

---

## A Shocking Business: The Technology and Practice of Electrotherapeutics in Canada, 1840s to 1940s

J. T. H. CONNOR AND FELICITY POPE

### Résumé

*De 1840 à 1940, tant des médecins que des entrepreneurs ont pratiqué l'électrothérapie. Cette étude examine la gamme d'appareils utilisés, discute des justifications de ce genre de traitement et suggère des raisons de son déclin. Étant donné le rôle important joué par les femmes dans cette forme de thérapie, comme praticiennes et comme patientes, l'incidence de l'appartenance à un sexe est aussi examinée. Le texte s'accompagne d'illustrations des appareils d'électrothérapie appartenant à la collection du Musée canadien de la santé et de la médecine. Cette brève étude intéressera les muséologues et les historiens et leur permettra de situer l'électrothérapie et ses appareils dans l'histoire générale de la médecine et de la technologie au Canada.*

### Abstract

*From the 1840s until the 1940s, physicians and entrepreneurs alike practised medical electrotherapeutics in Canada. This study outlines the range of technological devices used, discusses justifications for the use of electrotherapeutic treatments, and suggests reasons for the decline of this form of therapy. Since women played important roles both as practitioners and as patients, the gendered dimensions of this medical technology are also considered. Representative illustrations of electrotherapeutic devices from the collection of the Canadian Museum of Health and Medicine supplement the discussion. This brief study will be of interest to museologists and historians to help them situate electrotherapy, along with its apparatus, within the general history of medicine and technology in Canada.*

---

In a novel set in Victorian Ontario, Graeme Gibson's *Perpetual Motion*, characters consider the claims of domestic electrotherapy, namely that people "suffering from Nervous Debility, Lost Vitality, Lack of Nerve and Vigour, wasting weaknesses and all those diseases of a *personal nature*, resulting from...*abuses and other causes*" could be restored to "Health, Vigour and Manhood" through their own use of galvanism, magneto-therapy, voltaic belts, and Professor Verney's Improved Family Battery. Though appearing in a work of fiction, and in popular accounts of nineteenth-century medicine, small electrical devices intended to cure disease or to promote health — representing the practice of electrotherapy — are based on historical fact.<sup>1</sup> Portable electrical appliances from the last century are still easily acquired today at auction or through antique dealers, and they are held in museum collections where they may be properly exhibited

and interpreted. The Bakken Museum of Electricity and Life in Minnesota in particular explores the many dimensions of the practice of electrotherapy through its extensive collection of artifacts.<sup>2</sup> The Canadian Museum of Health and Medicine, currently being developed at The Toronto Hospital, also possesses many electrotherapy devices, representative examples of which illustrate this discussion.<sup>3</sup>

Extant electrotherapeutic appliances provide mute evidence of an active part of Canadian medical history and material culture, although they are often dismissed as mere curiosities or examples of quackery. Few extended scholarly studies exist of their role in medicine, and this subject is usually not analysed in more general historical analyses of medical technology.<sup>4</sup> Yet, as with other examples of medical apparatus, the historical context of these devices usefully highlights the often fluid boundaries that exist between healthcare

practices. Acknowledging historian John Pickstone's plea to view the history of medical technology as more than the mere study of "tools," this discussion therefore briefly outlines how electrotherapeutics became an element of both professional medicine and of personal care. The example of electrotherapeutics studied over a one-hundred year period also illustrates how certain modalities come in and go out of fashion, especially if they are linked to commercial enterprises, allowing us, in Pickstone's words, "to discuss the social life of medical things, and the ways in which we, and other cultures, draw lines (as well as connectors) between people and objects."<sup>5</sup>

The therapeutic use of electricity had been recognized for centuries before electrotherapeutic devices became popular in nineteenth-century Canada. As early as the first century a.d., for instance, the Roman physician Scribonus Largus prescribed standing on a torpedo fish for gout and headache (the fish gave off a strong electric discharge).<sup>6</sup> It was during the eighteenth century, however, that the work of Galvani, Volta, and others significantly raised the profile of therapeutic uses for electricity, which extended even to resuscitating "persons seemingly dead."<sup>7</sup> By the middle of the nineteenth century electrotherapeutics began its ascent in medical practice as several inventions led to the ready supply of electricity. Most relied on batteries that evolved dramatically by this time: some could produce electricity through simple chemical action; others produced a charge through magneto-electric action. Other portable devices employed both a battery and an induction coil, thereby permitting a smoother and higher intensity charge. Large static electricity generators and storage cells were designed for stationary institutional use.

