

Frederick Augustus de Zeng: Glass Pioneer in Canada

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Résumé

Entrepreneur américain d'origine allemande, le baron (plus tard major) Frederick Augustus de Zeng (1757-1838) a été le premier à tenter d'établir une verrerie au Canada. Il a reçu une concession spéciale à l'embouchure de la rivière Indian, sur le lac Rice, dans l'actuel canton d'Otonabee (comté de Peterborough, Ontario). Mais il a d'abord établi son exploitation sur une péninsule voisine, où se trouve aujourd'hui le parc provincial de Serpent Mounds.

Le major de Zeng avait une vaste expérience de la fabrication et du transport du verre dans les régions nouvellement colonisées. Aussi ses projets étaient-ils solidement étayés. Il existait déjà de bons marchés pour le verre à vitre et la région immédiate venait de s'ouvrir à la colonisation. En outre, de Zeng n'avait pas de concurrent. Il avait accès aux capitaux et à la main-d'œuvre voulus, ses terres ne lui coûtaient à peu près rien et à proximité du lieu choisi se trouvaient d'abondantes réserves de bois utilisable comme combustible et les matières brutes nécessaires à la fabrication du verre. Le gouvernement songeait aussi sérieusement à l'époque à améliorer la navigation sur la rivière Trent.

Néanmoins, en 1820, après toute une saison de travail, de Zeng s'est soudainement vu retirer sa concession par le gouvernement; il a de ce fait perdu son investissement et sa maison. Les froides raisons qui lui ont été données semblent des plus discutables et de Zeng lui-même a attribué son infortune à un sabotage orchestré par des intérêts locaux. Indirectement, il semble avoir été victime des grands conflits politiques et sociaux qui ont marqué cette période d'après-guerre en Ontario.

Abstract

German-born American entrepreneur Baron (later Major) Frederick Augustus de Zeng (1757-1838) was the first to attempt to establish a glass industry in Canada. He received a special grant of lands along the Indian River at its mouth on Rice Lake, in what is now Otonabee Township in Peterborough County, Ontario, but began his operations on a nearby peninsula, which is today the site of Serpent Mounds Provincial Park.

Major de Zeng had wide experience in glass making and transportation in frontier situations, so his plans were predictably sound. Good markets for window glass were already present and the immediate region was just being opened to settlers. Moreover, he effectively had no competition. He had access to adequate capital and labour, his lands were virtually free, and his chosen site was near plentiful stocks of timber for fuel and to the raw materials needed for glass. At the same time, the possibility of a Trent Canal was first emerging.

Nevertheless, in 1820, and after a full season of work, de Zeng's grant was abruptly cancelled by the government, causing him to lose both his investment and his home. The terse reasons given for this action appear to be spurious and de Zeng himself attributed his misfortune to sabotage by local interests. Indirectly, it seems he was a victim of the larger political and social conflicts which marked this postwar period in Ontario history.

After dinner we hired a skiff and proceeded on our voyage. The lake was calm, so we made good progress, passing the Indian village belonging to the Mississauga tribe of Indians...Pantaush's point, Designs Bay, and the embouchure of the Indian River.¹

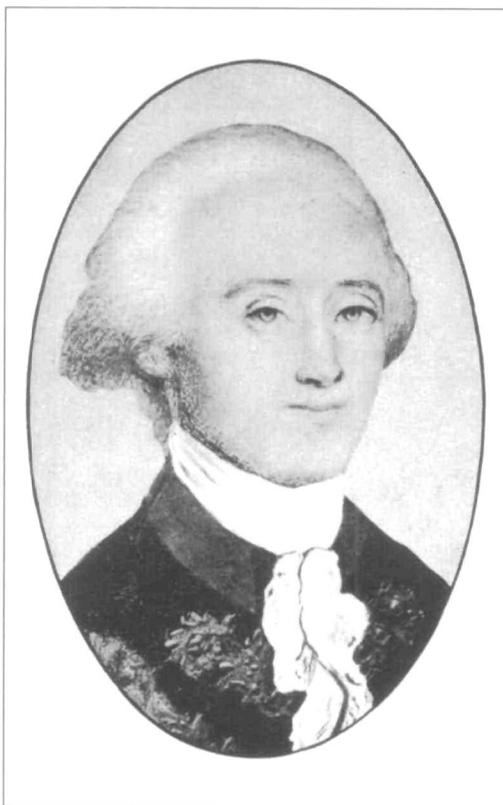
This excursion, taken by Samuel Strickland in October 1825 and described in his Canadian

classic *Twenty-Seven Years in Canada West*,² furnishes the earliest known published clue to an intriguing and hitherto unknown part of Canadian material culture: the first attempt to establish a glass factory in Canada.

The first successful glassworks in this country was operated by Amasa W. Mallory from about 1839 to 1840 on a site located

Fig. 2

Major Frederick Augustus de Zeng (1757–1838), in Hessian officer's uniform. In 1819 he proposed what would have been, by far, the first glass factory in Canada. Lithograph by Wayne Morrison from an 1890s photograph of a portrait (ca 1780), locations of both unknown. (Wayne E. Morrison & Co., Ovid, N.Y., by permission)



known yet to establish a glass factory in Canada, including a selected biography of the proponent, a technical description and evaluation of his proposal, a summary of the outcome of his scheme, and a concluding discussion.

The Entrepreneur

Frederick Augustus, Baron de Zeng, was born 7 April 1757 in Dresden, Saxony, son of the High Forest Officer to the King of Saxony. He received a military education.⁷ In late 1780, he arrived in New York as captain in a regiment of German ("Hessian") mercenary troops aiding the British in the American War of Independence. De Zeng received an honourable discharge from the German command late in 1783 and remained in the United States after the war. He became an American citizen in 1789, whereupon he dropped his hereditary title. In 1792, he was commissioned major commandant of a battalion of militia in Ulster County, New York, thereby acquiring the title by which he was known the rest of his life.⁸

Major Frederick de Zeng is a familiar and well respected figure to many in the United States today, judging by entries on de Zeng in two encyclopaedias,⁹ special treatment of him in a number of general and specialized historical works,¹⁰ and the author's conver-

sations with several New York historians. Surprisingly, however, there is almost no record of the final two decades of his life (1818–1838) and, until now, none at all for the relevant period he spent in Canada from 1818 until 1821 at least. This blackout extends even to the complete omission from his genealogical record of his second family, which he probably started in Canada. In fact two published genealogies¹¹ faithfully record Frederick's marriage in 1783 to Mary Lawrence and their nine children born between 1786 and 1802, but mention neither his second marriage to American-born Wealthy Amanda Seaton in or prior to 1819, nor their three children born between about 1819 and 1823.

Frederick de Zeng, as co-owner in charge of operations, was the first large window glass manufacturer in the United States.¹² In 1796 he and his partners in the Hamilton Manufacturing Society took over and expanded a short-lived glassworks and formed the town of Hamilton (now Guelderland), 20 kilometres west of Albany.¹³ By 1802, however, de Zeng was proposing another glass factory, this time on the Sawkill River in the Catskill Mountains at Shady, near Woodstock.¹⁴ In 1812 he was superintendent of the new Ontario Glass Manufacturing Company at Geneva, New York.¹⁵ The directors soon concluded, however, that not even Frederick's "age, character and experience could cause the company to prosper and be profitable."¹⁶ (This manufacturing operation is used later for comparative purposes.¹⁷)

De Zeng is equally known for his work in all aspects of transportation. During 1790–92 he personally surveyed the entire backcountry from Albany to the Genesee River around present-day Rochester. Later he was connected with General Philip Schuyler in establishing and carrying on the Western Inland Lock Navigation Company¹⁸ (established in 1792), whose improvements in the Mohawk River valley foretold the great Erie Canal. Employed by Schuyler from 1793–95 at Little Falls, de Zeng was in charge of the 300 workmen¹⁹ building the first lock, which today is the oldest preserved lock in the United States.²⁰ At Woodstock, he planned and promoted what became the Glasco²¹ and Ulster and Delaware turnpikes, to link his proposed glasshouse with the Hudson and Delaware rivers respectively.²² In 1812 de Zeng championed the Cayuga and Seneca Canal,²³ which by 1818 gave Cayuga and Seneca lakes access to tidewater via natural streams and later the Erie Canal.²⁴ To link these same interior waters with Pennsylvania and the south, in 1814–15

he started what ultimately became the Chemung Canal.²⁵

It appears de Zeng was trilingual (English, French, and German), and that he could also communicate well with the Indians. In fact, he was commissioned in 1794 to deal with the Indians of the Oneida, Onondaga, and Cayuga Nations in regard to their reserved lands.²⁶ His character explains much of his success, especially his congenial nature, his energetic and enterprising spirit, and his abundant self-confidence. Inevitably he rose into some of the highest circles in early America, his friends and associates including, besides Schuyler, Baron Frederick William von Steuben, Chancellor Robert Livingston, and Governor George Clinton.

In 1815 de Zeng purchased all the land for, and founded, the present town of Clyde, New York,²⁷ perhaps speculating on the construction of the Erie Canal (built 1817–1825). Then in 1818 he built a dam there across the Clyde River and erected saw and grist mills.²⁸ A single silver spoon, engraved “FADZ,” and “Auburn [NY] 1818,” and still in the possession of his Canadian descendants, suggests de Zeng’s affluence in this decisive year and perhaps heralds his impending removal to Canada from his home at Bainbridge in Chenango County²⁹ on the Susquehanna River.

