliated. A severe infestation occurred at the eastern end of the Gaspé Region; other small scattered infestations were distributed throughout the Region.

Results obtained from the egg-mass sampling carried out in late summer indicate that, if nothing unforeseen happens, the insect will again be very abundant in 1955 in the territories shown on the map as medium to heavy infestation. This is especially true for the Matapedia and Chaleurs Bay regions. Within the areas sprayed in 1954, the population levels will apparently be light or medium.

Forest Tent Caterpillar, *Malacosoma disstria* Hbn.—The forest tent caterpillar outbreak in 1954 was characterized by a marked recession. This insect which has been exceedingly abundant in the Province each year since 1951, almost entirely disappeared from many recent outbreak centers with the result that, in 1954, as indicated on the map, the areas of infestation were smaller than in 1953.

In the western regions, one center of heavy infestation remained active in 1954 in the Temiskaming Region, and two others, both of smaller size, were located in the Abitibi Region at Lamotte and Malartic lakes, and at Lake Blouin. The latter small heavy infestations were linked together by a narrow band of moderate infestation. There was also a band of moderately infested forest extending in a northern direction along the Ontario border from Ville-Marie to La Reine Township.

A large area of heavy infestation was located in the St. Maurice Region between Chapleau and DeCalonne townships in the west and extending east to Montauban, Rivière à Pierre, and the St. Raymond area. In the same region, two other moderately infested areas were reported; one was south of La Tuque and the other, much larger in size, enclosed Manouane, Kempt, and Mondonac lakes. A small area of infestation was located in the Montreal Plains Region between St. Jerome and Joliette.

The largest center of infestation was in the Eastern Townships, the St. Lawrence River marking its northern boundary. On the west, it extended to the Richelieu Watershed, and towards the south and southeast, to the United States border. The eastern limit was a line running from Lake Megantic to Levis.

Another medium to heavy infestation practically surrounded Lake St. John, and extended east along the Saguenay River to Bagotville. In this area, the most severe infestations were in the lower reaches of the Chamouchouane, Ouïatchouan, and Metabetchouan rivers, in the Lake Kenogami area, and along the Alex River. On the south shore of the St. Lawrence, a small pocket of moderate to severe infestation was located at Lake Temiscouata.

Again in 1954, the dipterous parasite *Sarcophaga aldrichi* Park. was very abundant in the St. Maurice and Lake St. John regions. Numerous larvae collected in the latter region were also found affected by a polyhedral virus disease.

The egg-mass survey conducted in the fall, suggested that there would be no further extensions of outbreaks in 1955.

Jack-pine Sawflies, *Neodiprion* spp.—The unhealthy condition of jack pine in central Quebec has attracted attention for a good many years. Until

this year, however, investigations were restricted to the inspection of limited areas at the request of forest operating companies. These reports all describe a thinning of tree crowns from the top down as a result of severe defoliation by insects, and subsequent tree mortality.

In order to obtain an overall picture of the situation, an intensive survey was initiated in 1954 with the co-operation of the limit holders. All co-operators were requested to take special collections from jack pine trees according to detailed instructions. Cocoons were sampled early in the summer and later, collections of larvae were made. The results of the 791 samples were used in the preparation of the accompanying infestation map.

The records show that there were at least three species of sawflies involved; *Neodiprion americanus banksianae* Roh., *N. virginiana* Roh., *N. swainei*, Midd. The last named species was the most important considering abundance and areas of infestation.

The samples showed that the sawfly infestations are now well established over two large areas. The first was located north of the Cabonga reservoir in the vicinity of Camachigama Lake and covered an area of 1200 square miles. The second, comprising an area of about 700 square miles, was located in between Manouane and Chénoue lakes on the St. Maurice Watershed. Aside from these two large centers, a number of smaller ones existed, as for example, at Lake à la Culotte and south of Clova. These nuclei were actually localized areas within a band of light infestation 50 miles wide along the south side of the transcontinental railway.

