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Résumé de l'article

Les arbres de rue vivent dans un espace ambivalent, entre le cadre bâti et l'environnement naturel, et leur statut reflète des changements de mentalité vis-à-vis de la nature. Leur place a particulièrement fait l'objet de discussions au cours de débats tenus sur les arbres de rue à Ottawa, entre 1869 et 1939. À la fin du XIX^e siècle, on encourageait les propriétaires de maison à planter des arbres, par souci d'ordre esthétique des rues résidentielles et pour réduire les miasmes. Cependant, à leur maturité, les arbres entraient en conflit avec l'infrastructure en forte croissance des trottoirs, du pavement des rues et des fils électriques. La Société d'horticulture d'Ottawa, dirigée par l'horticulteur fédéral W. T. Macoun, a vivement recommandé au conseil de la ville d'employer des professionnels pour s'occuper des arbres. Elle a également fait mettre à l'ordre du jour le « désavantage que représentent une ombre trop dense pour la pelouse et les habitations, des arbres malades ou mal taillés, et les conséquences des racines des arbres, telles les fissures de trottoirs et l'obstruction de services ». En guise de réponse, Ottawa a mis sur pied, durant les années 1920 et 1930, un vaste programme d'élagage et d'abattage des arbres, en particulier l'orme américain.

“Said tree is a veritable nuisance”: Ottawa’s Street Trees 1869–1939

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Abstract

Street trees exist in an ambiguous space between built and natural environments, their status reflecting shifting attitudes towards the natural world. Their place was especially evident in debates over street trees in Ottawa between 1869 and 1939. In the late nineteenth century, homeowners were encouraged to plant trees, to bring esthetic order to the residential streetscape and to reduce miasma. But as they matured, the trees came into conflict with the rapidly expanding infrastructure of sidewalks, asphalt paving, and utility wires. The Ottawa Horticultural Society, led by Dominion Horticulturalist W. T. Macoun, urged city council to have them managed professionally. In response, during the 1920s and 1930s the city engaged in an extensive program of tree trimming and removal, targeting the American elm.

Résumé

Les arbres de rue vivent dans un espace ambivalent, entre le cadre bâti et l’environnement naturel, et leur statut reflète des changements de mentalité vis-à-vis de la nature. Leur place a particulièrement fait l’objet de discussions au cours de débats tenus sur les arbres de rue à Ottawa, entre 1869 et 1939. À la fin du XIX^e siècle, on encourageait les propriétaires de maison à planter des arbres, par souci d’ordre esthétique des rues résidentielles et pour réduire les miasmes. Cependant, à leur maturité, les arbres entraient en conflit avec l’infrastructure en forte croissance des trottoirs, du pavement des rues et des fils électriques. La Société d’horticulture d’Ottawa, dirigée par l’horticulteur fédéral W. T. Macoun, a vivement recommandé au conseil de la ville d’employer des professionnels pour s’occuper des arbres. Elle a également fait mettre à l’ordre du jour le « désavantage que représentent une ombre trop dense pour la pelouse et les habitations, des arbres malades ou mal taillés, et les conséquences des racines des arbres, telles les fissures de trottoirs et l’obstruction de services ». En guise de réponse, Ottawa a mis sur pied, durant les années 1920 et 1930, un vaste programme d’élagage et d’abattage des arbres, en particulier l’orme américain.

In the second half of the nineteenth century, city streets across North America were planted with rows of saplings; fifty years later, American elm, sugar maple, and white ash trees soared above the houses. Shady avenues became a source of civic pride, and municipalities vied for the title of Forest City. Ottawa’s urban forest reached its peak in 1932, when Blodwen Davies wrote, “Ottawa is a city in green plumage all the long summer, for its streets and parks, gardens and drives are thickly covered with trees. From the clear, translucent green of May until

autumn, when they cover the city like an old tapestry of jade and gold, wine and russet, they are a crowning glory.”¹

Her feelings were not shared by local horticulturalists, who were alarmed at the rampant growth of the large trees, especially as they came into conflict with the new utility wires, sidewalks, and paving. In 1922 the Ottawa Horticultural Society (OHS) launched a campaign for a “Civic Policy for the Control of Street Trees.” They complained about “too dense shade,” “unhealthy and misshapen trees,” and “the breaking up of sidewalks and the obstruction of other utilities by tree roots.”² They lobbied the city to bring the trees back under control.

With the exception of Thomas J. Campanella’s *Republic of Shade*, a scholarly elegy for the elm, and a series of articles by H. W. Lawrence,³ city trees rarely appear on the historical horizon. They do not appear in forest history, which focuses on forests as natural or recreational resources. Nor do they appear in urban environmental history, which has until recently focused heavily on the technology of sewers, water supply, and garbage disposal. Even Peter Baldwin’s *Domesticating the Street* forgets that trees were once a central component of the residential streetscape, valued for their shade and environmental benefits as much as esthetics. They do appear briefly in landscape and garden history, but here the focus has been upon park trees, the picturesque groves in the apparently natural landscape of Frederick Law Olmsted. Street trees are positioned physically as well as conceptually in a no man’s land between city and nature, and fit none of the usual interpretive frames.⁴

Why does this history matter? Street trees have a measurable impact on the city environment, but tree advocates argue that they are also important because they both reflect and influence how we think about the rest of the natural world. These advocates point out that our understanding of trees is based on our knowledge of the trees closest to us, and for 80 per cent of Canadians today, these are urban trees. We understand the boreal forest through the trees in our backyards. The argument can be applied historically, for even in the nineteenth century a disproportionate number of decision makers lived in urban areas. Prime Minister John A. Macdonald was, after all, sitting in treeless Ottawa in 1871 when he made his oft-quoted lament about the decline of the northern forests: “We are recklessly destroying the timber of Canada and there is scarcely a possibility of replacing it.”⁵ Many of the conservationists at the Commission of Conservation were urban dwellers, and some, like W. T. Macoun, were engaged in urban arboriculture as they campaigned for the wise use of timber trees. Ellen Stroud has demonstrated that the most vocal defenders of the forest in late nineteenth-century New England were urban dwellers, and she concludes that the reforestation of Maine, Vermont, and New Hampshire should be understood as a product of urbanization,

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rather than its antithesis.⁶ Similar links can be found in the twentieth century. The rise of the environmental movement followed the devastating spread of Dutch Elm disease in urban neighbourhoods across eastern North America and the visible loss of forests and other open spaces at the edges of suburbia.⁷

This is a study of street trees in one city, Ottawa, over seventy years, the lifespan of a person and, as we shall see, the lifespan of many Ottawa trees. Policies on street trees in Ottawa shifted radically between 1869, the date of the first bylaw to encourage the “planting and protection of Shade and Ornamental Trees,” and the 1920s, when the city launched an aggressive program of tree cutting and tree trimming. The trees that had been so carefully planted and protected by one generation were aggressively pruned and removed by the next. The attitudes underlying this shift emerge in the prolonged campaign by the horticultural society for the “control” of street trees.