His Proposal Land and Location

“He has ever since August last [1818] spared no pains or expences to discover the best spot in so many respects for the contemplated establishment,”³⁰ Frederick de Zeng “of Smith’s Creek”³¹ (now Port Hope) in Upper Canada would write of himself on 6 March 1819. He was petitioning for a special grant of lands “to establish a window glass manufactory,” as he was “desirous to spend the remainder of his days in the dominions of His Britanic majesty.”³²

In support of the factory, he noted, a sawmill and stamping mills (“for the use of stamping the materials for making and building Furnaces & Crusibles &.&.”) would be essential. “to which a gristmill will be added for the convenience of the workmen (as well as to keep them at home at their work).” Failing this, de Zeng asked to be “considered only as all other emigrants are—, wishing to settle and remain as a farmer & miller in His Majestys dominions.”³³ De Zeng was proposing to establish a small industrial community.

On 11 March, just five days later, the

following decision in favour of 61-year-old Major de Zeng was taken in York (now Toronto) by Sir Peregrine Maitland, the Lieutenant Governor of Upper Canada, in Council:

Granted permission to locate Five hundred Acres [202 hectares] as a Settler, to receive a Grant for the same after Seven Years provided he erects a Saw and Grist Mill thereon.

A Reserve of three thousand Acres [1214 hectares] in the neighborhood for the use of any Works he may Erect, to be leased on easy Condition of Nominal rent. In the Event of Petitioners decease before the end of Seven Years, having conformed to the Term of the present Order in his favor, it is expressly understood that his heir at Law or Devisee shall receive the benefit thereof

One hundred Acres [40 hectares] to each Head of the Family foreign Protestants [i.e., his workers] after residence of Seven Years.³⁴

The residency requirement in this order relates to the fact that only British citizens could then own land in the colony of Upper Canada; the naturalization period for citizens of the United States was seven years.³⁵ De Zeng was resident “from the day of the order in question.”³⁶ To be considered for a grant in the first place, de Zeng would also have had to swear oath of allegiance to the British Crown,³⁷ which he did.³⁸

The general location proposed for his enterprise is only vaguely described by de Zeng in his petition, reflecting the absence of a township survey. The entire region was wilderness that had only just been acquired by treaty from the Mississaga Indians on 5 November 1818.³⁹ Later information, however, places his proposal in the valley of the Indian River⁴⁰ near its mouth on the north shore of Rice Lake, in what then was the Newcastle District of Upper Canada and what today is Otonabee Township in Peterborough County, Ontario.

The survey for Otonabee Township was completed by Richard Birdsall on 8 December 1819,⁴¹ enabling for the first time a clear description of the proposed 500-acre (200-hectare) glassworks site.⁴² The core was the water-power site (“mill seat”) located on lot 15 in concession VI (200 acres/80 hectares), between the present village of Keene and the Lang Pioneer Village to the north.⁴³ The remainder almost certainly included the adjacent lots 14 (200 acres/80 hectares) and western half of lot 13 (100 acres/40 hectares).⁴⁴

Unfortunately, de Zeng was forced by circumstances to make “his first stand” on a



Fig. 3

View south from the dam (see Fig. 7) on the Indian River in Otonabee Township, concession VI, lot 15. This river was only ever navigable to about lot 13, 0.6 miles (1 kilometre) below the dam.

peninsula on Rice Lake, in concession VII of Otonabee, several kilometres overland from the site of the proposed glass factory. His intention was to make a sheltered landing in de Zeng Bay⁴⁵ (now McGregor Bay) for cargo boats, very likely at the present broken lot 8 (139 acres/56 hectares)⁴⁶ back from the tip of the peninsula.⁴⁷ However, he actually started his operations on what became broken lot 7 (50 acres/20 hectares),⁴⁸ the eponymous de Zeng Point⁴⁹ (now Roach Point), in Serpent Mounds Provincial Park.⁵⁰ De Zeng's entitlement to these new lots, 7 and 8, was the loyalist right to 400 acres (162 hectares) he purchased⁵¹ from brothers Duncan and Jacob Van Allstine.⁵²

Raw Materials

The Otonabee site was well situated with respect to the raw materials needed for glass manufacture. This especially included timber for fuel, as well as the three main constituents of basic glass: silica (in the form of sand), an alkali (soda ash or potash), and lime.

Large quantities of timber would be needed for fuelling the furnaces, either as fuel wood or processed into charcoal,⁵³ as a source material for potash and, converted into lumber, for crates and general construction. In fact many glass factories of the period eventually closed for want of timber⁵⁴ and in Europe, glassworks were still generally considered forest industries.⁵⁵ De Zeng projected his wood requirement at 3000 cords per year (7200 cubic metres per year),⁵⁶ which translates into a minimum annual area harvested of 75 acres (30 hectares).⁵⁷ At this rate, his 3000 acres (1200 hectares) of leased woodlands represented as much as 40 years' wood supply. By comparison, the Geneva glasshouse owned exactly half this amount of timberland, or 1500 acres (600 hectares), when it began in 1810.⁵⁸

The forest resource in Otonabee was not only abundant but of preferred quality. Broad-

leaved species, desirable as fuel because of their high energy value, predominated. Richard Birdsall's 1819 logbook for the survey line between concessions VI and VII from lots 13 to 15 alone makes reference to maple (sugar), beech, oak (white or red), basswood, elm (white), and black ash; the coniferous species, better for construction lumber, were pine (eastern white) and hemlock (eastern).⁵⁹ Nearby settlers were also potential suppliers, especially because grantees were legally bound to clear part of the forest from their property as part of Maitland's "settlement duties."

Reasonably pure silica sand is available throughout this extensive and varied area of glacial drift, certainly adequate for the quality and quantity required for a glass operation in the early nineteenth century. In recent years Otonabee sand has in fact been used by the glass industry,⁶⁰ but for such purpose it does contain enough iron to impart a greenish or brownish tint.⁶¹

A recent map of aggregate resources in Otonabee Township shows deposits consisting mainly of sand⁶² as near as two miles (three kilometres) overland to the east, and much larger deposits directly on the shore of Rice Lake and along the Otonabee River, which could be brought in by boat. One promising source is a deposit of glacial outwash only two miles (three kilometres) east of the mouth of the Indian River; such outwash deposits are noted for uniform distribution of grain sizes (needed for good quality glass) and horizontal bedding (for ease of extraction).⁶³

De Zeng's primary alkali would have been either potash, soda ash made from common salt, or both. Potash (potassium carbonate) can be made by a simple process that involves leaching wood ashes,⁶⁴ which in turn de Zeng could easily have obtained either as a by-product of wood fuel consumption in his own blast furnaces⁶⁵ or from settlers as part of land-clearing operations.

In the early nineteenth century, soda ash was being manufactured from common salt (sodium chloride) by the Leblanc process.⁶⁶ This would probably have been done at the mill site, considering that one of the raw materials at the Geneva glassworks was raw salt.⁶⁷ Salt tended to be imported in general,⁶⁸ but de Zeng's supply might well have been local. In eastern Ontario sea salt is found either trapped in the underlying marine-origin limestone bedrock or in solution, leached from the porous limestone by groundwater. This brine solution is encountered near Otonabee today at depths of 100 to 150 feet (30 to 50 metres).⁶⁹

Natural springs sometimes transport brine to the surface. Indeed, an 1818 map, likely known to de Zeng, clearly identifies “salt springs” down the Trent River from Rice Lake (see Fig. 1). Notes to the “Collins Map” of 1790 identify the location as Percy Boom and confirm that “A Salt Spring discharges into this [Trent] River, Three Gallons of the Water makes one Gallon of Salt, the Natives make great Quantities of it.—”⁷⁰ This is a very high salt concentration, if true.⁷¹

Lime (calcium carbonate) is manufactured from limestone. Surface outcrops of limestone in Otonabee are numerous along the Indian River—but only there—including some directly on the site of the proposed glass factory.⁷² In fact, the geologic formation found here has been quarried elsewhere in the province for use in lime production.⁷³

Capital and Labour

De Zeng’s capital requirements were very large for the time, considering that the Geneva glasshouse, which by 1820 was producing 300 000 to 400 000 ft² (28 000 to 37 000 m²), had been launched 10 years earlier with US \$40 000.⁷⁴ De Zeng’s proposal was nearly as large, 240 000 to 300 000 ft² (22 000 to 28 000 m²), and he was evidently intending to assume all the risk himself. He offers, however, that “there will be no objections whatever made for some respectable person or persons (old inhabitants of this province) to become interested in the same, when more fully understood.”⁷⁵ Unfortunately, by 5 September 1819, he was in urgent need of financial “relief,” and privately appealed (successfully, it appears)⁷⁶ to know from his son “if you [William] give up or not all ideas to be concerned in my improvements here or not.”⁷⁷

De Zeng would also have to import 25 to 30 workers⁷⁸ from the United States and perhaps Germany, because glassmaking required unique skills obviously not yet

available in Canada. For comparison the Geneva operation employed 21 to 22 people, including 10 glass blowers, 2 cutters, 1 mason, 1 pot maker, 1 calciner, 1 pot ash maker, 1 blacksmith, 1 carpenter, and 3 to 4 labourers.⁷⁹

Markets and Transportation

In the United States, the use of glass in windows was becoming widespread by 1790, and by 1820 there were 18 window glass factories.⁸⁰ In Canada in 1820, where the population of Upper Canada alone was about 128 000,⁸¹ Frederick de Zeng would have been the first manufacturer of glass and thus have enjoyed an absolute monopoly. If required, he could