Outside this large area, a small pocket of medium to heavy infestation was located on the Trenché River. In addition, two lightly infested areas were recorded at Desert Lake in the Ottawa Region and Rat River in the Lake St. John Region.

European Spruce Sawfly, *Diprion hercynias* (Htg.).—After a steady decline during the past few years, the population levels of this sawfly showed an increase during 1954. This is indicated both by the number of samples received and the average number of larvae per sample.

The majority of the collections came from the western section of the Province, that is from the Abitibi, Temiskaming, Ottawa, North Montreal, and St. Maurice regions, with the highest concentration in the Abitibi Region. Infestations were reported from Bourlamaque, Senneterre, Barraute, Taschereau, Dalquier, La Salle, Trecesson and Chazel townships as well as at Laniel and Val d'Or. This insect was also found at St. Michel des Saints, Cann, and Lake Dubois north of Gouin Dam. Farther east, one significant collection came from Thetford Mines. Average per sample: 3.7

Eastern Hemlock Looper, *Lambdina fiscellaria fiscellaria* (Guen.).—In 1954, this insect was collected from spruce and balsam fir trees. Evidence of a general decline in the number of collections of this species has been noticed since 1949.

In 1954, over one half of the collections came from the Ottawa, North Montreal, and St. Maurice regions. In western Quebec, the largest collections originated from Laniel, Lake Dumoine, and Ste. Anne du Lac. Another large collection came from Armstrong in Beauce County. Average per sample 1.6.

Yellow-headed Spruce Sawfly, *Pikonema alaskensis* (Roh.).—There was a considerable decrease in the abundance of this insect in 1954. The number of collections received, which have totalled over 200 each season during the last five years, dropped to 69. The average number of larvae per sample, however, increased slightly.

Temiskaming and Ottawa were the two regions where the insect was most commonly collected. Collections were taken at Lake Expance, Maniwaki, Montebello, and Kipawa River. Average per sample: 6.

Large Spruce Weevil, *Hypomolyx piceus* (DeG.).—Adult weevils were received from 69 widely separated locations. No special infestations warrant mention except the Valcartier area where these insects were abundant in plantations of Scots and white pine as well as Norway spruce.

Spruce Needleworm, *Dioryctria reniculella* (Grt.).—Collections received in 1954 numbered 36 as compared with 57 in 1953. The insect was most common in the same areas in the Lower St. Maurice Watershed referred to in the 1953 Report.

Black-headed Budworm, *Acleris variana* (Fern.).—This insect was noticeably less common in 1954 than in 1953 although similar numbers of collections were made on balsam fir and spruce. A sizable collection came from Chicoutimi and another from Alex River in the Lake St. John district. Two other locations which should be mentioned are Lake Toro in Maskinonge County and Noranda in the Abitibi Region. Reports were also received on an infestation on the Nouvelle Watershed. Average per sample: 1.5.

Balsam-fir Sawfly, *Neodiprion abietis* (Harr.).—This insect was received from 34 different locations in 1954. Most of these collections came from Labelle, Nominigüe, and Mont Tremblant Park, where collections were made in 1953. Average per sample: 1.7.

Spring Cankerworm, *Paleacrita vernata* Peck.—Numerous samples of this insect were received from the Lake St. Francois area. The most serious defoliation was noted on maple trees, in Frontenac and Megantic counties. Damage varied from light to medium in Beauce County. Most of the larvae received from Lingwick showed signs of a polyhedral virus disease. In other areas, records of this insect came from Joliette and Berthier counties. Some insects were also found on the Richelieu Watershed. Average per sample: 8.8.

Larch Sawfly, *Pristiphora erichsonii* (Htg.).—In 1954, most of the collections of the larch sawfly came from the Abitibi Region where an infestation is apparently building up near La Sarre. An interesting report came from 65 miles north of Knob Lake on the Quebec-Labrador boundary. According to the observer in this particular area, tamaracks were almost completely denuded within a radius of 15 miles. Special efforts were made this year to recover this insect from several previously infested areas, but without success. Average per sample: 24.8.