Electrotherapeutic machines, and the staggering array of accessories available for them, were purchased by Canadian physicians and non-physicians alike who then might call themselves medical electricians; these practitioners could learn the principles and practices of electrotherapeutics from many texts devoted to this subject by this time, such as Dr Alfred Garratt's *Electro-Physiology and Electro-Therapeutics Showing the Best Methods for the Medical Uses of Electricity* (Boston, 1860), Dr William A. Hammond's translation of *Electricity in its Relations to Practical Medicine* (New York, 1869), or Dr C. M. Haynes's *Elementary Principles of Electro-Therapeutics for the Use of Physicians and Students* (Chicago, 1894). They could

purchase their equipment from instrument supply catalogues, massive encyclopedic compendia — often up to 1000 pages in length — whose sections on medical electrotherapeutics sported electrodes, rheostats, rheotomes, batteries, metallic brushes, electrocauteries, cells, ammeters, voltmeters, and so on.<sup>8</sup> Not surprisingly, the United States was the primary source for most of this apparatus, but it was also the location of many of the institutions where Canadians might train in electrotherapeutic techniques. As Lisa Rosner has shown as well, it was American electrotherapeutists who founded and supported numerous professional journals and organizations devoted to the study and promotion of this fledgling medical specialty.<sup>9</sup>

When suitably equipped, Canadian physicians could serve their patients by either of two means. First, they might offer electrotherapeutic treatment in addition to their regular medical practice. Ample evidence from physicians' estates, publications, and personal records reveals this part of their practice in Victorian Canada. The estate of Dr Joseph Hamilton of Toronto (who died during the 1847 typhus epidemic) for example, included a "magnetic machine" along with other typical medical instruments of the day (that is, tooth puller, cupping instrument, and so on). Similarly, when the possessions of Montreal physician Amable Simard were sold in 1853, the auction catalogue highlighted his valuable library, medical instruments, galvanic battery, electrical jars, and magneto-electrical machine.<sup>10</sup>

Around the same period Dr Robert L. MacDonell of Montreal recounted memories of his cases and those of his mentor in Dublin who employed electrogalvanic therapy; claiming that he himself introduced this technology to Montreal in 1846, MacDonnell expounded on electrotherapy because it was particularly efficacious for treating women with disorders of the menses. It was, he noted, "by no means necessary to put [the] patient to great torture by increasing the strength of shocks;" additionally, he observed, "all necessary manoeuvres can be completed without removing the bed-clothes." Without exposing the person of the patient, the physician could thus maintain an appropriate level of decorum.<sup>11</sup>

The patient records of one Ontario physician, James Langstaff of Richmond Hill, show that throughout the 1870s and 1880s, and as early as 1861, he used electrotherapeutic apparatus in his practice. For Langstaff, conditions that indicated this form of treatment included joint

pain, migraine, paralysis and even a type of psychological derangement. Apparently, medical electricity provided his patients with some relief, or it would not have seemed efficacious enough for Langstaff to cart the necessary equipment around with him when he went on housecalls.<sup>12</sup> It is more than likely that Langstaff developed his knowledge of electrotherapeutic technique while a student at Guy's Hospital in London in the 1840s. Dr Golding Bird actively promoted the practice of electrotherapeutics at Guy's, where he would appoint students as clinical clerks to observe patients and record results obtained in the hospital's "electrifying room." James Langstaff himself was a clerk for Bird.<sup>13</sup>

During this same period, the Toronto doctors J. Adams and Abner Mulholland Rosebrugh also employed and promoted electrotherapeutics as adjuncts to their medical practices. Adams, whose main form of medical practice was homoeopathy, published a small book for the general reader entitled *Electricity: Its Mode of Action upon the Human Frame, and the Diseases in which it has Proved Beneficial* (Toronto, n.d.) in which he outlined how electricity was "nature's own most appropriate remedy," especially in chronic conditions. Adams advertised in the *Toronto Globe* that he especially treated debility and specialized in the "General Improvement of the Constitution."<sup>14</sup> Rosebrugh, too, wrote about electrotherapeutics, mainly articles for his colleagues in the *Canada Lancet* (the country's leading medical journal)<sup>15</sup> and *A Handbook of Medical Electricity* (1885). He also devised his own equipment.