Ottawa is an interesting example because attitudes in the national capital reflected national as well as local thinking. A lumber town turned capital, the city was hastily “improved” at the urging of governors general and prime ministers, and the landscaping was as much the product of federal bodies like the Ottawa Improvement Commission (OIC, the forerunner of the National Capital Commission) and the Central Experimental Farm, as it was of local initiatives.⁸ Municipal tree policies reflected the informed advice of experts like the director of Ottawa’s Experimental Farm and Arboretum, William Saunders, and W. T. Macoun, dominion horticulturalist.

Trees for Shade and Ornament: 1869–1900

The Ottawa area had been well forested before the arrival of Europeans. Champlain described magnificent pine forests along the Ottawa River. There were also upland forests of sugar maple, American beech, white elm, basswood, white birch, balsam fir, and eastern hemlock on the site, as well as eastern white cedar swamps in the low-lying areas. This forest disappeared quickly under demands for lumber and firewood, and by the mid-nineteenth century, paintings indicate that there were very few trees in or around the city, although cedar and tamarack still grew in the swamps, and patches of second-growth forest had grown up in the low-lying areas.⁹ Parliament Hill, for example, was stripped of trees between 1828 and 1834, and had recovered only partially by 1855, and developers commented that there was scarcely a tree left on the fifty hectares of the adjacent Sandy Hill neighbourhood. Stumps remained: they blocked road construction, had to be dynamited from fields, and resurfaced years later when lakes were drained.¹⁰

The lack of trees was perceived as a problem, especially when Ottawa became the capital. As one visitor commented in 1865, “They swelter . . . in the unshaded streets of their dusty capital.”¹¹ Joseph Howe, newly come to Ottawa as a member of Parliament and cabinet minister, scolded Canadians: “In almost all our northern cities we are far behind our republican neighbours in arboriculture. . . . They commenced to replant trees

about the time we seriously began to cut them down and now nearly all their cities and streets are planted.”¹²

The first municipal response appears to have been a bylaw passed in 1869 “to provide for the planting and protection of Shade and Ornamental Trees in the Public Streets and Squares of the City of Ottawa and for the payment of a premium for the same.” The bylaw provided for payment of twenty-five cents to the homeowner for a properly planted tree “at least one and a half inches in diameter at the height three feet from the ground, sixteen feet and six inches apart, and the same distance from any other trees planted in the street, and . . . not less than ten, nor more than thirteen feet from the line of any street,” protected by a fence and in good condition two years after planting.¹³ A second tree-planting bylaw was passed in 1890.

Ottawa began to feel proud of its trees: a book published by city council in 1884 boasted of a new suburb, New Edinburgh, where “the greater number of streets have been planted with shade trees which add much to the beauty of the place.”¹⁴ By 1904 Anson Gard enthused, “Tree embowered Ottawa is becoming a veritable beauty spot.”¹⁵ Trees defined space in the city by identifying a hierarchy of streets: commercial streets were generally treeless, and the appearance of trees on one section of a commercial street marked a shift to residential uses.¹⁶ Long avenues of uniform shade trees became associated with privilege and wealth.¹⁷ *Ottawa: Canada's Beauty Spot* defined Metcalfe Street, where “several of the millionaires of Ottawa have their homes,” in terms of its trees: “Avenues of maple trees make this street doubly picturesque, especially in the summer when they are in full leaf.”¹⁸ (See figures 2a through 2d.)

Street trees were planted, quite literally, in the street. The majority of streets were unpaved in Ottawa at this time, and the trees were frequently planted in the grassy boulevard between the muddy street and the raised plank sidewalks. Trees were also planted between the sidewalk and the property line of the adjacent homeowner.¹⁹ Ownership was ambiguous. The trees were on municipal property, but most were planted by adjacent homeowners, and provincial legislation passed in 1871 assigned ownership to these residents. This made sense in rural areas where trees represented an asset, either as lumber or firewood. The situation was different in the city: over time, city trees became a liability, and the ambiguities regarding ownership were to prove problematic.²⁰

The homeowner had clearly identified proprietary rights. Trees were to be planted and trimmed by homeowners, and the *Ontario Municipal Act* required that the city give notice—initially one month, then ten days, and finally forty-eight hours—before removing them.²¹ In the early years, homeowners had the right to be compensated for the loss of the shade trees they had planted. The city solicitor laid out the city’s responsibilities in 1911 to an alderman: “Owners of any adjoining property shall be entitled to ten days notice of the intention of the Council to remove such tree, shrub or sapling and to be recompensed for his trouble for in planting and protecting same.”²² The costs were significant: a

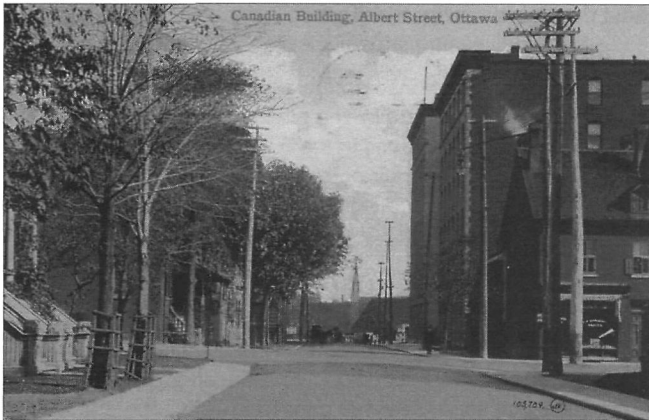


Figure 1: Albert Street, circa 1912. Trees identified a hierarchy of streets. Here they mark a shift from commercial to residential uses

"Canadian Building, Albert St.," postcard postmarked 1912

Mrs. Morgan was one of a number of claimants in 1895, and she received \$70 for the loss of her shade trees.²³

In other respects, the trees were municipal property and a municipal responsibility. The *Municipal Act* stated that residents were not permitted to cut down street trees without permission of the city council. Street trees were part of the infrastructure of the street, legislated for in 1890 under a bylaw for the "protection and regulation of streets," and managed (to the extent they were managed) by the engineer of the Board of Works. Departmental reports on trees appeared with reports on paving, sewers, and sidewalks. The 1890 bylaw specifically reserved council's right to remove trees and made council responsible for their preservation. The bylaw continued to provide compensation of twenty-five cents to the owner for planting the trees, although the city solicitor commented in 1911 that the provision was never applied.²⁴

Private planting was an inexpensive way to forest the city, and it did quickly provide the shade needed during Ottawa's humid summers. The foliage also cleaned the air. Science has since put numbers to the cooling and cleansing effect of urban trees, but in the nineteenth century the same effects were assumed to result from the reduction of disease-inducing miasma.²⁵ Frederick Law Olmsted called parks the green lungs of a city, and a book put out by the local newspaper, *Ottawa Past and Present* (1924), proudly boasted that the "abundance of breathing spaces in the ways of parks and driveways, and the residential districts with their wealth of stately homes, lawns, gardens and shade trees, indicate that life here is enjoyed under the most favourable of circumstances."²⁶ Trees served a very practical purpose, cleaning and cooling urban air.