Basswood Looper, *Erannis tiliaria* (Harr.).—Although less abundant than in 1953, this insect was recorded again in the Eastern Townships. A few collections came from the southern part of the Ottawa Region. It was also found on the Shipshaw Watershed in the Lake St. John Region and at Nouvelle in the Chaleurs Bay Region. Average per sample: 1.4.

Larch Casebearer, *Coleophora laricella* (Hbn.).—The most significant of the few collections received came from the Chicoutimi area. A few specimens were found at L'Annonciation and on the Tomasine Watershed. Average per sample: 27.7.

Mountain-ash Sawfly, *Pristiphora geniculata* (Htg.).—In 1954, damage by this insect was noticed throughout the range of its host. It was especially abundant at Riviere du Loup, at Bersimis on the North Shore, and at Mont Laurier. Heavy defoliation was also recorded on ornamental trees in the vicinity of Quebec City. Average per sample: 20.5.

Hemlock Borer, *Melanophila fulvoguttata* (Harr.).—This insect which generally attacks weakened hemlocks was relatively abundant in a mature stand of the Harrington Forest Farm in Argenteuil County.

Elm Leaf Beetle, *Galerucella xanthomelaena* (Schr.).—For the first time, this serious introduced defoliator was reported in the Province of Quebec. It was prevalent over a large area along the Richelieu River between Lacolle and Napierville. Some elm trees were completely stripped of their foliage.

European Pine Shoot Moth, *Rhyacionia buoliana* (Schiff.).—The presence of this serious pest of ornamental pines was noted for the first time in Quebec City and the vicinity. Judging by the number of trees infested, the insect was well established. It is worth mentioning, however, that no parasites were obtained from the material reared in the laboratory.

Balsam Bark Beetle, *Pityokteines sparsus* (Lec.).—On several occasions during 1954, this insect was reported as the cause of the damage to isolated balsam fir trees. Preliminary investigations did not permit an assessment of the part played by this insect in tree mortality. Only a few samples were received for identification at the laboratory.

Birch Leaf Miner, *Fenusa pusilla* (Lep.).—During the summer, reports indicated the abundance of this miner in several areas. Damage was particularly noticeable in Portneuf, Champlain, Three Rivers, and Maskinonge counties.

LIST OF COLLECTORS

Co-operators

Adam, R.	Bélanger, A.	Bouchard, R.
Alarie, G.	Bélanger, C.	Bouchard, T. L.
Amyot, M.	Bélanger, C.	Boucher, L.
Amyotte, P.	Bélanger, M.	Boudreau, A.
Anspach, J. C.	Belec, L.	Boudreau, F. X.
Ardis, G.	Belleau, M.	Boudreau, C.
Audet, J. M.	Bellegarde, A.	Boudreau, C.
	Bérard, A.	Boudreau, L.
	Berger, A.	Boudreau, V.
Bacon, F.	Bergeron, H.	Bouillon, C. E.
Barney, R.	Bergeron, R.	Bourque, A.
Bastien, L.	Bernatches, C.	Bourque, E.
Beaubien, J. M.	Bernatches, G.	Bourque, F.
Beauchamp, C.	Bernatches, S.	Bourque, P.
Beaudin, J. G.	Bérubé, J. M.	Boutin, J.
Beaudin, Jos.	Bérubé, O.	Boyd, Jos.
Beaudoin, C.	Binette, D.	Brisson, A.
Beaudry, L.	Blais, A.	Brittain, W. H.
Beaulieu, G.	Blais, J. B.	Brodeur, A. E.
Beaulieu, J. H.	Blouin, G.	Brouse, R.
Beaulieu, L.	Bohemier, B.	Brousseau, J.
Beaupré, P.	Bois, A.	Brousseau, L.
Beaupré, R.	Bois, I.	Brown, L.
Beauregard, L.	Boivert, D.	Bussière, C.
Bédard, A.	Bond, A.	
Bédard, F.	Bordaleau, E.	Canapé, G.
Bédard, G.	Bouchard, A.	Canapé, J. N.
Bédard, O.	Bouchard, O.	Cantin, H.
Béland, M.		