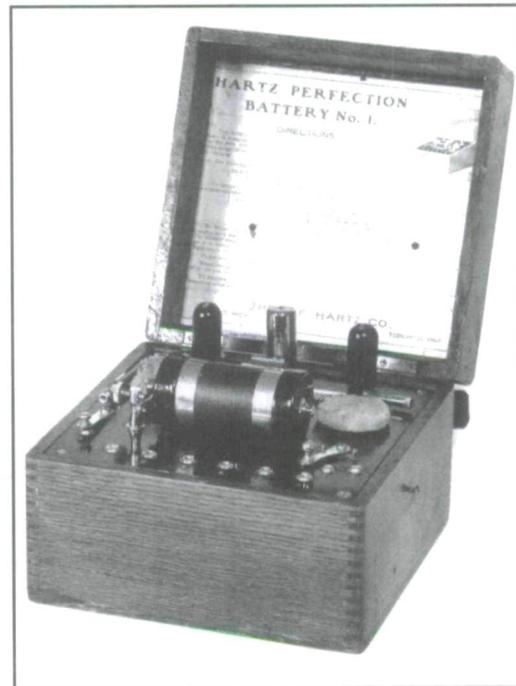
Early in the 1880s Rosebrugh designed a modified, portable galvanic-faradic battery that came housed in its own large wooden cabinet. This new battery incorporated a design feature that overcame a problem common to earlier batteries, namely dripping and spattering acid. Rosebrugh's battery could also be engaged without the time-consuming task of connecting each of the cells by a series of bolts and screws; his invention made this process "automatic:" simply opening or closing the cabinet actuated the battery. Thus possessing two advantages over similar devices — ease of use and clean operation — it was ideally suited for physicians who did not wish to become full-fledged "medical electricians." To develop the prototype for his battery, Rosebrugh called upon Charles Potter, an enterprising Toronto optician who also made other medical-scientific apparatus.<sup>16</sup>

A second way for physicians to advance this form of medical therapy was to become full-time



**Fig. 1**  
Electromagnetic machine  
1890–99;  
polished  
mahogany case;  
paper label  
pasted in lid

contains directions and images of the machine in use; crank handle turns brass bearings, leather covered belt turns velvet covered coils in the field of a horseshoe magnet. Manufacturer: Joseph Gray & Co. Truss Works, Sheffield, England. Dimensions 15 cm x 26 cm x 11.5 cm. (969.34.1, The Toronto Hospital, Princess Margaret Division)



**Fig. 2**  
Faradic battery  
1900–1919; polished oak case, fastened with a leather strap; printed label pasted inside lid gives directions for use: "This Battery is well suited to the needs of the Practitioner as also for family use;" contains electrodes, handles and connecting cords. Manufacturer: J. F. Hartz Co., Detroit, Michigan and Toronto, Ontario. Dimensions 15 cm x 21 cm x 20.5 cm. (971.7.1, The Toronto Hospital, Princess Margaret Division)

specialists and to establish their own electro-medical institutions. Two of Canada's earliest medical women adopted this route: Drs Jenny K. Trout and E. Amelia Tefft. Both Trout and Tefft graduated from Women's Medical College (WMC) of Philadelphia in 1875, and from 1877 until 1882 they offered "treatment to ladies by galvanic bath or electricity" in their electrotherapeutic institute on Jarvis Street in Toronto. According to Trout's biographer, Carlotta Hacker, it was Tefft who first introduced the young chronically debilitated

Jenny Trout to the medical merits of electrotherapeutics. A course of electrical treatment in the late 1860s undertaken at the suggestion of Amelia Tefft so uplifted the unhappy Trout that she later was able to travel to Philadelphia to study medicine (also with Amelia Tefft).