Private planting, however, did not often produce esthetically pleasing results. The ideal was a long row of identical trees of the same species, size, and age. An avenue of tall identi-

cal trees visually lengthened the street, brought a discipline and unity to the uneven nineteenth-century streetscape, and masked empty lots and ugly buildings. One of Ottawa's most famous avenues, Clemow Avenue, was designed as a ceremonial route by landscape architect Frederick Todd for the Ottawa Improvement Commission. He suggested that Clemow should be made wider than most streets, twenty-five metres, and planted with "a uniform row of trees," one metre or so from the street line, kept under care of the commission.²⁷ Although they ignored much of Todd's advice, the commission planted this avenue as he advised, and Clemow's elm trees subsequently became the pride of the city, striking even in aerial photos.

On privately planted streets, however, the results were often haphazard, as the horticultural society complained.²⁸ Trees were planted too close to one another, and symmetry was often lacking as homeowners planted at different times, or chose trees with different growth habits. Local experts like William Saunders, director of Ottawa's Experimental Farm, recommended the planting of large, well-shaped forest trees. American elm was his favourite: "It is a majestic and graceful tree, the trunk is noble in its stateliness, and . . . it is a fine tree for an avenue." The small mountain ash, however, was "scarcely large enough in its growth to serve good purpose."²⁹ Many homeowners shared his preferences, but they had to be prohibited in 1890 from planting fast-growing and brittle species: silver poplar, balm of gilead or Cotton tree, and willow.³⁰

Competing with the Built Environment: 1900–1922

The trees grew quickly, too quickly for some. The unpaved, well-manured streets of the nineteenth-century city provided an environment conducive to tree growth, and the species favoured by most residents, including Saunders' American elm, grew rapidly.³¹ The city was also growing, and the role of the street changing. Trees, initially designed as part of the street, began to compete with the hard infrastructure.

Sidewalks caused the first problems: haphazardly planted street trees had to be removed as contractors excavated for new granolithic sidewalks in the late nineteenth century. New road surfaces came next: asphalt was introduced in the 1890s, and tar macadam in 1902. Once again, unevenly planted trees were removed. (In 1895, when Mrs. Morgan's trees were removed for sidewalks, a Mrs. Wilson claimed compensation for five trees removed for asphalt, and an additional claim was paid for trees removed for the streetcar.)³² With the introduction of the car, the demand for paving increased; by 1939 a total of 130 kilometres were asphalted.³³ Both asphalt and tar macadam were impervious to water, and the curbs and drains installed with the paving redirected rainfall into the storm sewers, reducing the water available for tree roots (figures 4, 6). At the same time overhead wires competed with the branches of growing trees. The city engineer reported in 1903, "The city streets are greatly disfigured by the multiplicity of poles carrying wires for telephone, telegraph, electric light, electric railway, and fire alarm services. It is not unusual to see three lines of poles

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Figure 2a: Metcalfe Street, circa 1913

Postcard titled, "Metcalfe St. showing new museum"



Figure 2b: Metcalfe Street, n.d.

City of Ottawa Archives, CA 02976



Figure 2c: Metcalfe Street, 1954. Note the fallen tree.

City of Ottawa Archives, CA 05076



Figure 2d: Metcalfe Street, 1956.

City of Ottawa Archives, CA 00279

in one block, some lines higher than others, and others again with extremely long cross arms, all presenting a most unsightly appearance."³⁴

Peter Baldwin has observed that the car redefined public spaces and forced children and pedestrians from the streets.³⁵ Trees were not so easily relocated; instead they were trimmed, thinned, and cut down. The Ottawa Horticultural Society engaged in a long campaign to persuade city council to accept the responsibility for maintaining the street trees. The OHS was influential, with a membership that grew exponentially from 525 in 1913–1914 to 1457 in 1916–1917. National experts like W. T. Macoun, the dominion horticulturalist, who lived in Ottawa, took a leading role.³⁶

The OHS campaign opened in September 1909 when the society proposed a new Street Tree Planting Bylaw. They sug-

gested further prohibitions on species, proposed that trees be planted nine metres apart, and demanded that "all tree cutting or pruning by [public utilities be] under the supervision of the Tree Inspector."³⁷ The city engineer endorsed their recommendation but, as members of the OHS recalled with some impatience in 1911, "No action has been taken, which is unfortunate, because so many of our beautiful shade trees are



Figure 3: Harvey Street, 1903. Many early street trees were located in the boulevard between the unpaved street and plank sidewalk, a setting conducive to healthy growth, as this photograph shows. Note the damaged bark on the first tree. An 1869 bylaw called for a fence to protect saplings from horses (and presumably, cows); the 1890 bylaw called for a wooden box. This street was still just outside city limits in 1903.

Photograph attributed to James Ballantyne / Library and Archives Canada, PA-133657

being destroyed through unskillful pruning and the reckless way various companies . . . erect wires and cut the trees to suit their own purpose."³⁸

In 1912 council responded to further inquiries by the OHS with Bylaw 3378. The city engineer was appointed inspector of trees. Homeowners now had to apply to him for permission to plant trees in the street, but these owners retained some proprietary rights: "No live tree unless within 30 feet of other trees shall be removed without the consent of the owner of the property in front of which such tree is situate." The relative positions of trees and pavement were clarified: any tree might be removed for "any purpose of public improvement." Contractors were to "avoid injuring any tree" when macadamizing or paving streets or making sidewalks, but if this was impossible, they could simply apply to the city engineer for instructions.

The city engineer balked at his increased workload in 1914.³⁹ A tree inspector was duly appointed but does not appear to have lasted, because in 1916 the OHS plans for the coming year included "the need for a qualified tree inspector" and suggested, hopefully, "enlist[ing] if possible the sympathy and cooperation of the Ottawa Improvement Commission"⁴⁰ On 16 March 1916 the city appointed a tree trimmer and supervisor,

"in view of numerous complaints as to the destruction of shade trees by persons devoid of the knowledge of tree trimming." Then they voted, narrowly, to cancel the appointment in the subsequent meeting, and ruled a third motion on the issue out of order.⁴¹ It is likely that cost was a problem, and it may have been that the ambiguities around responsibility for trees complicated the issue. In 1911 the city solicitor had avoided committing himself in writing in a letter to an alderman: "A communication which would define, in detail, the authority of the city in connection with the planting, removing, care, trimming, etc of trees would be very lengthy and perhaps it might not be sufficiently detailed for your purpose. I think I could give you a better understanding of the matter during a personal interview."⁴²

In 1920 the society launched a more vigorous campaign to press the city to develop a street tree policy for Ottawa. They invited leading representatives of Ottawa society, including the Canadian Forestry Association, the Local Council of Women, the Commission of Conservation, the Kiwanis Club, the Retail Merchants Association, and the Ottawa South Municipal Association, to a "booster supper," a round-table discussion of street trees. Over 300 people showed up; speakers included representatives of the Rotary Club, the Hunt and Motor Club, the Public School Board, and the Ottawa Branch of Canadian

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Figure 4: Daly Avenue, 1903. The City of Ottawa experimented with new tar macadam and curbing along Daly Avenue in 1903. By 1939 over 130 kilometres of streets were paved with asphalt or tar macadam; these impervious surfaces blocked water from tree roots.