LIST OF COLLECTORS—Continued

- Cantin, P. H.
 Caron, A.
 Caron, A. L.
 Caron, G.
 Caron, J. B.
 Carpentier, G.
 Carpentier, P.
 Carrier, B.
 Carrier, G.
 Carrier, J. E.
 Carrier, W.
 Cassidy, L.
 Castonguay, L.
 Cayer, G.
 Cayer, V.
 Chabot, J. A.
 Chabot, F.
 Chabot, R.
 Chalmers, T.
 Chamberland, P. E.
 Chambers, W.
 Champagne, M.
 Champoux, G.
 Charbonneau, C.
 Charbonneau, E.
 Charbonneau, G.
 Charbonneau, J. L.
 Charette, P.
 Charlebois, A.
 Chartre, J.
 Chassé, J. B.
 Chenier, N.
 Chevarie, A.
 Chiasson, A.
 Clark, P.
 Cloutier, P. A.
 Cloutier, R.
 Cloutier, H. L.
 Coleman, D. J.
 Corby, J.
 Cormier, F.
 Cormier, H.
 Corriveau, E.
 Cossette, B.
 Cossette, J. M.
 Côté, A.
 Côté, E.
 Côté, H.
 Côté, L.
 Coull, G.
 Coulombe, A.
 Coulombe, L.
 Courtemanche, L.
 Couture, A.
 Couture, F.
 Couturier, E.
 Couvrette, C.
 Croussette, E.
 Cyr, A.
 Daigle, W.
 Dallaire, P.
 Dastous, R.
 Daviault, L. P.
 Delage, N.
 Delarosbil, R.
 Delisle, R.
 Derouin, V.
 Desaulniers, O.
 Deschènes, A.
 Deschènes, E.
 Descoteaux, M.
 Desève, T. E.
 Desjardines, I.
 Desjardins, M.
 Desjardins, N.
 Desruisseaux, D.
 Dion, G.
 Dion, G.
 Dionne, J.
 Dominique, L.
 Donovan, E.
 Donlan, W. G.
 Doré, R.
 Doucet, M.
 Drouin, S.
 Drouin, S.
 Dubé, A.
 Dubé, C.
 Dubé, E.
 Dubé, J. B.
 Dubé, Y.
 Duchaine, A.
 Ducharme, Au.
 Ducharme, R.
 Duchemin, B.
 Duchesne, R.
 Dugas, A.
 Dumont, R.
 Dupuis, I.
 Durochers, F.
 Duval, L.
 Edwardson, A.
 Edwardson, L.
 Eseroff, J.
 Faucher, A.
 Ferrigan, J.
 Ferrigan, M.
 Fleury, A.
 Fleury, E.
 Ferguson, J.
 Foley, A.
 Foley, H.
 Foley, J.
 Foley, P.
 Forbes, J.
 Forgues, E.
 Fortin, L.
 Fortin, F.
 Fortin, J. M.
 Foster, C.
 Fournier, A.
 Fournier, W.
 Francoeur, A.
 Fuller, D.
 Gagné, C.
 Gagné, H.
 Gagné, J. A.
 Gagné, W.
 Gagnon, A.
 Gagnon, C.
 Gagnon, E.
 Gagnon, J. L.
 Gagnon, J. T.
 Gagnou, V.
 Gallant, W. J.
 Gamache, D.
 Garceau, C.
 Garceau, G.
 Garceau, I.
 Garneau, I.
 Garneau, O.
 Garnier, J.
 Gaudreau, E.
 Gaulin, L.
 Gauthier, B.
 Gauthier, L. J.
 Gauthier, T. J.
 Gauvin, R.
 Gélinas, G. A.
 Gélinas, J. P.
 Gélinas, L.
 Gélinas, M.
 Gélinas, S.
 Généreux, F.
 Géois, A.
 Gérard, A.
 Gérard, R.
 Germain, G.
 Germain, S.
 Gervais, J. L.
 Gervais, M.
 Gignac, G.
 Gignac, R.
 Gilbert, M.
 Gilbert, N.
 Girard, L.
 Godin, G.
 Gordon, S.
 Goudreault, R.
 Gouger, L.
 Gouger, R.
 Goulet, D.
 Grand-Louis, M.
 Grant, D.
 Graveline, O.
 Gros-Louis, N.
 Guay, C.
 Guay, G.
 Guay, J.
 Guénette, A.
 Guérin, U.
 Guidon, R.
 Hamelin, D.
 Hamelin, V.
 Harvey, J.
 Harvey, L. A.
 Harvey, O.
 Harvey, R.
 Hautein, F.
 Hawley, J.
 Heaphy, E.
 Henry, J.
 Henry, D.
 Henry, O.
 Henry, T.
 Héroux, D.
 Héroux, R.
 Hervé, E.
 Hund, G.
 Imbeault, P.