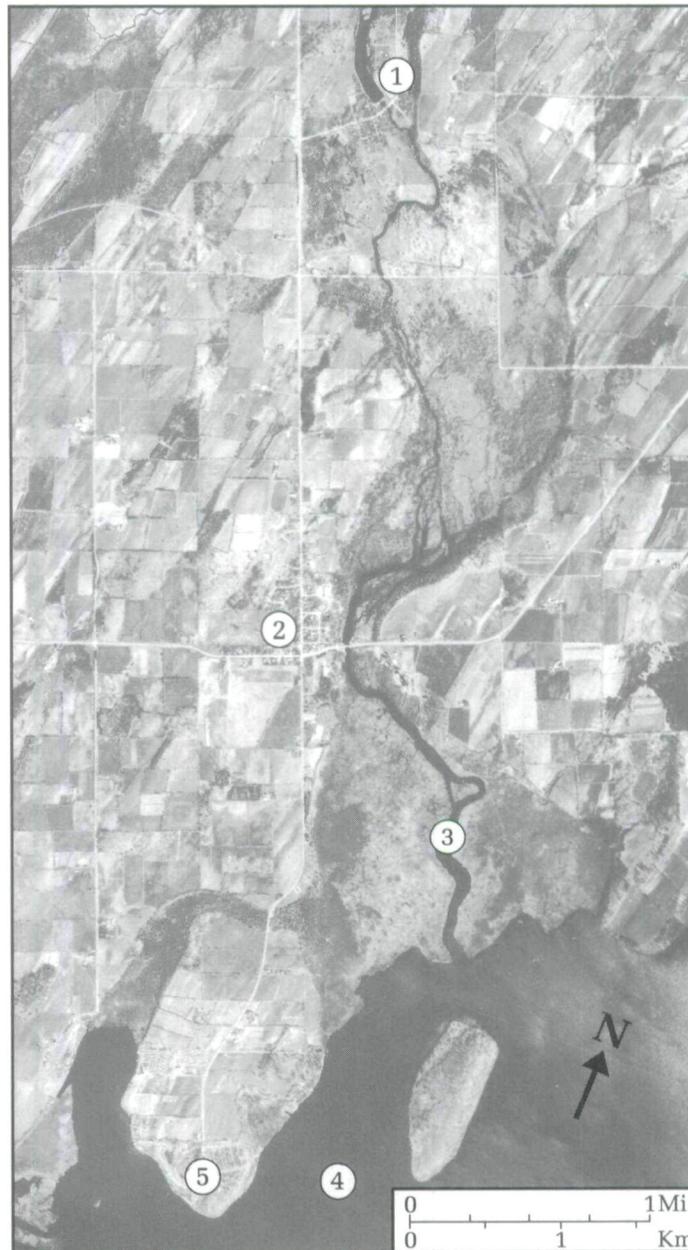
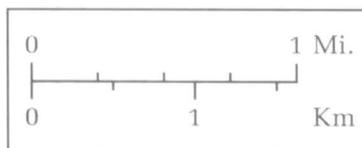
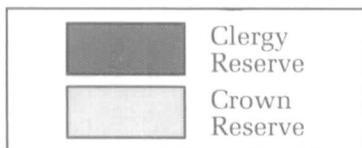
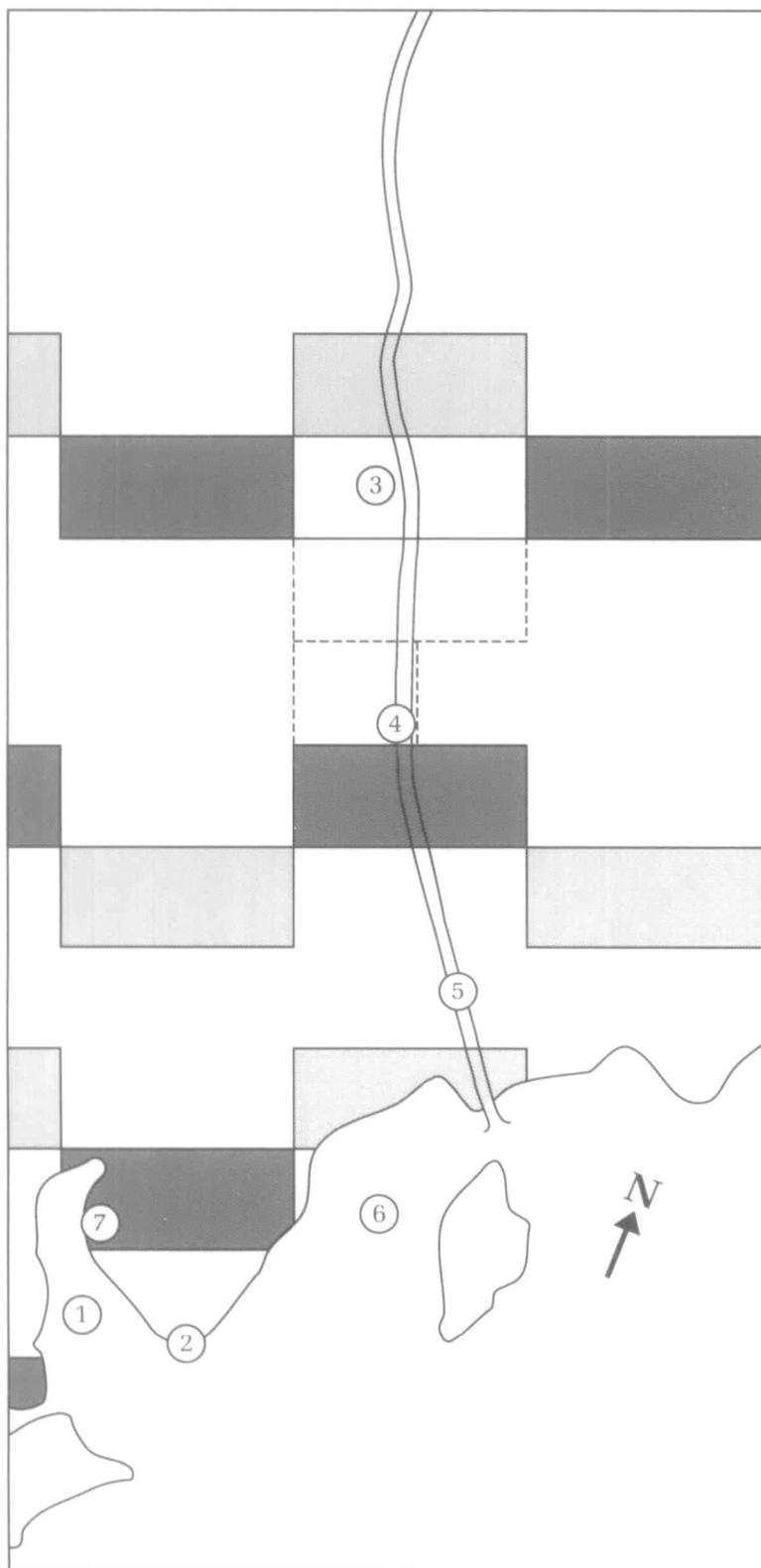


Fig. 4
Aerial photograph of part of Otonabee Township, Peterborough County (corresponding to fig. 5), showing present day water features, the strongly linear, glaciated landscape, and land use, 30 April 1981. (Her Majesty the Queen in Right of Canada, reproduced from the National Air Photo Library with permission of Energy, Mines and Resources, Ottawa, roll A25686, frame 46)

1. Lang Pioneer Village
2. Keene
3. Indian River
4. Rice Lake
5. Serpent Mounds Provincial Park



also have counted on tariff protection from American imports, although half of the established glasshouses in the United States had failed between 1815 and 1820 as a result of a general depression. De Zeng's only nearby competition would have been the one remaining glassworks in western New York, at Geneva, but that factory was already selling two-thirds of its output locally, and its lease in any case had just been acquired (in 1817) by his son William.⁸²

De Zeng's main problem in the young province of Upper Canada was the poor state of transportation.⁸³ To reach settlements along Lake Ontario and points beyond would require transshipment over what were then just trails from the south shore of Rice Lake to either Cobourg (called Hamilton before April 1819)⁸⁴ or Port Hope (called Smith's Creek before 1820),⁸⁵ in either case a distance of about 13 miles (20 kilometres).⁸⁶ Locally, however, de Zeng would have immediate access to about 40 miles (65 kilometres) of navigable water between the present sites of Peterborough and Hastings,⁸⁷ in an area that was just then being surveyed and opened for settlement.⁸⁸ As events unfolded, however, it was 1825 before the total population for all the townships north of Rice Lake would pass 2500.⁸⁹

In the long run de Zeng was confident that "as in all former similar cases" (alluding to his earlier experiences), new settlers would "rapidly follow" the establishment of his factory, which in time he also knew would force improvements to the transportation and communication infrastructure and stimulate further development.⁹⁰ Good waterways would have been especially important for a glass operation at this time and, indeed, defence surveys had already started in 1815 for the purpose of locating a water route through the interior of Upper Canada. In 1819, a survey

Fig. 5

Based on part of the survey map. "Plan of the Township of Otonabee [sic]..." completed by Richard Birdsall on 8 December 1819. (Archives of Ontario, MNR Acc. 18627 #1822)

1. "de Zeng Bay," now McGregor Bay
2. "de Zeng Point," now Roach Point, c. VII, Lot 7, site of de Zeng's residence
3. Core of proposed glassworks site at "mill seat," c. VI, Lot 15. Additional lots 14 and 13-W are downstream.
4. Approximate head of navigation
5. Indian River
6. Rice Lake
7. Probable site of proposed landing, c. VII, Lot 8