City of Ottawa Archives, CA 19048



Figure 5: Fifth Avenue, n.d. Boulevard trees were particularly vulnerable when city streets were widened and paved with asphalt.

City of Ottawa Archives, CA 19628

Town Planning Institute. As the program explained, "The topic has been chosen because Ottawa cannot be made the beautiful city that its importance demands until intelligent supervision is given to the planting and care of the street trees. It is recognized that street trees should be first, well chosen; second, evenly and suitably spaced; third, intelligently trimmed; fourth, preserved from injury and disease; fifth, cared for as the pride of the city."⁴³

By October, however, there appears to have been little action, for officers of the society again approached the city "with regard to the proper planting of trees on city streets."⁴⁴ W. B. Varley of the OHS gave a talk on the topic. A city tree-trimming and tree-cutting campaign in November 1920 was probably a response: by 1 January 1922 a total of 2178 trees had been trimmed, and 308 cut down.⁴⁵ The OHS kept up the pressure for reforms to tree planting, and in April of 1921 Dr. J. H. Grisdale, "spoke on the bad tree planning done in the city in the past" and the need for more care in the future.⁴⁶

In 1922 the Society presented a report calling for "A Civic Policy for the Control of Street Trees." The report repeated many of the concerns raised earlier, but the language reflected a hardening attitude to city trees. Trees were no longer associated with "ornament" and "shade"; instead the "evils" of closely planted trees were emphasized. They were "superfluous," "unhealthy," and "misshapen."

Older city [trees] are uneven as to size and irregular as to spacing and here and there gaps occur where they have given up the struggle and disappeared entirely. As a matter of fact, today many are gradually dying owing to close planting, butchering by line men and for other causes. Their pruning and removal is

a constant source of expense to the city, an expense that will increase as citizens learn to appreciate the evils that result from too close planting and demand the removal of superfluous trees, which is a much more costly operation than that of planting.

Controlled planting is the only method of ensuring that street trees will be planted in such a manner as to beautify our streets to the fullest extent and at the same time lessen the disadvantage of too dense shade for lawn and dwelling, unhealthy and misshapen trees, the breaking up of sidewalks and the obstruction of other utilities by tree roots.

The Committee regards street trees as a public utility and maintains that their planting, protection and upkeep should be entirely in the hands of the city.⁴⁷

The report goes on to make a number of familiar recommendations: a greater distance between trees (9 to 13 metres was now recommended, depending upon species) and between tree and sidewalk (.9 to 1.2 metres); the planting of an entire street at once; the creation of a nursery with the OIC; and the appointment of a permanent advisory committee.

The last recommendation had the greatest effect. On 6 March 1922 the Board of Works recommended the creation of an advisory committee, the Street Tree Policy Committee, "to make suggestions regarding the city's tree work and policies."⁴⁸ The committee initially included the controller and representative from each of the interested bodies: the Ottawa Improvement Committee (W. T. Macoun), the Ottawa Horticultural Society (W. B. Varley), the Central Experimental Farm (M. B. Davis), and the Forestry Branch of the Department of the Interior (B. R. Morton). The same individuals were re-appointed annually for a decade, with J. B. Spence replacing Varley on his death. In

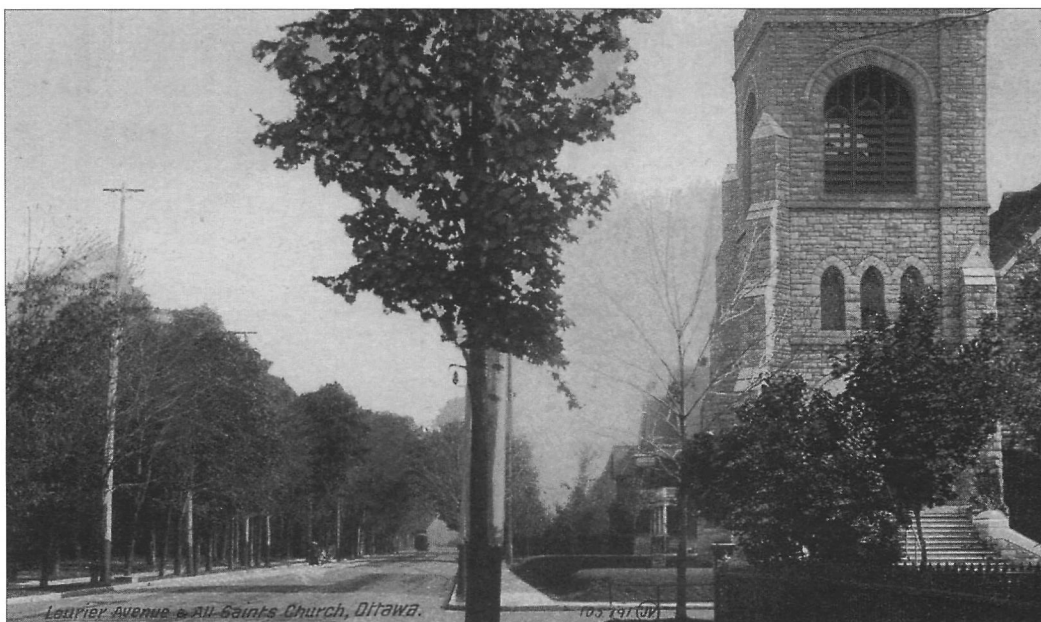


Figure 6: Laurier Avenue, n.d. A double row of trees shades the sidewalk on the left side of the street.

Postcard, "Laurier Avenue and All Saints Church"

the early 1930s new names appear, without obvious affiliation, including those of several women. (It appears that Macoun was the moving force. Although the committee existed under various names for two decades, on Macoun's death in 1933 membership shifted to a group of aldermen and it no longer functioned as an advisory body.)⁴⁹ The creation of the advisory committee moved the campaign inside the city, where OHS proposals began to appear in city policy.

The OHS proposals between 1909 and 1922 focused on the need for municipal responsibility for the city's trees. They were the horticultural component of a multi-faceted movement for the professional management of city streets. As the streets became a contested space, the problems with ad hoc planning for paving, sidewalks and utilities had generated demands for centralized control and professional standards. Trees were, as the OHS noted, a "public utility," like sewers and sidewalks, that also required central control and municipal funding.