Upon their return to Toronto in 1875 the two women opened their gracious facilities to "treat ladies by galvanic baths or electricity." For the next seven years genteel Victorian ladies with a host of disorders were treated in the "splendidly furnished parlors...brilliantly furnished apartments...[and] exquisite bedrooms" of the Toronto Electro-Therapeutic Institution.<sup>17</sup> A host of unique "womens' problems" such as intrauterine complaints, mammary disorders and obstruction, and suppression or retention of menses were treated. In addition, other psychiatric and "social" disorders such as hysteria, fatigue, and chlorosis (a form of anemia) — conditions to which Victorian women were supposed to succumb — also could be treated electrotherapeutically. (A Dr Henry Mills, who identified himself as an "electrician," was in charge of the "Gentleman's Department.")

Although both Trout and Tefft trained at WMC, Tefft also studied at Philadelphia's Electro-Therapeutic Institute, an institution founded in the 1850s by Professor C. H. Bolles, who continued to operate it well into the later nineteenth century. Not surprisingly, then, a pamphlet published in Toronto in 1876 to promote the Toronto Electro-Therapeutic Institution was, in effect, an American production extolling the virtues of Bolles's Philadelphia institute. While lip service was paid to the "new Toronto Electro-Therapeutic Institution, whose principal and other assistants are students of Professor C. H. Bolles," all testimonials for cures and other beneficial treatment were American. Nonetheless, this source permits us to understand the philosophy of electrotherapeutics as practised by Tefft and her colleagues. In brief, consistent with the belief that the forces of electricity and magnetism permeated all aspects of Nature and, further, that all such forces were mutually dependent and convertible, "scientific men" considered electricity to be the "most rarefied and active element in the human system, it is the vivifier of blood, the promoter of digestion, secretion, and excretion." Within this conceptual framework, disease was understood as an "electrical depolarized" state of the organs that could be rebalanced to "normal polarity" (health) through the application of electricity.<sup>18</sup>

The apparent emphasis of the suitability of electrotherapeutic treatment for women's complaints points to the gendered nature of this modality by this time. Another indicator relates to the fact that women treated women, especially in light of the highly personal nature and mode of treatment for some conditions — for example, the insertion of electrodes in the patient's vagina. A male physician had hinted at this aspect of electrotherapeutics when he drew attention to the propriety of its use under the bed-clothes of female patients. The very technology itself raises a larger gender issue. Typically, a woman's association with appliances or equipment in the Victorian world denoted simplicity or the "domestic sphere." In the case of photography, for example, women were encouraged to use the technology only when it and the photographic process became simplified; then the implicit notion was that if a woman could operate it, it must be easy to operate. Similarly, with the development of household technology, ease of operation was equated with the flick of a switch by a woman's finger. Stereotypical concepts of masculine technology (for example, heavy machinery) and feminine technology (lighter equipment) abounded.<sup>19</sup>

The apparatus of electrotherapeutics — cells, rheostats, acid, switches, batteries, dials, meters, and so on — can be seen in this light as predominantly masculine in nature; it is a domain, both literally and metaphorically, of *power*. Yet in this environment of "boys with toys" were Drs Jenny Trout and Amelia Tefft. Not only did these women invade the male medical world as qualified physicians themselves, but they also successfully entered another male sanctum through their activities in the supposedly complex area of knobs, switches, circuits and electrical theory and practices. We do not know if Trout and Tefft deliberately engaged in electrotherapeutics to make a socio-political statement, but their activities nonetheless amply demonstrate the fact that women could operate this equipment and in so doing, that they need not limit themselves to the traditional woman's role or sphere. One may even suggest that electrotherapeutic technology helped to bridge male and female spheres of the Victorian world, with its implicit masculine concept of *power* combined with notions of "hearth and home" in its *domestic* applications.