Lieutenant James P. Catty proved that no good alternative to the Trent existed, arousing high expectations among settlers that the Trent River-Lake Simcoe route, including Rice Lake, would be chosen.⁹¹ Frederick de Zeng was undoubtedly among the first and strongest promoters of the Trent Canal.⁹²

The Outcome

Problems began for Major de Zeng when he moved to Otonabee some time between March and May 1819 and discovered that his carefully chosen mill site had been made inaccessible to boats, first by timber downed in the Indian River over winter and later by heavy growth of a tall aquatic plant, wild rice,⁹³ which emerged later in the bay at the river mouth. (Evidently, he had neglected to inquire how Rice Lake got its name.) He therefore set up directly at the lake on unoccupied lands. Here on de Zeng Point his purpose was "to secure to himself a proper landing place on this Lake, and to open from the same a land road to said mill seat, and thereby make sure in all seasons of the year of a communication to and from the Lake with the contemplated mill seat & back country." In October, de Zeng "still [kept] a number of hands at work."⁹⁴

The arduous circumstances and isolation took a heavy, though not decisive, toll on the health and spirits of Frederick de Zeng. On 5 September 1819 he confides to William, "it is needless to dwell any longer on a subject which makes me day and night more than miserable, having taken all my spirit and contentment from me so that I scarcely know any more what I am about."⁹⁵ On 26 December, he admits he has "much deranged [his] health in consequence of [his] hardfare in this here before untouched wilderness for the whole of last season, so that [he is] still unable to leave [his] room." Nor has he any "white neighbours nearer to [him] than about five miles [eight kilometres] distance from [his] habitation^[96]...meaning Mr. [Charles] Anderson, the Indian Trader."⁹⁷ On 24 January 1820 he has "not...fully recovered [his] health, the fever having...settled on [his] eyes."⁹⁸ De Zeng probably had malaria.

De Zeng was worried constantly that his land holdings would be disrupted by the intermixing of reserve lots in the final survey plan, for he needed a compact operation. However, Upper Canada was employing the "chequered plan,"⁹⁹ which required a certain portion of the land base to be designated at preset intervals for the exclusive use of the clergy or crown. Otonabee Township was no exception. As it happened, lot 8 on de Zeng

Point was designated in the survey as a clergy reserve, isolating "all [de Zeng's] improvement...on a broken front [lot 7] from 40 to 50 acres only."¹⁰⁰ He still could have obtained a road allowance through this reserve, or leased the whole lot (as it "was not before applied for"),¹⁰¹ but he could never have owned it.¹⁰²

Cut off from his mill, de Zeng petitioned the government in York for a second time. On 26 December 1819,¹⁰³ he warns that without permission to keep these new lands on the point, he would have "to stop going on any further" in his plans for the glass factory, "as it is altogether inadmissible to transport the necessary timber & fuel for the same any great distance." He further refers to the high costs he already faces. "By no means...is the mill seat...anything more than an artificial one, and to be made so by very great expences only."¹⁰⁴ Finally, he proposes to apply one of his two purchased 200-acre (80-hectare) loyalist land rights to the acquisition of lots 7 and 8 combined (189 acres/76 hectares).



De Zeng's plans were finally terminated by the abrupt cancellation of his granted lands on 6 January 1820,¹⁰⁵ justified by several flimsy or concocted charges about his lack of progress and even conduct. According to Maitland, in council with the Hon. and Rev. Dr. John Strachan, the Hon. James Baby, and the Chief Justice William Dummer Powell, de Zeng had erected "no Mills," introduced no "Settlers and Laborers," and, moreover, had illegally purchased the United Empire Loyalist (UEL) rights. Most damaging of all, however, was "a report having reached his Excellency" that

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Fig. 6
View southeast across frozen de Zeng Bay (now McGregor Bay) on Rice Lake to the west side of concession VII, lot 8 and, across the top, the wooded rear part of lot 7 in Otonabee Township. Major de Zeng proposed a sheltered landing here for cargo boats.

de Zeng had engaged in "highly improper, and even criminal conduct, since [he] came into this Province," with no further elaboration.

De Zeng's reply from Rice Lake was immediate.¹⁰⁶ It was true that no mill had yet been erected, de Zeng acknowledged, but in May 1919 he had been explicitly discouraged from doing so before the survey was completed by officials of the government's own district land board, in the persons of Charles Fothergill and Thomas Ward.¹⁰⁷ Furthermore, settlers would obviously not be brought in to operate the glass factory, de Zeng reminded Maitland, until it was built. Yet de Zeng *had* made progress, "not saying any thing how great the troubles and expences are to make many improvements at the same time, and on different situations or spots in such an untouched wilderness, and all this in one short season..." He had not only built "a home for himself"¹⁰⁸ but was "fully prepared next spring to lodge a number of workmen, and for keeping the necessary teams [of horses]." In addition, he had "actually



▲
Fig. 7
View east showing relic of dam built about 1825 at the "mill seat" for Major de Zeng's proposed glassworks and mills on the Indian River in Otonabee Township, concession VI, lot 15.

engaged a millwright to go to work as soon as practicable...and made other necessary preparations in purchasing & transporting provisions here." To support his claims, de Zeng even challenged the government to send any inspectors they so wished, "Charles Fothergill excepted."

De Zeng asserted that he was ignorant of any law prohibiting the sale of UEL rights, and leapt to the defence of the Van Allstine boys too. Why should he have thought otherwise, since the buying and selling of these land rights was not only widespread in Upper

Canada,¹⁰⁹ but his own letters to the government itself show that he had always voluntarily and openly reported his transaction.

The final odious, unspecified "charge of criminality" was properly dismissed by de Zeng as the work of:

...some privat designing slanderer—, and as the same person or persons remain unnamed to me as yet, I can not of course say any thing more at present on this really horrible transaction, except that I flatter myself that I have always behaved as becoming a man of honour not only while living in this province, but ever since my first manly existence—...and I have only to add that, ever since my first beginning of making improvements on the granted land, attempts have constantly been made to keep me in hot water by unfavorable reports that the government never would in the end confirm.¹¹⁰

No later correspondence has been found on the topic of the proposed glass factory. Nevertheless, de Zeng did gain a measure of revenge in a subsequent land flip. The immediate beneficiary of de Zeng's improvements in Otonabee was the brother, Roswell Seaton,¹¹¹ of his second wife. Seaton located on lot 7, concession VII on 22 March 1820 and received the patent on 21 February 1821. De Zeng bought back the property on 19 May, and in turn resold it just over five months later, on 29 October, for eight times what he himself had paid. The next record of de Zeng is in the summer of 1824, when he is back again in New York state.

Discussion

Frederick de Zeng came to Canada to pursue an economic opportunity at a time, just after the War of 1812, when the economy in both countries was depressed; in the United States the glass industry in particular was being savaged. Nevertheless, de Zeng clearly intended to stay and settle in Canada, since he knew he could not get title to his properties for seven years, by which time he would be 68; indeed, he fought to keep his residence on de Zeng Point even after losing his lands for the proposed glass factory and mills. The moment of his arrival, August 1818, coincides exactly with the arrival in Upper Canada of the new Lieutenant Governor, Sir Peregrine Maitland, who restored the right of Americans to take the oath of allegiance and thus acquire land.

De Zeng's prospects for establishing the first glass factory in Canada were excellent, if only because he himself was one of the leading glass and canal men in North America. He would have a monopoly of existing markets,

with good prospects for expansion. In addition, his personal resources and connections would help ensure that his capital and labour requirements would be met, and the land would be free or nearly so. The location he selected was fairly remote, but Otonabee Township was just being surveyed for the first time and thus opened for settlement. More important, his site was near the raw materials he needed, especially timber, but also sand, limestone, and possibly salt. Transportation was a problem but improvements to the Trent River were being actively considered.

Still, the venture failed and de Zeng lost both his home and his investment. The immediate reason, of course, was the mere fact he had the rug pulled out from under him—his land grant was revoked. The reason why, however, is closely related to the political and social conflicts which marked the period.¹¹² First, de Zeng was American. Anti-American feeling was still rife after the war, especially at the government level, making the “alien question”