The proposals also reflected the emergence of tree care as a profession. Arboriculture was emerging as a separate discipline, distinguished from forestry by its focus on individual trees. The first North American tree surgery book, John Davey's *The Tree Doctor*, was published in 1901, and commercial arboriculture expanded with the maturation of urban forests across eastern North America and the realization that stressed urban trees require a standard of care different from that of forest trees growing in symbiotic ecological communities.⁵⁰ Scientists and practitioners argued for a more professional management

of city trees. Shortly after the OHS campaign began, Bernard Fernow, dean of the Faculty of Forestry at the University of Toronto (previously the first chief forester of the United States), published *The Care of Shade Trees* (1910); William Solotaroff followed with *Shade Trees in Towns and Cities* (1911). Fernow observed that in "almost every small and large town in the United States there has been a remarkable activity in the planting of street trees during the last fifty years; but for the lack of care the majority, perhaps, of these trees have become cripples."⁵¹ Fernow eschewed politics, but Solotaroff concluded his book with a call for municipal control of street trees. The Ottawa Horticultural Society's criticism of "butchery" by linemen and their calls for "intelligent pruning" were part of this campaign for professional standards.⁵²

Beyond the move to municipal control and professional standards, the OHS campaign suggested a new esthetics.⁵³ William Saunders had favoured large forest trees like the elm and the sugar maple. As director of Ottawa's Central Experimental Farm, Saunders managed an arboretum, and his choices reflected his interest in forestry and his knowledge of this park-like setting. The forest tree that was a magnificent specimen in a park or along a broad avenue was not, however, well suited to the congested urban streets. The Ottawa Horticultural Society's recommendations reflected a new emphasis on control and management: on order, regular spacing, even size, and uniform planting—a shift toward the kind of symmetry and geometric order seen in European street trees. This was not nature as other, but rather nature subordinated to the needs of society.

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Table 1: Street tree management in the City of Ottawa, 1920–1939

Year	Trees removed	Trees trimmed	Trees planted	Planting permits (# trees)	
1920/1921	308	2178			
1923	169	392			
1926	38	1229 (+47)			
1928	200	1400			
1933	316	1091		—	
1934	254	808		8 (19)	
1935	221	467	9	11 (15)	
	Dead/ dangerous trees removed	Trees removed at homeowner's request			
1936	129/140	81	738	24	2 (2)
1937	142/106	38	670	1	14 (16)
1938	110/113	28	703		3 (6)
1939	135/138	11	747		3 (5)

Compiled from City of Ottawa, Department Reports, Department of Planning and Works (see note 62).

Unlike trees in their collective identity as forests, which had long been celebrated and feared as something outside of civilization, or park trees, which were idealized as perfected nature, street trees had to conform to the constraints of the urban world.

The need for mastery of the immediate environment might also have been influenced by changes in the larger world between 1909 and 1922: as the impact of the Great War sank in, the easy optimism of the progressive era was giving way to a bleaker world view. City practices in the years after 1922 revealed a growing emphasis on control of street trees.

Tree Control: 1922–1939

After the creation of the Street Tree Policy Committee, the city of Ottawa took a more active role in tree management. At the committee's suggestion, council created "a plan . . . showing a proper system of thinning out or of planting trees" in one central section of the city.⁵⁴ A bylaw passed in 1923 had OHS fingerprints clearly on it. Bylaw 5641 reflected a new attitude to street trees: trees were now allowed on the street on sufferance, but only if they did not interfere with pavements, walks, and sewers. It also reflects a dramatic shift in the role of homeowners, who lost their few remaining proprietary rights. Homeowners were required, as in 1912, to obtain consent of the inspector before planting trees on the street, but now the law specified that their request may be refused if "by reason of the nature of the pavements, walks, sewers, and other works thereon. . . . or in consequence of the extent and nature of traffic thereof . . . the planting of trees thereon would be impracticable, or dangerous to traffic, or constitute a nuisance upon such street." In accordance with the OHS recommendations, trees now had

to be planted nine metres apart, and a long list of fruit-, nut-, and cone-bearing trees were now prohibited: butternut, cherry, chestnut, Manitoba maple, sassafras, walnut, poplar (all kinds), cone-bearing evergreens (all kinds), and willows (all kinds). The inspector, who could enforce symmetry along a street, "may require that all trees proposed to be planted on such street or upon one side thereof, shall be of the same species and variety as the trees, or the greater number of trees, planted thereon." He was permitted to remove all decayed or injured trees, as before, but now healthy trees could be removed on 48 hours' notice with no compensation to the adjacent homeowner.⁵⁵

The city's annual reports are inconsistent, but they suggest that the city was now routinely removing significant numbers of street trees: in the autumn of 1920 and 1921, 2178 trees were trimmed and 308 cut down; in 1923, a total of 392 were trimmed and 169 cut down; in 1926, 1229 were trimmed, 38 cut down, and 47 topped; in 1928, 1400 were trimmed and 200 cut down.⁵⁶ The 1923 bylaw left unresolved the question of the costs of tree removal, and in 1928 council debated whether the homeowner or the city should bear the cost for the removal of street trees. In July it was suggested that homeowners pay the cost plus 15 per cent, and in August they were granted permission to cut the trees themselves under supervision of the inspector of trees.⁵⁷

In 1930, the city hired Richard F. Waugh as superintendent of the Parks and Trees Branch (Community Services) within the Department of Planning and Works, and delegated to him the responsibility for removing all dead and dangerous trees, as well as other trees at the request of the homeowner.⁵⁸ In 1932



Figure 7: Laurier Avenue, circa 1948. This is one of a series of photos taken for the Greber Report that emphasize the beauty of street trees and demonstrate their role in disciplining an uneven streetscape.

Greber Report. 251. © National Capital Commission / Commission de la capitale nationale. City of Ottawa Archives, CA 4079

Waugh reported that, after over two years' work, most of the dangerous trees had been dealt with. He then editorialized, and his words confirmed the shift in attitudes toward street trees:

In some sections of the city, the trees have been planted or allowed to grow so close to one another, on an average of 15 feet apart, that they are now causing excessive shade thus prohibiting the growth of grass, shrubbery, and flowers and cutting off desirable light to dwellings, and also interfering with desirable growth and symmetry of form of the trees.

On some streets, trees have been placed in such close proximity to the houses, five to ten feet from the house foundations, that it

is an impossibility to prevent the growth of the tree from interfering with the roofs and allow sufficient light to the windows. It is desirable that trees should be planted not less than twenty feet from the foundation and where the distance is only 12 feet or less from the inner edge of the sidewalk to the house, it would be better not to plant a tree.