LIST OF COLLECTORS—Continued

- Jacques, L. P.
 Jean, P.
 Jeanne, J. A.
 Jérôme, J.
 Joly, I.
 Joly, O.
 Jourdan, E.
 Jubinville, D.
 Julien, M.
 Juneau, D.

 Keable, R.
 Keeney, O.
 Keyes, R. A.
 Keys, R.

 Labelle, B.
 Lacasse, A.
 Lacasse, B.
 Lacasse, J.
 Lacasse, J. B.
 Lacasse, S.
 Lachaine, A.
 Lachaine, C.
 Lachaine, J. M.
 Lachance, A.
 Lachance, J.
 Lachance, N.
 Lachapelle, A.
 Lafontaine, E.
 Laforest, F.
 Laforest, L.
 Laforest, T.
 Laforge, A.
 Laforge, A.
 Lafortune, R.
 Lafrenière, B.
 Lafrenière, B.
 Lafrenière, T.
 Laing, R.
 Lajoie, E.
 Lajoie, L.
 Lalande, B.
 Lambert, W.
 Lamontagne, O.
 Lance, W. S.
 Landry, A.
 Landry, G.
 Langlois, A.
 Langlois, M.
 Langlois, R.
 Lapalice, G.
 Lapointe, A.
 Lapointe, M.
 Laporte, Y.
 Laroche, E.
 Laroche, G.
 Laroche, P.
 Larocque, F.
 Larose, D.
 Larose, E.
 Larose, L.
 Larouche, C.
 Larouche, E.
 Latulipe, P.
 Laurendeau, J.
 Lavallée, R.
 Lavallée, Z.
 Lavoie, D.

 Lavoie, Er.
 Lavoie, F.
 Lavoie, J. L.
 Lavoie, M.
 Lavoie, R.
 Lavoie, T.
 Leblanc, A.
 Leblanc, H.
 Leblanc, N.
 Leblanc, W.
 Lechasseur, A.
 Lechasseur, X.
 Leclerc, L.
 Leconte, M.
 Lefevre, G.
 Lefrançois, A.
 Legros, G.
 Lemelin, L.
 Lemieux, Y.
 Lepage, C.
 Lepage, H.
 Lepage, J. E.
 Lepage, R.
 Lépine, M.
 Lépine, R.
 L'Espérance, M.
 Lessard, E.
 Létourneau, L.
 Lévesque, A.
 Lévesque, F.
 Lévesque, G.
 Lévesque, G.
 Lévesque, I.
 Lévesque, J.
 Lévesque, L.
 Lévesque, V.
 L'Heureux, M.
 Louis, B.