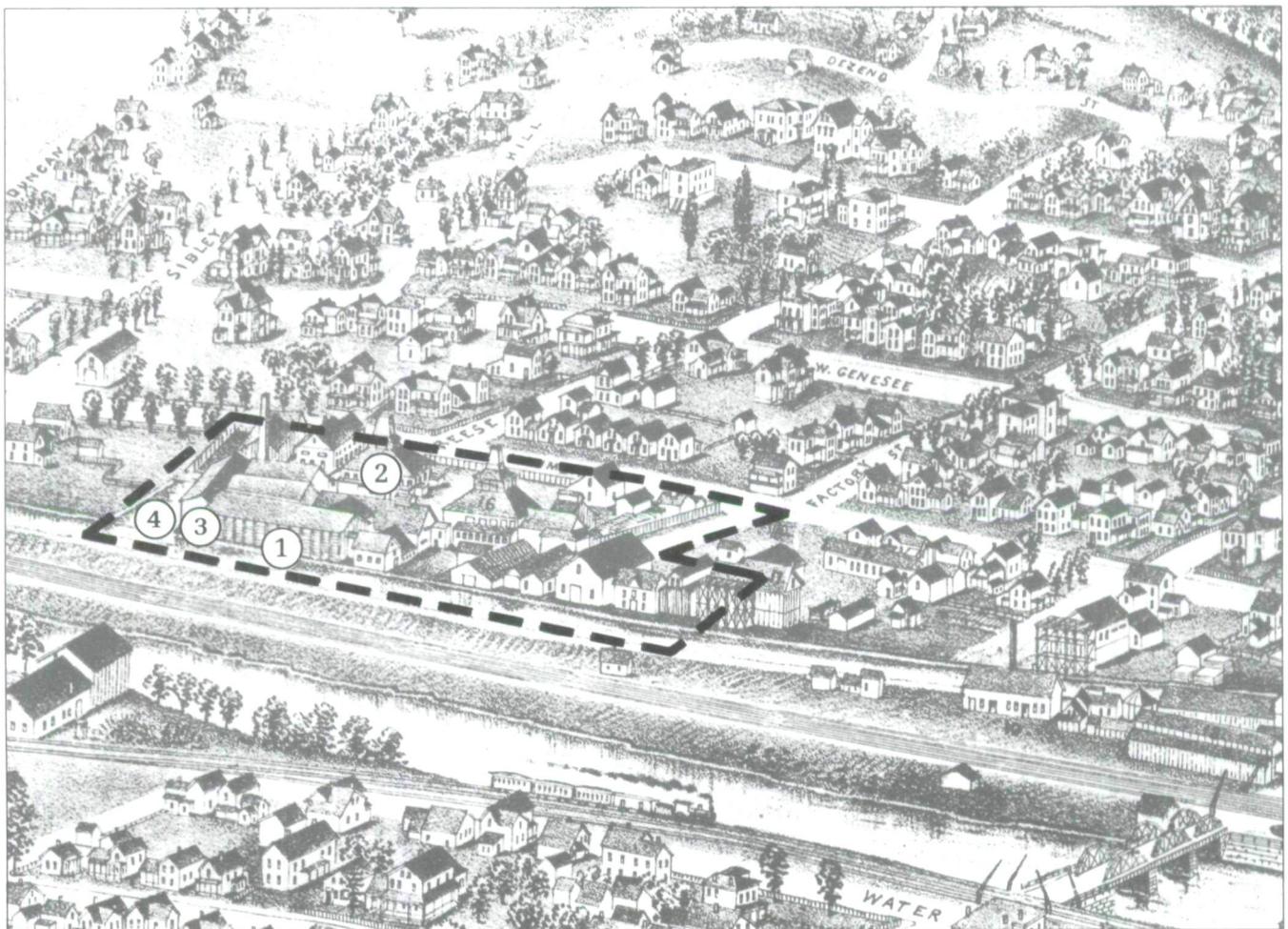
(the exclusion of American immigration) the main focus of postwar dispute in Upper Canada. Indeed, the government still feared for the province’s ability to repulse any future American invasion in the sparsely settled colony. Only the arrival of Maitland and the lobbying of powerful self-interested landowners like William Dickson¹¹³ had created an opening for Americans, including de Zeng, in the first place.¹¹⁴ In this atmosphere de Zeng would get little benefit of doubt.

Second, and a special concern of Maitland’s, was the fact that large tracts of granted land in Upper Canada were being held in an unproductive state by speculators, thereby impeding settlement and progress and exacerbating the security problem alluded to above. Accordingly, even the suspicion of not proceeding with satisfactory haste would be—and was, in de Zeng’s case—harshly dealt with.

The final factor is a more parochial and personal one. It involves conflicts of interest among local men who, in an area and at a time when development schemes abounded, had

Fig. 8

Clyde Glass Works on the Erie Canal at Clyde, N.Y., 1892. Frederick de Zeng founded the town in 1815; his son William co-founded the glassworks in 1828. Raw materials were placed in the storage shed (1) before transfer to the mixing rooms and then to the furnaces and annealing ovens in the main complex (2), where the glass was blown and shaped. Finished products were stored (3) and later loaded onto packet boats moored in the slip (4). (Wayne E. Morrison & Co., Ovid, N.Y., lithograph, by permission)



ideas of their own to promote. De Zeng believed his plans were sabotaged by such competitors, who evidently succeeded in turning the minds in York against him, either by submitting false reports or by exaggerating the extent of his normal operational difficulties. De Zeng's illness contributed to his problems too, not so much by slowing his progress, but by keeping him from appearing in person at York at the critical moment to defend himself and use his well-honed powers of persuasion.¹¹⁵

De Zeng's relatively short stay in Canada, from his first exploration in August 1818 until some time before 1824, was full of accomplishment. He made an honest and courageous attempt to establish in Canada its first glass factory and one of its first heavy industries of any kind. In so doing he must have been among

the very earliest promoters of the Trent Canal. Lastly, de Zeng was a true frontiersman, hacking his home from the wilderness and starting a family¹¹⁶ to become the first settler in Otonabee Township¹¹⁷ and among the first in Peterborough County.¹¹⁸

Major Frederick Augustus de Zeng died at Clyde, New York, on 25 April 1838, aged 81. His achievements continued during his final years in America. In 1824 he was instrumental in bringing the famous American Shakers religious community to western New York and in fact suggested the site of the new colony at Sodus Bay on Lake Ontario.¹¹⁹ In 1828 he laid the cornerstone for a new glasshouse, co-founded by his son William that was to operate continuously for almost a century. Here on the Erie Canal at Clyde, New York, it could be said, was built the first glass factory in Canada.

NOTES

I gratefully acknowledge the help I have received from innumerable archivists, librarians, historians, genealogists and government officers in Canada and the United States. The National Archives of Canada, in Ottawa, and the Archives of Ontario, in Toronto, deserve special mention. I also wish to thank Mrs. Elizabeth Walsh of Vancouver for first bringing to my attention the name of our common ancestor, Frederick A. de Zeng. Above all, I am indebted to my wife, Caryl, for her intelligent and enthusiastic assistance in the research for and review of this paper.

1. Today these features on the north shore of Rice Lake are: the village of Hiawatha, Paudaush Island (in the 1830s the lake level was raised, cutting off the headland here and thus changing the "point" to an island), McGregor Bay, and the Indian River (the only feature whose name remains unchanged).
2. Major Samuel Strickland, *Twenty-Seven Years in Canada West*, 2 vols.-in-one, (1853; reprint, Edmonton: M. G. Hurtig Ltd., 1970), 67-8.
3. Gerald Stevens, *Glass in Canada: The First One Hundred Years* (Toronto: Methuen, 1982), 14.
4. Prior to confirmation of the 1839-40? Mallorytown glassworks in 1953 by Gerald and Edith Stevens, George and Helen McKearin drew attention to the confusing possibility that two glass factories may have operated at the same time and in almost the same place, specifically the one at Redwood, N.Y., and a possible second factory just across the St. Lawrence River at Mallorytown. In light of the present attempt it is ironic that another de Zeng, Lawrence W., grandson of Frederick, operated this same Redwood factory from 1844 until 1853. See George S. McKearin and Helen McKearin, *American Glass* (1948; reprint, New York: Bonanza Books, 1989), 174, 193; Thomas B. King,

Glass in Canada (Erin, Ontario: Boston Mills Press, 1987), 34-5.

5. DeCow's first bid was in the name of the Thorold Glass Manufacturing Company, subsequent bids were in the name of the Upper Canada Glass Manufacturing, King, *Glass in Canada*, 202.
6. *Ibid.*, 32-6, 202-3.
7. De Zeng's surname at birth in Germany was "von Zenge," his father's name, which Frederick changed to "de Zeng" in North America. In Canada de Zeng signed his name "Frederick Augustus de Zeng;" many variations have been reported. Similarly, the birthdate inscribed on de Zeng's headstone is 7 April 1757, although most published sources say simply he was born in 1756.
8. Edward F. De Lancey, "Biography of Baron de Zeng," *New York Genealogical and Biographical Record* 2 (1871): 49-53.
9. James Grant Wilson and John Fiske, eds. *Appleton's Cyclopaedia of American Biography*, 6 vols. (New York: D. Appleton & Co., 1887-9); *Harper's Encyclopedia of United States History From 458 A.D. to 1909* 3 (New York: Harper & Bros., 1909).
10. For example, Wayne E. Morrison, Sr., *Morrison's History of Clyde, Wayne Co., New York* (1955; reprint, Ovid, N.Y.: Wayne E. Morrison, 1969), 2; George S. Conover, *History of Ontario County, New York* (ca 1894), 286-8; Alf Evers, *Woodstock: History of an American Town* (Woodstock, N.Y.: Overlook Press, 1987), chap. 13; Paul R. Huey, "The Albany Glassworks from 1790 to 1800: A Study of American Industry During the Federal Period," *Journal of Glass Studies* 22 (1980): 36-52.
11. de Lancey, "Baron de Zeng," 49-53; Philip Mark de Zeng, "The Descendants of Frederick Augustus, Baron de Zeng," *New York Genealogical and Biographical Record* 5 (1874), 8-12. The latter author is a son of Frederick