Then again, there is the problem with the large growing tree, such as the American elm, growing on an average 60 foot street, causing excessive shade and mechanical interference with sidewalks, overhead wires, and with the roofs of adjoining dwellings. It is my opinion that this particular Elm should only be planted on streets having a minimum width of 100 feet and that whenever

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possible removed on all 60 foot streets and a smaller growing tree planted in its place.⁵⁹

Street trees were nuisances: they blocked light and interfered with roofs. Elm trees in particular were out of favour.⁶⁰ We are nostalgic about the elm today, but at the time the dense overhead canopy on narrow city streets could be oppressive. Waugh's recommendation that elm be limited to streets with a minimum width of thirty metres seems excessive; Clemow Avenue at twenty-five metres was a local example of a beautiful avenue of elms. In 1932, after some debate, council took Waugh's advice to remove an elm on the grounds that "this tree has heaved and cracked the concrete in the said walk by reason of one or more of the large roots expanding under the walk and forcing the concrete upwards. . . . said tree is a veritable nuisance."⁶¹

In subsequent years Waugh limited himself mainly to statistics, listing the numbers of trees trimmed, removed and planted. Waugh's campaign continued until the end of the Second World War: as Joann Latremouille has observed, over 4,000 street trees were cut down between 1921 and 1945.⁶² The numbers are dramatic, but should be read with some caution, as there is little in the city records in the way of context.⁶³

In 1956 street trees were placed under the jurisdiction of Parks and Recreation, and in 1958 a "well qualified arborist" was hired and a report prepared and presented in 1962. The authors tried to be tactful about earlier efforts—"No criticism of any kind is intended in this report"—but the shift in tone is dramatic: the emphasis in 1962 is on reforestation, conservation, nurseries, and the "safeguard" of street trees.⁶⁴ Blame was placed upon the citizens, "the great majority of people of Ottawa who have never stopped and tried to visualize what their City would be without shade trees."⁶⁵

The campaign for the municipal control of street trees waged by the Ottawa Horticultural Society reflected more than the horticulturalist's desire for mastery over the natural world. It was a response to several intersecting forces: the maturation of large street trees planted in the late nineteenth century; the concomitant rise of the profession of arboriculture; and the increased competition for space on city streets with sidewalks, paving, and utility wires. The response the OHS received from council, and the numerous requests by homeowners for the removal of their trees, suggests that their concerns were widely shared. Trees that loomed over narrow streets, lifted sidewalks, blocked chimneys, and broke electric wires represented nature run amok. In a period still reeling from the Great War, and then struggling with the Depression, there was a need to reassert control, if only over the tree in the street.

Notes

1. Blodwen Davies, *The Charm of Ottawa* (Ottawa: McLeod and Stewart, 1932), 15. This paper is part of a larger ongoing project on the urban forest, focused upon Ottawa. Thanks to Craig Huff, city forester, City of Ottawa, Serge Barbe and Serge Blondin of the City of Ottawa Archives, and Kim Nixon, National Air Photo Library, for their assistance with research.
2. "A Civic Policy for the Control of Street Trees," Ottawa Horticultural Society (OHS) Records, *Annual Reports and Programs, 1917–1937* (Ottawa: OHS, 1922), 33, 19-0-8-E, R27, Library and Archives Canada (hereafter cited as LAC).
3. Thomas J. Campanella, *Republic of Shade: New England and the American Elm* (New Haven: Yale University Press, 2003); H. W. Lawrence, "From Private Allee to Public Shade Tree: Historic Roots of the Urban Forest," *Armidia* 57, no. 2 (1997): 2–10; "Changing Forms and Persistent Values: Historical Perspectives on the Urban Forest," in *Urban Forest Landscapes: Integrating Multidisciplinary Perspectives*, ed. G. A. Bradley, (Seattle: University of Washington Press, 1995); "The Greening of the Squares of London: Transformation of Urban Landscapes and Ideals," *Annals of the Association of American Geographers* 83 (1993): 90–118; "The Neoclassical Origins of Modern Urban Forests," *Forest and Conservation History* 37, no. 1 (1993): 26–36; and "The Origins of the Tree-Lined Boulevard," *The Geographical Review* 78, no. 4 (1988): 355–374.
4. Peter C. Baldwin, *Domesticating the Street: The Reform of Public Space in Hartford, 1850–1930* (Columbus: Ohio State University Press, 1999).
5. Cited, for example, on a text panel at the lumber shanty at the Museum of Civilization.
6. Ellen Frances Stroud, "The Return of the Forest: Urbanization and Reforestation in the Northeastern United States" (PhD diss., Columbia University, 2001).
7. Adam Rome, *The Bulldozer in the Countryside: Suburban Sprawl and the Rise of American Environmentalism* (Cambridge: Cambridge University Press, 2001). Rome links the rise of environmentalism to the loss of open space near suburbia and notes in the outline for figure 9 that the loss of woodlands evoked the strongest response.
8. For the involvement of the governors general in city beautification, see David L. A. Gordon, "From Noblesse Oblige to Nationalism: Elite Involvement in Planning Canada's Capital," *Journal of Urban History* 28, no. 1 (Nov. 2001): 3–34.
9. I have chosen to use the common names for trees, following the sources.
10. Seaton Findlay, *Capital Woodlands: A Field and Armchair Guide to Ottawa's Urban Woodlands and Wooded Areas* (Ottawa: Penumra Press, 2001). A surveyor described the Ottawa forests in 1779: "The timber is in general tall and straight without any underbrush and I should suppose a man would be able to clear in the American method an area fit for seeding in eight days." Quoted in Wilfred Eggleston, *The Queen's Choice: A Story of Canada's Capital* (Ottawa: National Capital Commission, 1961), 70. For paintings, see Edwin Whitefield's *Ottawa City, Canada West*, Acc. 1986-49-1, LAC, and Thomas Burrows's 1812 painting held by the Art Gallery of Ontario, no. 12 (reproduced in Bruce S. Elliott, *The City Beyond: A History of Nepean, Birthplace of Canada's Capital, 1792–1990* [City of Nepean: Nepean, 1991], 92). Paintings and sketches may exaggerate the tree cover: one artist claimed no artistic licence, "not even that of putting in a few trees, where no trees grow, for the sake of effect." *Hunter's Ottawa Scenery* (Ottawa: Hunter, 1855), 15. Herm. Brosius, *Bird's Eye View of the City of Ottawa, Province, Ontario, 1876* (1876; repr.; Public Archives of Canada, 1976) shows a few street trees on downtown streets, such as Bay, Albert, and Slater; Lombardy poplars around the Basilica of Notre Dame, large trees on Major's Hill Park, and woodlands (probably second growth) behind Parliament Hill, by Patterson Creek and in what is now northwest Centretown. For trees on Parliament Hill, see the photographs in Commonwealth Historic Resource Management Ltd., *The Landscape of Parliament Hill: A Collection of Illustrations*, Report to Public Works Canada, submitted Oct. 1990, National Capital Commission Library. The description of the fifty-hectare site is from Stewart Letterbook, no. 304, LAC, quoted in Elliott, *The City Beyond*, 89. For bush in low-lying areas, see the descriptions of Stewart's Bush, Elliott, *The City Beyond*, 129. For stumps on the streets, see Robert Haig, *Ottawa: City of the Big Ears* (Ottawa: Haig and Haig, 1970), 95: "The eastern section of Daly Avenue is impassable [in 1850] due to the great number of tree stumps still not removed." For dynamiting 4,000 to 5,000 stumps at the Central