 Maclean, M.
 Malenfant, F.
 Mailloux, R.
 Mantha, A.
 Mantha, J. P.
 Marcotte, T.
 Marineau, A.
 Marion, F.
 Marion, M.
 Marion, O.
 Marquis, O.
 Martin, R.
 Massé, E.
 Massicotte, G.
 Massie, A.
 McDonald, J. L.
 McFarland, G.
 McFarland, J.
 McGregor, E.
 McKale, E.
 McNicoll, P.
 Megush, E.
 Ménard, W.
 Ménard, J. H.
 Mercier, F.
 Mercier, J. M.
 Meredith, G.
 Michaud, E.
 Michaud, G. H.
 Michaud, J.

 Michaud, M.
 Miller, S.
 Millette, A.
 Moisan, C.
 Montreuil, O.
 Moore, D.
 Morais, L.
 Morand, H.
 Morin, A.
 Morin, D.
 Morin, E. J.
 Morin, J. R.
 Morin, L. P.
 Morin, L.
 Morin, St-G.
 Morrison, G. D.
 Morris, A.
 Morrissette, G.
 Morissette, L. H.
 Muller, S.
 Munger, M.
 Murchison, G. H.

 Navion, G.
 Natapi, P.
 Neiget, G.
 Nielly, E.
 Niquet, G.
 Nolet, R.
 Norchet, M.

 O'Leary, J.
 Ouellet, Ar.
 Ouellet, C.
 Ouellet, E.
 Ouellet, G.
 Ouellet, J. B.
 Ouellette, A.
 Ouellette, Z.
 Ouimet, J.