- de Zeng by his first wife.
12. De Zeng was "the first manufacturer of window glass in the United States," according to the entry for the de Zeng papers in the *National Union Catalog of Manuscript Collection* (NUCMC) (Washington: Library of Congress, entry MS 71-342). This is clearly false, however, if only because window glass was being produced at the Albany works itself before de Zeng arrived. A more accurate claim is that he was the first window glass manufacturer in New York state and the first "of magnitude" in the whole country, in "*Grip's*" *Historical Souvenir of Clyde, N.Y.* (Syracuse: Grip Publishers, 1905), 35. In fact between 1609 and 1739 there were five or six attempts to produce glass of all kinds in the area that would become the United States; from 1739 until 1800 there were at least 12 more. A few of these enterprises were large and successful (Henry William Stiegel's factory at Manheim, Pa. employed 130 men), and a few did include window glass in their product line. It does not appear, however, that anyone producing window glass before 1796 did so on a scale comparable to Frederick de Zeng and his associates. See McKearin and McKearin, *American Glass*, 75-131, 583-9.
 13. a) Paul R. Huey, "Albany Glassworks," 36-52. b) The site of the glassworks is marked today by a local historic plaque.
 14. It is unknown whether this glassworks was ever built, though de Zeng did erect a forge. A glass factory was operating here by 1811, however, under Stephen Stilwell, a fact commemorated by a local historic plaque. See Evers, *Woodstock*, chaps. 13, 14.
 15. He was also part-owner as late as 1814.
 16. Jasena Rappleye Foley, "The Ontario Glass Manufacturing Company," *Journal of Glass Studies* 4 (1962): 136-47.
 17. Frederick's descendants by his first wife were also prominent in the glass industry. William Steuben de Zeng, Frederick's son, owned the glassworks at Geneva, NY (1817), co-founded a factory at Clyde, NY (1828), and owned another in Blossburg, Pa. (well after 1810). Lawrence W. de Zeng, Frederick's grandson, co-owned a glass factory at Redwood, NY (1844). See McKearin and McKearin, *American Glass*, 190.
 18. de Lancey, "Baron de Zeng," 49-53.
 19. Noble E. Whitford, *History of the Canal System of the State of New York...*, Supplement to the annual report of the State Engineer and Surveyor of the State of New York, Vol. 1 (Albany, NY: Brandow Printing, 1906), 36.
 20. a) Edith Pilcher, *Castorland: French Refugees in the Western Adirondacks 1793-1814* (Harrison, N.Y.: Harbor Hill Books, 1985), 127. b) De Zeng's wooden structure (completed 1796) was replaced by stone in 1804. The site is marked by a local historic plaque.
 21. A part of the Glasco Turnpike still exists, commemorated by a state historic plaque.
 22. Evers, *Woodstock*, 117, 119, 159.
 23. Wilson and Fiske, *Appleton's Cyclopedia*.
 24. Foley, "Ontario Glass," 136-47.
 25. Wilson and Fiske, *Appleton's Cyclopedia*.
 26. de Lancey, "Baron de Zeng," 49-53.
 27. "*Grip's*" *Souvenir*, 34.
 28. Morrison, *History of Clyde*, 4.
 29. New York Public Library (NYPL), Frederick de Zeng Papers, Power of attorney from Frederick de Zeng to William de Zeng, 25 October 1818.
 30. Public Archives of Canada (PAC), Upper Canada Land Petitions, RG1, L3, vol. 155, file D, bundle 12, 1818-20, petition 9, pp. 9, 9a, 9b, microfilm, reel C-1745, petition of Frederick de Zeng, 6 March 1819.
 31. Archives of Ontario (AO), RG1, C-1-2, MS 692, microfilm, reel 8-26, order-in-council granting land to Frederick de Zeng, 11 March 1819.
 32. PAC, Upper Canada Land Petitions, RG1, L3, vol. 155, file D, bundle 12, 1818-20, petition 9, pp. 9, 9a, 9b, microfilm, reel C-1745, petition of Frederick de Zeng, 6 March 1819.
 33. *Ibid.*
 34. PAC, Upper Canada Land Book K, RG1, L1, p. 42, microfilm reel C-103, order-in-council granting land to Frederick de Zeng, 11 March 1819.
 35. Gerald M. Craig, *Upper Canada: The Formative Years 1784-1841* (Toronto: McClelland and Stewart, 1963), 114.
 36. PAC, Upper Canada Land Petitions, RG1, L3, vol. 149, file D, 1797-1826, petition 62, pp. 62, 62a, 62b, microfilm, reel C-1742, Frederick de Zeng to John Small, 24 January 1820.
 37. Lillian F. Gates, *Land Policies of Upper Canada* (Toronto: University of Toronto Press, 1968), 100.
 38. PAC, Upper Canada Land Petitions, RG1, L3, vol. 149, file D, 1797-1826, petition 62, pp. 62, 62a, 62b, microfilm, reel C-1742, Frederick de Zeng to John Small, 24 January 1820.
 39. Thelma Coleman, *The Canada Company* (Stratford: County of Perth and Cumming Publishers, 1978), 174.
 40. The Indian River was still known by its aboriginal name as late as 1827, *Squaw-konegaw* or *Squaknegossippi* Creek. See Edwin C. Guillet, ed., *The Valley of the Trent* (Toronto: The Champlain Society, 1957), xxxvii, 34; also PAC, Upper Canada Sundries, Civil Secretary's Correspondence, RG5, A1, vol. 46, January-March 1820, microfilm, reel C-4604, Richard Birdsall to Thomas Ridout, 3 January 1820.
 41. Richard Birdsall, *Plan of the Township of Otanabee...with the locations therein made at the Surveyor General's office prior to the sixth of January 1820*, c1:44000, survey completed 8 December 1819, map received 6 March 1827, AO, Map records, MNR ACC 18627 no. 1822.
 42. Nevertheless, de Zeng himself never does identify any of the surveyed lots on the glassworks site.
 43. The surveyor general "presumed" this mill seat (i.e., at lot 15, con. VI) to be "the spot meant by Mr. De Zeng" and, accordingly, "pencilled his [de Zeng's] name on 500 acres [200 hectares] of land adjoining thereto," awaiting approval. (This "500 acres" included the lot in which the power site itself was located.) Considering that the surveyor himself (Richard Birdsall) was de Zeng's main letter courier (the other, once, being Charles Fothergill) as well as the points made in the next note, there is no doubt the mill site named by the surveyor general is indeed de Zeng's. PAC, Upper Canada Land Petitions, RG1, L3, vol. 155, file D, bundle 12, 1818-20, p. 126d, microfilm, reel C-1745, Assignment of lands by Thomas Ridout, 6 January 1820.
 44. The placement on lots 15, 14, and the west half of 13 in concession VI of the full 500-acre (200-

- hectare) glassworks complex is determined first, by the likeliness of a continuous and convenient valley site being chosen and the fact that lots 13 to 15 were sandwiched between reserved lots 12 and 16; second, by the practical necessity to include navigable water (which only reached lot 13) in one contiguous parcel; third, by the approximate ground and water distances reported by de Zeng on four different occasions from different (and ill-defined) reference points; and lastly, by a unique development of the site in or shortly after 1825 which cinched these particular lots together. The latter was a sluiceway 70 chains (1 miles/1.5 kilometres) long running from a dam at lot 15 to grist and saw mills on the west half of lot 13. Remnants of all four structures are visible today, though the saw mill burned down and the magnificent grist mill ("Gilchrist's Mill") is a replacement built in 1849. See AO, Township Papers, Otonabee, lot 15 and west half of lot 13, con. 6, microfilm, pp. 0283-0292, esp. sketch map of lots 13-15, p. 0292.
45. This is the "Designs Bay" of Strickland. "Design" is a common substitute for "de Zeng" in the early records; see, for example, "Major Design" in T. W. Poole, *The Early Settlement of Peterborough* (1867; reprint, Lindsay, Ont.: John Deyell, 1982), 132.
 46. Lot 8 was surveyed into east and west parts at some time. On 6 January 1820 the total area of lot 8 was "about 150 acres" (60 hectares), according to the surveyor general. Official documents today record the area of the west part, patented 1861, as 70 acres (28 hectares) and of the east part, patented 1887, as 69 acres (28 hectares), for the total of 139 acres (56 hectares) used herein. Official Documents Section, General Services Branch, Ontario Ministry of Government Services, 19 April 1990, personal communication.
 47. Lot 8 was not only essential to keep "entire" de Zeng's lands from the peninsula to the glassworks site, including the leased woodlands, but it was probably his intended landing site too. Shelter, proximity, and terrain all favour lot 8 over lot 7. Boat accessibility seems to favour neither lot, but is difficult to assess because the water level in Rice Lake is now about three feet (one metre) higher than it was in 1819. Present water depths to the low-water datum, minus the three-foot difference referred to above, suggest that there may have been at least one to two feet (0.3 to 0.6 metres) of water in 1819 not only all along the west side of the peninsula, but also around the tip, removing the one possible advantage of lot 7. John Witham, Historian, Parks Canada, 10 May 1990, personal communication; Fisheries and Oceans Canada, "Small craft chart: Trent-Severn Waterway/Healey Falls locks to Peterborough," Rice Lake (sheet 2 of 3), 1:20000 (1987; reprint, Ottawa: Canadian Hydrographic Service, no. 2022, 1990).
 48. PAC, Upper Canada Land Petitions, RG1, L3, vol. 155, file D, bundle 12, 1818-20, pp. 126, 126a, 126b, microfilm, reel C-1745, Petition by Frederick de Zeng, 26 December 1819.
 49. Private collection, Jean C. Houston (great-granddaughter of de Zeng) to Robert G. Clark, 21 July 195[5]. An isolated reference to there still, in the 1950s, being a "de Zeng's point" on Rice Lake is made in family correspondence.
 50. Lot 7 was the former site of a Mohawk Indian village and a Mohawk battle with the "Mississagas," and contains an ancient and unique serpentine Indian burial ground. See Guillet, *Valley of the Trent*, 11.
 51. PAC, Upper Canada Land Petitions, RG1, L3, vol. 155, file D, bundle 12, 1818-20, pp. 126, 126a-b, microfilm, reel C-1745, petition of Frederick de Zeng, 26 December 1819.
 52. a) On the day de Zeng received his grant, 11 March 1819, Duncan and Jacob Van Allstine (spelled as Duncan signed it) were also awarded 200 acres (81 hectares) each as the sons of a United Empire Loyalist (UEL). Duncan's grant was in Essa Township (now in Lennox and Addington County), Jacob's was in Collingwood Township (now in Grey County). PAC, Upper Canada Land Book K, RG1, L1, p. 42, microfilm, reel C-103, orders-in-council granting land to Duncan and Jacob Van Allstine, 11 March 1819; AO, Ontario Land Records Index, under "Van Alstine." That they then sold their right to de Zeng illustrates the overwhelming response to the "settlement duties" which had been reinstated just on 14 October 1818 by Maitland as a condition for all United Empire Loyalist (UEL) grants. The new duties "tended to throw UEL rights on the market and to lower their value, since individuals who might have preferred to hold their land for a rise could not convert their right to patented land without expense." De Zeng must have recognized, and gotten, a good deal. See Gates, *Land Policies*, 131. b) PAC, Upper Canada Land Petitions, RG1, L3, vol. 155, file D, bundle 12, 1818-20, p. 126e, microfilm, reel C-1745, Power of attorney from Duncan Van Allstine to Frederick de Zeng, 6 August 1819.
 53. The nearby Marmora Iron Works, which began operations in 1822 in the Trent watershed, used charcoal for its blast furnaces. This marked the beginning of the iron and steel industry in Ontario. It is tempting to speculate on the course of future development in south-central Ontario had both a glass factory and an ironworks been operating in the same general area at this time. *The Canadian Encyclopaedia*, 2nd ed. (Edmonton: Hurtig Publishers, 1988), 2: 1093.
 54. For example, the glass works at Hamilton, N.Y., closed for want of fuel in 1815. McKearin and McKearin, *American Glass*, 129.
 55. Pearce Davis, *The Development of the American Glass Industry* (1949; reprint, New York, Russell & Russell, 1970), 22.
 56. PAC, Upper Canada Land Petitions, RG1, L3, vol. 155, file D, bundle 12, 1818-20, petition 9, pp. 9a, 9b, microfilm, reel C-1745, petition of Frederick de Zeng, 6 March 1819.
 57. This assumes an average merchantable yield of 3400 cubic feet per acre (238 cubic metres per acre), the maximum possible for fully stocked, old-growth tolerant hardwood stands on average sites. De Zeng himself noted the trees were "immense." W. L. Plonski, *Normal Yield Tables (Metric) for the Major Forest Species of Ontario* (Toronto: Ontario Ministry of Natural Resources, 1974), 28.
 58. Foley, "Ontario Glass," 136-47.
 59. Richard Birdsall, Field notes for the survey of Otonabee Township (Book 381, unpublished diary) Toronto: Ontario Ministry of Natural Resources, Surveys and Mapping Branch, 1819).
 60. W. Atkinson, Lindsay District, Ontario Ministry