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- Experimental Farm, see T. H. Anstey, *One Hundred Harvests, Research Branch, Agriculture Canada 1886–1986* (Ottawa: Government of Canada, 1986), 12. For G. Doré's photograph of eastern white pine tree stumps in Dow's Lake, see Harry and Olive Walker, *Carleton Saga* (Ottawa: Runge, 1968).
11. *Union* (1865), quoted in John Taylor, *Ottawa: An Illustrated History* (Toronto: J. Lorimer, 1986), 64.
 12. Cited in "Ugliness Is Not Necessary," a speech given by Vincent Massey, to the Tenth Anniversary of the Community Planning Association of Canada, 29 Oct. 1956. This observation is difficult to reconcile with Campanella's statement that "most American cities—including those of New England—remained woefully barren of street trees until well into the nineteenth century," *Republic of Shade*, 110, and Bernard Fernow's observation in 1910 that the planting of street trees had taken place over the last fifty years, i.e., from 1860. See Bernhard E. Fernow, *The Care of Trees in Lawn, Street and Park* (New York: Henry Holt, 1910), 4.
 13. City of Ottawa Bylaw 275-1869. There was an earlier bylaw protecting trees: in 1847, the town council of Ottawa's predecessor, Bytown, passed a bylaw that no one should "injure or destroy any tree or trees planted or growing in any street, or on any public ground within the said Town, for shade or ornament." Section 11, bylaw no. 3, *Bylaw To Prevent Nuisances*.
 14. William Pittman Lett, *The City of Ottawa and Its Surroundings*, written in accordance with a resolution of the City Council (Ottawa: 1884), 14.
 15. Anson Gard, *The Hub and the Spokes: The Capital and Its Environs* (Ottawa: Emerson, 1904), 35.
 16. The 1890 bylaw explicitly prohibited planting except in front of a dwelling house.
 17. See photos in the LAC: Monkland Avenue, PA10964; Metcalfe Avenue, "Metcalfe 1907," C94253; "Laurier Avenue," PA 34378 (n.d.). The City of Ottawa photograph collection holds numerous streetscapes, including an excellent series of images of Metcalfe (CA5076; CA0279; CA1591; CA2976; CA40530). The reports of the Ottawa Improvement Commission, particularly those published in 1912 and in 1925, include photographs of ceremonial driveways. For postcards see the postcard collection, Ottawa Room, Ottawa Library, especially "Laurier Avenue and All Saints Church," n.d., "Canadian Building at Albert St.," and "Metcalfe St. showing the new museum, Ottawa" (likely ca. 1912, the year the museum was built).
 18. *Ottawa: Canada's Beauty Spot* (London: British Photogravure, [1911–1916?]); the reference is on the last pages.
 19. The 1890 bylaw was specific: trees were to be located in boulevards or in a clearly defined location "at or within the distance of two feet (at the most) from the sidewalk nearest to the carriageway."
 20. *An Act To Encourage the Planting of Trees upon the Highways of this Province and To Give a Right of Property in Such Trees to the Owners of the Soil adjacent to Such Highways*, Province of Ontario, 34 Vic, Cap. 31. Assented to 15 Feb. 1871. The term *highway* included streets, and even alleys. The law did not apply to incorporated cities unless they passed a bylaw to that effect.
 21. See the *Act Respecting Municipal Institutions in the Province of Ontario, 1873*, S.O. c. 48, s. 372 (19), the *Ontario Municipal Act*, R.S.O. 1877, c. 174, s. 16, and subsequent municipal acts.
 22. City solicitor to Alderman H. S. Cameron, Re: Supervision of Trees, 16 Mar. 1911, microfilm, City of Ottawa Archives.
 23. "Your board recommends that Mrs. Morgan's offer of \$70 for the right to remove the trees planted in front of her property, which obstruct the sidewalk on Bank St. between McLeod and Argyle, be accepted and that the Engineer be instructed to have said trees removed and the cost charged to Central Ward appropriations." City of Ottawa Minutes, 1895, report 9 of the Board of Works, p. 216. See also Report 17, 1895, in which Mrs. Mary Wilson's claim for five trees removed for asphalt paving was refused, and Report 13, p. 274, in which trees were removed for the electric streetcar. Similar claims were made in subsequent years.
 24. City Solicitor to Alderman H. S. Cameron, Re: Supervision of Trees, 16 Mar. 1911, microfilm, City of Ottawa Archives.
 25. A study connecting Frederick Law Olmsted's work in hospital administration to his career as a landscape designer, by Bonj Szczygiel and Robert Hewitt, shows that reformers understood street trees to reduce miasma by taking up ground water, reducing the release of gases, moderating temperatures, and absorbing noxious gases through their foliage. Bonj Szczygiel and Robert Hewitt, "Nineteenth-Century Medical Landscapes: John H. Rauch, Frederick Law Olmsted, and the Search for Salubrity," *Bulletin of the History of Medicine* 74, no. 4 (2000): 708–735. Similar effects are now measured by the Urban Forest Effects Model (UFORE), a tool developed for the USDA Forest Service. For an introduction to the science and an updated list of references, see Urban Forest Effects Model, <http://www.ufore.org>. For related research in Canada, see W. Andrew Kenney, "Leaf Area Density as an Urban Forestry Planning and Management Tool," *Forestry Chronicle* 76, no. 2 (2000): 235–239.
 26. A. H. D. Ross, *Ottawa Past and Present* (Ottawa: Thorburn and Abbott, 1924).
 27. Frederick Todd, Preliminary Report to the Ottawa Improvement Commission (Ottawa: OIC, 1903), 35.
 28. File of Annual Reports and Programmes, 1922, p. 33, OHS Records, 19-0-8-E, R27, LAC.
 29. Saunders oversaw the planting of 14,000 trees and shrubs for the OIC in 1904. [Sir Henry N. Bate, chair], Report of the Ottawa Improvement Commissioners (Ottawa: 1904). His advice on street trees can be found in lecture notes, "Forest Problems in Canada," Saunders Family Papers, vol. 13, RG 17, LAC.
 30. Balm of gilead (*Populus balsamifera*) also released quantities of cottony seeds. Mountain ash was added to this list in 1912 in bylaw 3378-1912, and in 1923 bylaw 5641 prohibited a number of trees that might drop fruit, nuts, or cones.
 31. In 1903 the City of Ottawa included 100.49 miles of streets: 4.9 were asphalted and 0.47 paved with tar macadam. The rest were mainly unpaved or macadamized—paved with layers of aggregate, tamped down. Both these surfaces were permeable and, except for compaction, provided a relatively good environment for tree growth. For the history of street paving, see Baldwin, *Domesticating the Street*, and I. B. Holley Jr., "Blacktop: How Asphalt Paving Came to Urban United States," *Technology and Culture* 44, no. 4 (2003): 703–733.
 32. See note 25.
 33. *City of Ottawa Departmental Reports for 1939*.
 34. Annual Report of the City Engineer, *City of Ottawa Departmental Reports for 1903*, 96.
 35. Baldwin, *Domesticating the Street*.
 36. For membership figures, see OHS Minutes of Meetings, p. 275, 19-0-8-E, R27, LAC. Macoun was president of the OHS in 1899, continued to sit on the board as ex officio member, and edited the short-lived journal *Ottawa Horticulturalist* in 1911.
 37. Fred Pine, "The Story of the OHS," p. 57, M 0806, O-X-E, R7628, LAC. Pine compiled an anecdotal history of the society from newspaper records after the loss of the first thirty-five years of OHS records in a fire. In 1900 the council had passed a motion that the Parks Committee be required to take charge of the trimming of the trees in all the streets of the city. (City of Ottawa Minutes, 1900, p. 190.)
 38. City of Ottawa Departmental Reports for 1909, p. 114.