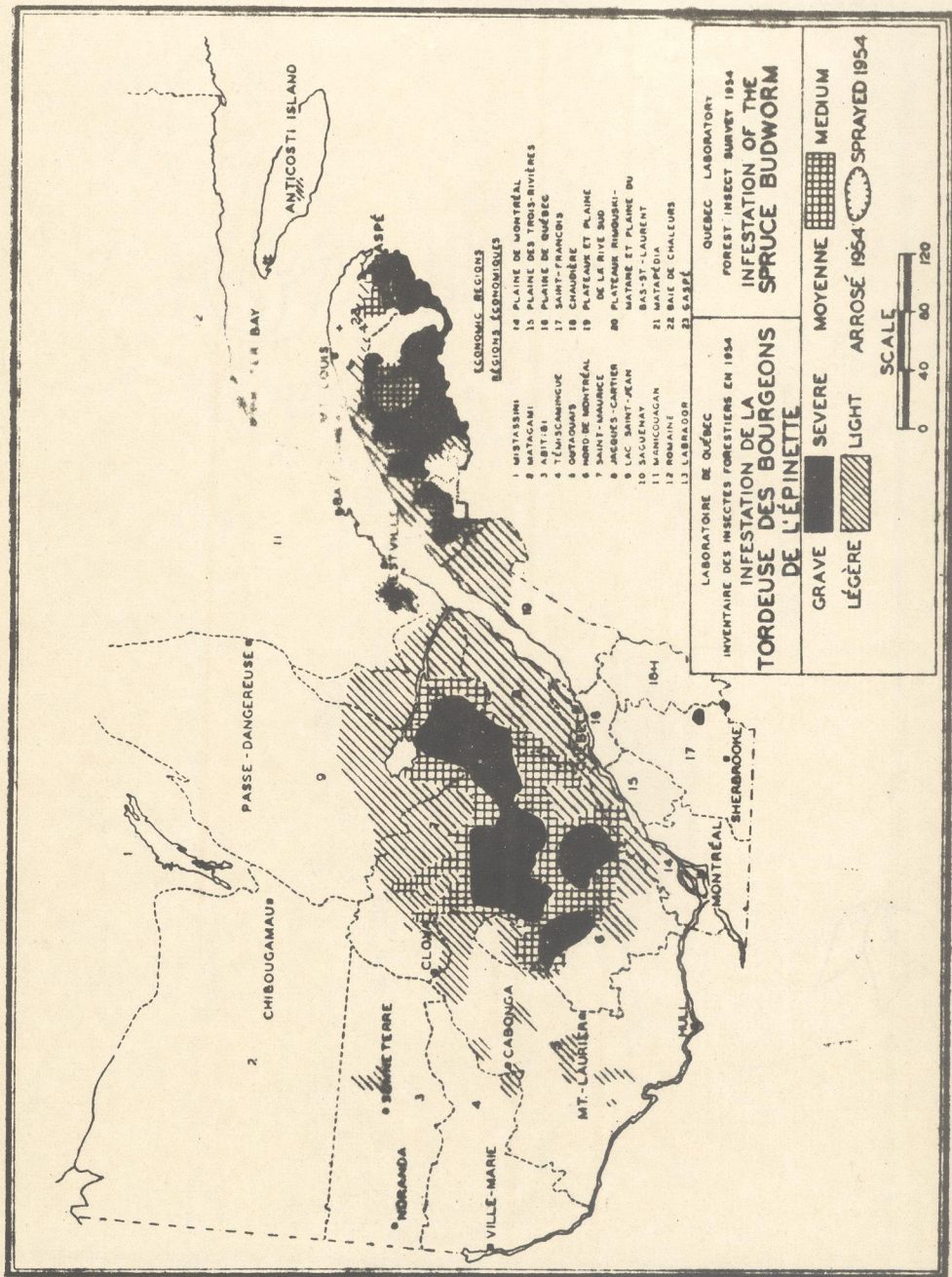
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 Paquette, R.
 Paquette, V.
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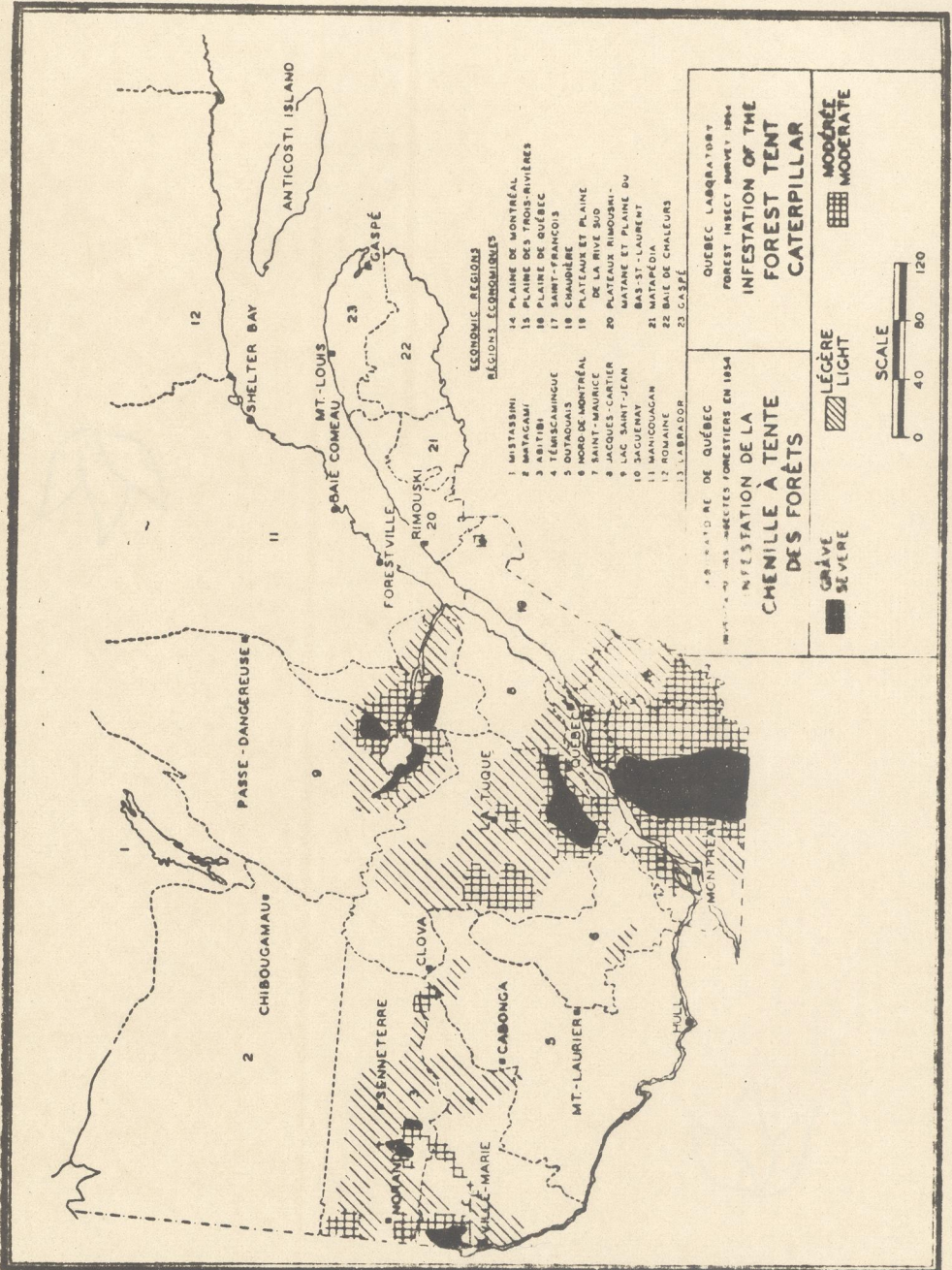
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- Perron, J.
 Perron, J. A.
 Perron, Y.
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- Roy, At.
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 Ruel, E.
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- Sage, F.
 Samson, Ar.
 Savard, A.
 Savard, C. E.
 Savard, I.
 Savard, R.
 Séguin, R.
 Shaw, D.
 Shearsmith, G. V.
 Sheppard, S.
 Sigouin, O.
 Simard, E.
 Simard, L. G.
 Simard, R.
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 Smith, J. T.
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 St-Louis, A.
 St-Pierre, An.
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- Tabisco, A.
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- Tornick, J.
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 Touzin, P. E.
 Tremblay, A.
 Tremblay, Al.
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 Tremblay, G.
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 Tremblay, V.
 Tremblay, W.
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- Vaillancourt, P.
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 Vallée, J. B.
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 Vandal, B.
 Vanderbilt, J. C.
 Veillette, R.
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 Violette, P. E.
- Walter, M.
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 Warren, P.
 Watson, A. H.
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 Willard, J.
 Wintie, J.