- of Natural Resources, 11 May 1990, personal communication with author.
61. Clear glass requires less than 0.3 per cent iron. Dr. Paul W. Kingston, Resident Geologist, Tweed District, Mines and Minerals Division, Ontario Ministry of Northern Development and Mines, 14 May 1990, personal communication with author.
 62. That, is sand-sized particles constitute more than 65 per cent of the aggregate.
 63. a) Ontario Ministry of Natural Resources, "Aggregate Resources Inventory of Otonabee Township, Peterborough County, Southern Ontario," Aggregate Resources Inventory Paper 24 (Toronto: Ontario Geological Survey, 1980) 32 p. b) Ontario Ministry of Natural Resources, "Distribution of Sand and Gravel deposits/ Otonabee Township, Peterborough County (map 1)," 1: 50000 (Toronto: Ontario Geological Survey, Aggregate Resources Inventory, 1980).
 64. Pearce Davis, *American Glass Industry*, 22.
 65. De Zeng uses the plural "furnaces" in referring to his proposed glassworks, a further indication of the operational scale he intended.
 66. *Ibid.*, 23.
 67. Foley, "Ontario Glass," 136-47.
 68. R. W. Douglas and Susan Frank, *A History of Glassmaking* (Henley-on-Thames: G. T. Foulis & Co., 1972), 44.
 69. a) Dr. Paul W. Kingston, Resident Geologist, Tweed District, Mines and Minerals Division, Ontario Ministry of Northern Development and Mines, 14 May 1990, personal communication. b) Salt can be obtained from solution by pumping it to the surface and into solar evaporation ponds. The closest existing major salt producer to Otonabee was probably the one at Syracuse, N.Y.
 70. Guillet, *Valley of the Trent*, 137.
 71. Dr. Paul W. Kingston, Resident Geologist, Tweed District, Mines and Minerals Division, Ontario Ministry of Northern Development and Mines, 14 May 1990, personal communication.
 72. Ontario Ministry of Natural Resources, "Bedrock Resources: Otonabee Township, Peterborough County (map 3)," 1:50000 (Toronto: Ont. Geological Survey, Aggregate Resources Inventory, 1980).
 73. Ontario Ministry of Natural Resources, "Aggregate Resources Inventory."
 74. Foley, "Ontario Glass," 136-47.
 75. PAC, Upper Canada Land Petitions, RG1, L3, vol. 155, file D, bundle 12, 1818-20, petition 9, pp. 9, 9a, 9b, microfilm, reel C-1745, petition of Frederick de Zeng, 6 March 1819.
 76. A month later William evidently heeds his father's plea. On 5 October 1819 the power of attorney given William the year previous was finally registered in Seneca County (under whose jurisdiction the village of Clyde then fell), signalling that a land transaction had probably taken place. In all likelihood the buyer was William himself, because he purchased all his father's land in Clyde "a few years" after 1815, but before 1823. In any case, Frederick's determination was soon restored. NYPL, Frederick de Zeng Papers, Seneca Co. Court document, 5 October 1819; Kenneth J. Conroy, Barrister & Solicitor, Pembroke, Ontario, 6 May 1990, personal communication; Morrison, *History of Clyde*, 7.
 77. NYPL, Frederick de Zeng Papers, Frederick de Zeng to William de Zeng, 5 September 1819.
 78. PAC, Upper Canada Land Petitions, RG1, L3, vol. 155, file D, bundle 12, 1818-20, petition 9, pp. 9, 9a, 9b, microfilm, reel C-1745, petition of Frederick de Zeng, 6 March 1819.
 79. Foley, "Ontario Glass," 136-47.
 80. Ronald Roth, "Windows and Window Glass in the United States Before 1860" (New York: Columbia University, School of Architecture, 1971, unpublished term paper), 28 p.
 81. Straight-line interpolation from 1814 and 1824 estimates (95 000 and 150 066 respectively). "Chronological Summary of Population Growth in Canada, with Sources of Information, 1605-1931." 1931 Census of Canada Special Report (Ottawa: Dominion Bureau of Statistics, 1931): 133-53.
 82. Foley, "Ontario Glass," 136-47.
 83. Postal communications too, of course, were slow and difficult. The office at Port Hope was not established until 1817, and Cobourg not until 1819. On 5 September 1819 de Zeng said he was "about 15 miles" (24 kilometres) from the nearest post office, which, allowing for the distance across Rice Lake, perhaps meant Cobourg. Winthrop S. Biggs, *The Postage Stamps and Postal History of Canada* (1945; reprint, Lawrence, Mass.: Quartermen Publications, 1974), 11; NYPL, Frederick de Zeng Papers, Frederick de Zeng to William de Zeng, 5 September 1819.
 84. Percy L. Climo, *Early Cobourg* (Cobourg: Haynes Printing, 1985), 52.
 85. Guillet, *Valley of the Trent*, 56.
 86. Norma Martin, Donna S. McGillis, and Catherine Milne, *Gore's Landing and the Rice Lake Plains* (Cobourg: Haynes Printing, 1986), 34.
 87. Guillet, *Valley of the Trent*, 162.
 88. The overall physical circumstances associated with being located on Rice Lake are strikingly similar to the original situation of the Geneva factory on Seneca Lake prior to its becoming linked to the de Zeng-inspired Cayuga and Seneca Canal.
 89. Poole, *Early Settlement*, 3.
 90. a) PAC, Upper Canada Land Petitions, RG1, L3, vol. 155, file D, bundle 12, 1818-20, petition 9, pp. 9, 9a, 9b, microfilm, reel C-1745, petition of Frederick de Zeng, 6 March 1819. b) Without de Zeng's factory, by 1827 Otonabee Township was still "but very partially settled." Even so, "objections" relating to "[Otonabee's] distance from, and difficulty of access to, market" had been "removed" (referring to the improved roads and the Rice Lake ferry service). A report in Guillet, *Valley of the Trent*, 32.
 91. James T. Angus, *A Respectable Ditch: A History of the Trent-Severn Waterway 1833-1920* (Kingston, Ontario: McGill-Queen's University Press, 1988), 8.
 92. That de Zeng was among the first and most persuasive promoters of the Trent Canal seems obvious from both his experience with American canals and his current need for improved water transportation at the very time (1818-19) and place (the Trent watershed) that the government itself was actively exploring such a route. However, de Zeng's link is even more direct. John W. Bannister is presently credited as the first to have actively promoted the Trent Canal project, for a lottery proposal he put forward on 15 December 1820. It so happens, however, that de Zeng had already lived on Rice Lake for about