Detailed examination of the gendered aspects of medical technology is beyond the scope of this discussion; however, it is worth noting that with respect to these stereotypical views of

masculine versus feminine technology, electrotherapeutics foreshadows a later debate. As Anne Witz and others have shown, a tension developed in the twentieth century between certain electrical medical technology, specifically X-ray equipment, and the "caring skills" associated with its application. On one hand were male radiologists, physicians who were medical decision makers and dominant, while on the other were radiographers — or, X-ray technologists in North America — who functioned in a technician role subordinate to the physician. The caring skills aspect of X-ray technology was so grounded in gendered stereotyping that the whole issue became contentious in a turf war among radiographers, as male practitioners fought unsuccessfully to exclude women from taking over what they perceived to be an essentially masculine technology.<sup>20</sup>

But while male and female physicians alike were active in promoting electrotherapeutics in the nineteenth century, the field was not restricted to medical doctors alone: Canada also had its own electrical entrepreneurs. One was Henry Palmer, who moved from London, Canada West, to Toronto, where he styled himself Professor of the Principles and Practice of Electrotherapy. Little is known of Palmer except that he invented a portable battery and also wrote a pocket treatise on the subject, *On the Application of Localized Galvanism in the Treatment of Disease* (Toronto, 1863). A complete description of Palmer's battery is available from the *British American Journal* of 1861, which described the device as "exceedingly simple in its construction," consisting of forty-two or more tubes that could be "put into action" by dampening them with dilute acetic acid or weak saline solution. Further, the purpose of this battery was to transmit "through any portion of the body a continuous stream of galvanism" — a task that it appeared to perform admirably, for the current generated was "continuous and unremitting, and when the little battery is enclosed in its card case, it will continue to generate the excitement for a considerable period of time... The current possesses sufficient force to overcome the resistance of the bodies of six or more persons in contact."

This inexpensive battery (\$6–\$8) was small enough to fit in a waistcoat pocket, and was a "striking contrast with the cumbersome and troublesome intermittent-current batteries" then in common use. The intensity of current could be varied, thus accommodating different therapeutic needs. Through its moist sponge

electrodes, the battery produced a sensation "by no means unpleasant," while using its silver-pointed electrodes produced the "most intense pain." Canadian doctors were impressed by Palmer's invention. Thomas J. Hayes, Resident Medical Officer of the Toronto General Hospital, Dr Robert Craik of the Montreal General Hospital, and Dr William Hingston of St Patrick's Hospital, also in Montreal, all reported on cases in which they had successfully used Palmer's battery.<sup>21</sup> In addition to endorsement from the medical profession, Palmer appealed directly to the public through newspaper advertisements to trumpet the merits of his galvanic device, claiming it was of "immense advantage" in the treatment of dyspepsia, indigestion, stomach ache, rheumatism, and neuralgia.<sup>22</sup>

By far the most successful of Canada's electrotherapeutic entrepreneurs was Professor S. Vernoy, an American by birth who, like Drs Tefft and Trout, studied at the Electro-Therapeutic Institute of Philadelphia and who moved to Toronto in 1876.<sup>23</sup> Some time after his arrival in Canada he founded the Vernoy Electro-Medical Institute of Toronto, which operated until the early years of the twentieth century. Like his competitors Tefft and Trout, Vernoy established his institution on what was then well-to-do Jarvis Street; there he offered electrical treatment for such varied conditions and diseases as acne, asthma, cholera, deafness, diabetes, epilepsy, gout, headache, rheumatism, uterine diseases, and whooping cough, to name but a few. Vernoy also sold domestic electrotherapeutic apparatus at his King Street store so that sufferers who wished to do so could treat themselves at home. Central to these activities was an aggressive marketing program for his own "Improved Family Battery," which could be bought for \$25.

Vernoy produced a series of handbooks from which interested clients could learn about the theory and applications of electrotherapeutics; more importantly, perhaps, readers could peruse the numerous signed testimonials on behalf of Vernoy's treatment. He also published a quarterly journal, *The Electric Age*, which extolled the virtues of electrotherapy, and he advertised extensively in the popular press. For example, Vernoy's half-page advertisement in the pages of the *Canadian Almanac* informed readers that

*With the proper knowledge of compounding  
the best qualities of Electricity and the use of*



**Fig. 3**  
Unknown Ontario practitioner using glass vacuum electrode to treat patient ca 1910–15. From the mid-nineteenth century until the early twentieth century, electrotherapeutics was practised by physicians, lay practitioners, and the general public alike; treatment could be administered in homes, offices, and hospitals. (Region of Peel Archives)