Forest Biology Division

- Béique, R.
 Davisault, L.
 Ducharme, R.
 Gauvin, G.
- Lortie, M.
 Martineau, R.
 Michaud, G.
- Morin, L.
 Paine, L. A.
 Pomerleau, R.





- ÉCONOMIE RÉGIONS
RÉGIONS ÉCONOMIQUES**
- 1 MISTASSINI
 - 2 MATAKAMI
 - 3 ABITIBI
 - 4 TÉMSCAMINGUE
 - 5 DOUTROUAIL
 - 6 MONTRÉAL
 - 7 SAINT-MAURICE
 - 8 JACQUES-CARTIER
 - 9 LAC SAINT-JEAN
 - 10 SAGUENAY
 - 11 MANICOUAGAN
 - 12 ROMAINE
 - 13 LABRADOR
 - 14 PLAINE DE MONTRÉAL
 - 15 PLAINE DES TROIS-RIVIÈRES
 - 16 PLAINE DE QUÉBEC
 - 17 SAINT-FRANÇOIS
 - 18 CHAMPLÈNE
 - 19 PLATEAUX ET PLAINE
 - 20 PLATEAUX RIMOUSKI-MATAKAMI
 - 21 BAS-ST.-LAURENT
 - 22 BAIE DE CHALEURS
 - 23 GASPÉ

LABORATOIRE DE QUÉBEC
 LES SERVICES FORESTIERS EN 1954
**INFESTATION DE LA
 CHENILLE À TENTE
 DES FORÊTS**

GRAVE SEVERE
 LÉGÈRE LIGHT
 MODÉRÉE MODERATE