- a year before Bannister, in 1820, even arrived in the area. It is also remarkable that Bannister settled on Rice Lake itself, in fact on what is now Picnic Point, not five kilometres from de Zeng. In addition, a family correspondent claims it was de Zeng who "discovered" Healey Falls on the Trent River, which, if true, suggests he himself was in fact actively exploring such a route, presumably in the period 1818-19. (Allegedly, the "retainer" whom de Zeng sent to York (now Toronto) for the purpose of registering it names the falls after himself instead, causing de Zeng to have "Healey put in jail in York...for a year.") This claim is partially corroborated by the land records, which show that in 1821 de Zeng sold lot 7, concession VII in Otonabee to an Alva Healy. Today Healey Falls is a small community and lock station on the Trent Canal. Private collection, Jean C. Houston to Robert G. Clark, 21 July 195[5].
93. Wild rice is an annual grass up to 10 feet (3 metres) tall that grows on a muddy substratum in 1 to 4 feet (0.3 to 1.2 metres) of water (with annual variation less than about 1.5 feet (0.5 metres) which is freshened and aerated by slight water movement. It thus grows in shallow, quiet waters and river mouths from southern Ontario to Florida. Throughout this range it flowers from June to September, but in southern Ontario its presence would first be detected on the water surface as early as June. At the end of the growing season, the weak stem collapses on the water, disappearing without trace under the ice and snow of winter. Merritt Lyndon Fernald, *Gray's Manual of Botany* (1950; reprint, Toronto: D. Van Nostrand, 1970), 188; J. A. Van der Meer, *Wild Rice (Zizania aquatica L.): A Summary of Available Information on Wild Rice* (Otonabee Township, Ontario: Ontario Ministry of Natural Resources, Serpent Mounds Provincial Park, 1970, unpublished report), 28 p.
 94. PAC, Upper Canada Land Petitions, RG1, L3, vol. 155, file D, bundle 12, 1818-20, pp. 126, 126a, 126b, microfilm, reel C-1745, petition of Frederick de Zeng, 26 December 1819.
 95. NYPL, Frederick de Zeng Papers, Frederick de Zeng to William de Zeng, 5 September 1819.
 96. "Captain Anderson," de Zeng's "friend," lived at what is now Hatrick Point.
 97. a) PAC, Upper Canada Land Petitions, RG1, L3, vol. 155, file D, bundle 12, 1818-20, pp. 126h, 126i, microfilm, reel C-1745, petition of Frederick de Zeng to John Small, 26 December 1819. b) The fact of de Zeng's isolation is not properly reflected in Figure 5, whose title states that the map shows occupants of lots in Otonabee Township, to 6 January 1820. This date is wrong, however. Rather, the 39 dated entries on the full map sheet show that the names, with one exception, are those of people located between 1820 and 1825.
 98. PAC, Upper Canada Land Petitions, RG1, L3, vol. 149, file D, 1797-1826, petition 62, pp. 62, 62a-b, microfilm, reel C-1742, Frederick de Zeng to John Small, 24 January 1820.
 99. Gates, *Land Policies*, 51-3.
 100. PAC, Upper Canada Land Petitions, RG1, L3, vol. 155, file D, bundle 12, 1818-20, pp. 126, 126a, 126b, microfilm reel C-1745, petition by Frederick de Zeng, 26 December 1819.
 101. PAC, Upper Canada Land Petitions, RG1, L3, vol. 155, file D, bundle 12, 1818-20, p. 126d, microfilm reel C-1745, assignment of lands by Thomas Ridout, 6 January 1820.
 102. Gates, *Land Policies*, 198-9.
 103. PAC, Upper Canada Land Petitions, RG1, L3, vol. 155, file D, bundle 12, 1818-20, pp. 126, 126a, 126b, microfilm reel C-1745, petition by Frederick de Zeng, 26 December 1819.
 104. In fact in 1837, the Hon. Zaccheus Burnham and Dr. John Gilchrist blasted a short but permanent outlet from Stony Lake (at Gilchrist Bay) to the headwaters of the Indian River so as to increase the volume of water flowing to that same water power site on lot 15, con. VI. Ever since, both the Indian and Otonabee rivers have joined Stony Lake to Rice Lake. See Poole, *Early Settlement*, 140; Guillet, *Valley of the Trent*, 34.
 105. PAC, Upper Canada Land Book K, RG1, L1, p. 347, microfilm, reel C-103, order-in-council cancelling Frederick de Zeng's land grant, 6 January 1820.
 106. PAC, Upper Canada Land Petitions, RG1, L3, vol. 149, file D, 1797-1826, petition 62, pp. 62c-g, microfilm, reel C-1742, Petition of Frederick de Zeng, 24 January 1820.
 107. At the time, Fothergill and Ward were travelling in a party on a famous excursion that led directly to the discovery of a new mill site, around which ultimately developed the city of Peterborough. See Poole, *Early Settlement*, 1-3; Edwin Guillet, *Early Life in Upper Canada* (1933; reprint, Toronto: The Champlain Society, 1967), 62-3.
 108. De Zeng's home appears to be depicted, but not identified, in the top right corner of an 1823 sketch map of the "Rice Lake settlement" by J. Lycett, reproduced in Loyd J. Delaney *Small But Bountiful: Rice Lake Story — Gore's Landing, Ontario* (Orillia, Ont.: Dymment-Stubley Printers, 1983), 14.
 109. Gates, *Land Policies*, 131.
 110. PAC, Upper Canada Land Petitions, RG1, L3, vol. 149, file D, 1797-1826, petition 62, pp. 62a-b, microfilm, reel C-1742, Frederick de Zeng to John Small, 24 January 1820.
 111. Roswell Seaton is the fearsome true character immortalized as "Old Satan" by Susanna Moodie in another Canadian classic, *Roughing it in the Bush: Or Life in Canada* ed. Carl Ballstadt (1852; reprint, Ottawa: Carleton University Press, 1988), chap. 6, pp. 564, 570. Compare Martin, McGillis, and Milne, *Gore's Landing*, 25.
 112. For a discussion of this turbulent period in Upper Canada see Craig, *Upper Canada*, chaps. 5, 6; for details see Gates, *Land Policies*, especially chaps. 8, 9.
 113. De Zeng had used Dickson's name as a reference. Dickson frequently stayed at de Zeng's home in Geneva while a prisoner during the War of 1812. PAC, Upper Canada Land Petitions, RG1, L3, vol. 155, file D, bundle 12, 1818-20, petition 9, pp. 9, 9a, 9b, microfilm, reel C-1745, petition of Frederick de Zeng, 6 March 1819.
 114. Anti-American sentiment may directly explain de Zeng's supposed "criminal conduct," if he were in any way connected with activity deemed to be "seditious," such as through his continuing association with Roswell Seaton, his new brother-in-law. In 1814, on trial for assault, Seaton was said to have told John Hagerman (a possible relative of prominent loyalist official Christopher Hagerman) that "he had heard that

- [25] of our [British] officers were killed and that he would give one dollar a peace [sic] for as many more." In 1817 Seaton was convicted for assault once again, again by Justice Elias Jones. Jones was a member of the district land board in 1819–20 and therefore knew the activities of both Seaton and de Zeng. (Seaton was also convicted for assault in 1822, and similarly charged in 1828.) AO, Court of General Quarter Sessions, Cobourg (Northumberland and Durham), Case Files 1802–46, RG 22, Series 31.
115. De Zeng himself suspected well-known Charles Fothergill, but another possible source of the "unfavorable reports" referred to darkly by de Zeng was the Hon. Zaccheus Burnham. Not only was Burnham a member of both the district land board and the Legislative Assembly at the time in question, as well as the future father-in-law of surveyor Richard Birdsall, but he apparently coveted de Zeng's Otonabee mill site. In 1825 he received a grant for (and in 1828, the patents) to the same lots 15 and west half of 13 in concession VI for the purpose of constructing the first grist and saw mills in the township, although Dr. John Gilchrist is credited as the actual builder. See AO, Township Papers, Otonabee, lot 15 and west half of lot 13, con. VI, microfilm, pp. 0283–0292; A.O.C. Cole, ed., *Illustrated Historical Atlas: Peterborough County 1825–1875* ([Peterborough]: Hunter Rose Co. for Peterborough Historical Atlas Foundation Inc., 1975), 62.
116. De Zeng never speaks of his family in any of his own surviving letters, but enough information is available nonetheless to construct a reasonable hypothesis about the sequence of personal events during this period. De Zeng probably met his second wife, Wealthy Amanda Seaton, only after beginning his exploration of Canada in August 1818. At this time she was probably living with her family, who we know had already moved to nearby Hamilton Township from the United States. De Zeng probably employed both she and her brother Roswell, he as guide or labourer, Wealthy Amanda as cook. George would have been born in the latter half of 1819 or first half of 1820, in Otonabee Township; Caroline was born 30 June 1821 in Upper Canada, presumably in Otonabee; Edgar was born about 1823, possibly in the United States. (Caroline de Zeng Clark is the author's great-great-grandmother.)
117. Compare D. Gayle Nelson, *Forest to Farm: Early Days in Otonabee* (Kingston: Brown & Martin, 1975), 1–5.
118. Peterborough County was first settled in 1818. See Guillet, *Early Life*, 61–3.
119. An intriguing special account of Frederick de Zeng's service to the Shakers at Sodus Bay is given by Calvin Green, *Biographic Memoir of the Life and Experience of Calvin Green...composed by himself...Church First Order* (New Lebanon, N.Y., 1861), from the Western Reserve Historical Society Library, MS no. VI: B–28. Frederick joined the Shakers for the period 28 October 1826 to 24 March 1828, as did his wife Wealthy Amanda, it seems; in addition, all three of their offspring spent much of their childhood with the Shakers at New Lebanon, N.Y. Another of Wealthy Amanda's brothers, Asa Seaton, and one of her sisters, Tina Seaton, both became elders and now lie buried near the founder of the Shaker order, Mother Ann Lee, in the famous cemetery at Watervliet (Albany), N.Y.