*new improved Medical Batteries the subtle fluid is made to obey the mandates of the will through nature's fixed laws, and thus act upon the most obstinate forms of disease, speedily changing the condition to health and vigor, and as kindly and quietly as the genial rays of the sun in spring-time mellow the frozen earth and infuse new life in the soil.*<sup>24</sup>

As reflected in his own admittedly self-serving publications, Vernoy's activities merit further analysis. His ninety-odd page *Handbook and Guide to Domestic Electropathy* in 1884 captures much of the spirit of this Victorian phenomenon. It is at once an unabashed publicity vehicle for his institution, services, and products and is replete with testimonials and advice — the tell-tale signs of the Victorian entrepreneur and self-promoter. As Drs Tefft and Trout similarly advertised their wares in pamphlet form (notwithstanding its American origins), the line between *professional* and *entrepreneurial* practices seems a fine one.

A closer reading of Vernoy's text reveals that it is more than simple puffery for his institute. In effect, like Professor Bolles, Vernoy outlined a *quasi* medico-philosophical system based on the relationship between electricity and physiology. For Vernoy, because the majority of disease arose from the "neuro-vital fluid being thrown out of balance" or a change in polarity of the nervous system, controlled electrical stimulation could be employed to return the body to its natural balance and health. In this view, rheumatism became a "positive" condition, and its treatment required one "to place the

'negative' as far from the positive as conveniently be done, and at a lower point on the body." For uterine diseases, Vernoy declared that "Electricity is the ladies' best friend, and there is no doubt about it." According to him, a variety of "positive" or "negative" conditions such as leucorrhoea, falling of the womb, or varicose veins were to be treated by appropriate placing of electrodes conducting mild to medium charges for specified times.<sup>25</sup>

Supplementing his own information were the printed testimonials of satisfied Canadian customers who had either treated themselves or been successfully treated at Vernoy's Jarvis Street establishment. Lawyers, policemen, ministers, merchants, and others all recounted how electro-medical therapy had brought relief. Their anecdotal reports should not be construed as a justification for this entire system; rather, they suggest that this therapy probably was effective for some conditions.<sup>26</sup> Noteworthy, too, is the fact that for many sufferers, electrotherapeutic treatment may have eliminated the perceived need for invasive surgery — often the only recognized alternative to medication. As Lisa Rosner has argued with respect to the United States, many surgeons objected to the use of electricity, for any temporary relief of pain the patient enjoyed could mean that the source of the problem had not been eliminated; understandably, perhaps, surgeons believed that only timely surgical intervention could alleviate the condition.<sup>27</sup>

Professor Vernoy cannot be denied his longevity, if not his success, for thirty years later he produced the pamphlet *Electrocure*, still extolling the virtues and services of his now-named Vernoy Electro-Medical Sanatorium on Jarvis Street. The theory of medical electricity is still to be found in the pages of this 1905 publication; so too are the testimonials, along with the list of treatable diseases, but, overall, this Edwardian document is less strident than its Victorian antecedents.

Gone is the air of the medicine show or the printed patter of the huckster. In their stead, new themes appear. First, to justify the continued validity of electrotherapeutic treatment, Vernoy pointed out that many medical schools and hospitals were offering lectures and courses of treatment. Second, he claimed that medical electricity was more effective than drug therapy, regardless of whether one adopted an allopathic or homoeopathic perspective. Third, he suggested unwary clients should avoid inferior apparatus, imitations, and quackish electro-gadgets that

may arise on the market. Finally, Vernoy not only advocated buying his product for home use but suggested that clients set up their own businesses. As no physician's licence was required, and as any man or woman of "ordinary intelligence" could learn the methodology, then a good source of revenue could be obtained.<sup>28</sup>

Though intended to promote electrotherapeutics, Vernoy's new themes ironically hint at reasons for its demise. Despite its apparent success during the nineteenth century, by the early decades of the twentieth century its general appeal began to lose ground. Electricity was no longer magical or mysterious, but was becoming commonplace as it heated and lighted homes. Doctors began to turn their attention away from this type of therapy in favour of new, relatively safe biochemical drug compounds that were effective in ameliorating pain. For example, in Germany during the late 1890s, Bayer began to publicize the analgesic effects of acetylsalicylic acid, or aspirin. Significantly, too, the Canadian medical profession was becoming less tolerant of non-medical practitioners who encroached on the domain of medicine. Finally, with development of X-ray technology, hospitals began to develop "electrical departments" that might include radiology equipment, electrotherapeutic devices, diathermy, ultra-violet apparatus and so on.