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39. Clause 6, Report 19 of the Board of Control, City of Ottawa Minutes for 1914: "The city engineer having reported the necessity of appointing a qualified Tree Inspector as he finds it impossible to attend to this matter."
40. OHS Minutes of Meetings, 1916, p. 181, 19-0-8-E, R27, LAC.
41. City of Ottawa Minutes, 1916, pp. 80, 119, 133.
42. City solicitor to Alderman H. S. Cameron, Re: Supervision of Trees, 16 Mar. 1911, microfilm, City of Ottawa Archives.
43. For the booster supper, see the pamphlet "Programme of the Annual Course of Lectures, OHS 1920," inserted in the OHS file, 1912–1922, pp. 408–409, and the accompanying notes on p. 411, 19-0-8-E, R27, LAC; and "Street Tree Policy Urged for Ottawa," *Ottawa Citizen*, 16 Apr. 1920. The *Citizen* reported attendance of 300; the OHS notes refer to 233 guests.
44. "A Civic Policy for the Control of Street Trees," OHS Records, Annual Reports and Programs, 1917–1937, p. 33 (dated 1922), 19-0-8-E, R27, LAC.
45. J. Johnson, foreman, Parks Division, Report on Tree Trimming and Cutting, City of Ottawa Departmental Reports for 1921, p. 178.
46. Director's Meeting 28 Oct. 1920, OHS, Minutes of Meetings, p. 424, 19-0-8-E, R27, LAC. An undated clipping from the *Citizen* included here in the OHS minutes refers to a talk on shade trees given by W. B. Varley, in which he advised on uniform planting and referred to the movement to have a satisfactory bylaw enacted. Dr. Grisdale's address is described in the OHS Minutes, p. 451: "Lecture Course, Normal School, April 15, 1921," 19-0-8-E, R27, LAC.
47. "A Civic Policy for the Control of Street Trees," Annual Reports and Programs, 1917–1937, OHS Records, p. 33 (dated 1922), 19-0-8-E, R27, LAC.
48. City of Ottawa Minutes 1922, 6 Mar. 1922, p. 111. The committee appears in city records variously as the Tree Committee, the Civic Tree Committee, the Parks and Tree Committee.
49. Membership is recorded in the City of Ottawa Minutes, and included, in addition to the core members, 1930: Walter Cunningham, George H. Dunbar (who later became an alderman); 1931: Mrs. John Bryson; 1932: Walter Cunningham, A. K. Stewart, Mrs. James Murdoch; 1933: Mrs. James Murdoch, W. H. Perrault, Mrs. B. G. Robinson. Other city staff, such as Mr. Proctor, the city solicitor, and Mr. Nelson, the superintendent of streets, attended meetings. See Minutes of Special Committee Meetings, 1880–1936, microfilm, City of Ottawa Archives. For Macoun's central role, see the motion of condolences to Macoun's family on his death, noting that he "for several years, served this city as a member of the tree committee and as such made his life felt in the community." City of Ottawa Minutes 1933, 21 Aug. 1933.
50. See Richard J. Campana, *Arboriculture: History and Development in North America* (Lansing: Michigan State University Press, 1999). Campana notes that the Davey Company was asked to care for trees on Parliament Hill in Ottawa (p. 105). The Shade Tree Conference first met in 1924, with both commercial arborists and scientific specialists; 1932 saw the creation of a professional association, the American Society of Arborists.
51. Fernow, *The Care of Trees*, 4. William Solotaroff, *Shade-Trees in Towns and Cities* (New York: John Wiley and Sons, 1911).
52. Solotaroff described enabling legislation recently passed in New Jersey, Pennsylvania, and Massachusetts. See also Campanella, 141–146.
53. Evan D. G. Fraser and W. Andrew Kenney have shown that attitudes to urban trees are culturally contingent in a comparison of immigrant neighbourhoods: "Cultural Background and Landscape History as Factors Affecting Perceptions of the Urban Forest," *Journal of Arboriculture* 26, no. 2 (Mar. 2000): 106–113.
54. Records remain for only two of the advisory committee meetings. On 22 April the advisory committee recommended a survey be done. On 17 July, council recommended that \$500 be transferred to the parks account for a survey, and the money is identified in the 1922 Departmental Reports (p. 178), although the results do not appear in city records. On 19 April 1922 the advisory committee asked the city solicitor if the city had power to pass a bylaw compelling residents to obtain a permit before planting trees on city streets; his reply is not recorded, but the 1912 bylaw wording was left unchanged. By the 1930s a permit system appears to have been in place. (See table 1). 19 Apr. 1922 meeting of the Civic Tree Planting Committee, Minutes of Special Committee Meetings, 1880–1936, microfilm, City of Ottawa Archives. City of Ottawa Minutes of 1922, 6 Mar. 1922, p. 397.
55. This represents a shift from the 1912 bylaw that did not permit the removal of a healthy tree unless there was another tree within nine metres.
56. City of Ottawa Departmental Reports for 1922, 1923, 1926, and 1928. In 1922 and 1923 the work was done by J. Johnson, the foreman of Parks Division; in 1926 the superintendent of streets included the work in his report. There is no report by either of these men for the other years.
57. City of Ottawa Minutes for 1928, 3 July and 20 Aug.
58. Waugh appears on staff only in 1930, although he refers to tree-trimming since 1929 in his report for 1932. City of Ottawa Department Reports for 1932.
59. City of Ottawa Department Reports for 1932. See also his editorial comments in City of Ottawa Departmental Reports for 1930, p. 663.
60. Curiously, although Campanella describes a tree warden who spoke against "weedy" elm trees (p. 144), he does not describe a general shift in attitude toward the elm.
61. City of Ottawa Minutes 1932, 4 Apr. 1932, 18 July 1932.
62. For annual numbers, see Julian Smith and Associates, *Sandy Hill West Heritage Conservation District Study* (Ottawa: September 1993), B10–B12. Joann Latremouille, landscape architect and historian for this report, brought these figures to my attention.
63. The number of trees removed was probably accurately recorded because the associated costs were substantial. Although preliminary observations of aerial photographs from these decades do not show a significant loss in tree canopy at this time, a block-by-block analysis of the inner city may reveal more significant local impact. It does, however, seem unlikely that no trees were planted on city streets between 1920 and 1934; a call for a permit system for tree planting in 1922 (see note 54) suggests that the city did not need to plant trees, because residents continued to do so. Waugh also refers to the trees trimmed by utility companies under his supervision.
64. J. Alph Dulude, "Shade Trees and Parklands: Planting, Cultivation and Preservation," September 1962, 2, part 3, Specific Surveys and Policies, City of Ottawa Departmental Reports. Submitted to the City of Ottawa Recreation and Parks Committee by the Commissioner of Recreation and Parks.
65. *Ibid.*, 9.