For example, in 1889 the Toronto General Hospital appointed Dr Charles Rea Dickson to its staff as an electrotherapist; a decade later, Dickson's staff would oversee the X-ray unit at the hospital. In 1890, Dickson also became electrotherapist for Toronto's Hospital for Sick Children.<sup>29</sup> Thus, where individual physicians previously employed electrotherapy, by the turn of the century it was being formally co-opted through incorporation in hospital departments along with related diagnostic and treatment technology. Although the integration of electrotherapeutics into broader based medical therapies tended to undermine it as a distinct modality, by the same token it increased its respectability. Similarly, granting physical space to this more comprehensive idea of electrotherapeutics within the hospital also aided in making the "new" electrotherapeutics appear less dubious in the eyes of some physicians.<sup>30</sup>

But even if there was a range of opinions among doctors over the clinical worth of electrotherapeutics, at the very least it could be a useful marketing tool. When the Homewood Retreat, a private psychiatric asylum in Guelph, Ontario, purchased electrotherapeutic



equipment in 1915, its medical superintendent and board of directors did so less for therapeutic reasons than for its value as good advertising; the prospectus for Homewood that year thus emphasized that "Electrical machines are in evidence... for the treatment of pain, insomnia, paralysis, etc., that may afflict any of its patients. The devices are the best that can be devised." Despite the installation of this equipment at Homewood, it was, for the most part, not employed in the treatment of its psychiatric patients.<sup>31</sup>

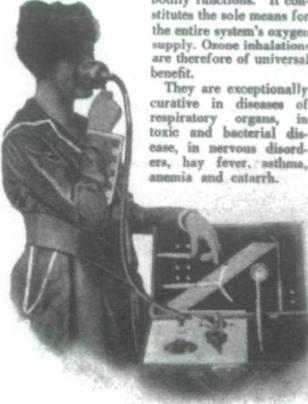
Rather than becoming wholly extinct, then, electrotherapeutics evolved. Later, around the 1920s, a new generation of equipment for home use appeared, consisting of evacuated glass tubes that emitted ultra-violet rays when an electrical charge passed through them; this treatment proved useful in treating some skin ailments. Similarly, other "self-help" devices were promoted in the United States, such as Gaylord Wilshire's I-ON-A-CO, an electromagnetic belt that the inventor claimed could both cure and beautify; a similar product was marketed in Canada as the "Theronoid" belt. These personal appliances were often criticized due to the sweeping claims made by their manufacturers.<sup>32</sup>

Other imperatives may be implicated in pushing electrotherapeutics as a purely commercial venture out to the margins of mainstream medical practice. For example, the early twentieth-century activities of

**Fig. 4**  
High frequency apparatus 1920-29; black leatherette-covered case with metal corners, clip fasteners, sliding lock and leather-covered handle; lined with velvet; lid is fitted for eight glass vacuum and metal electrodes; case compartment contains ozone inhaler. Manufacturer: Charles A. Branston Co., Toronto, Canada. Dimensions 20 cm x 41.5 cm x 27.5 cm (978.17.1, The Toronto Hospital, Princess Margaret Division)

**Fig. 5**  
 Branston Catalogue No. 15 contains 1921 price list (missing pages 27 to 28) and information about the therapeutic uses of the machine in the home for the benefit of both men and women. (The Toronto Hospital, Princess Margaret Division)



<p style="text-align: center;"><b>Ozone</b></p> <p><i>Is given by our Combination Models 25 and 29.</i></p> <p><b>OZONE</b>—Ozone increases the oxygenation of the blood and tissues, increasing oxyhemoglobin (red blood corpuscles charged with oxygen) and also increasing the number of red blood corpuscles. Germs are destroyed by it, and it has been shown capable of so thoroughly disinfecting sewage that the filtered water was pronounced suitable for drinking purposes.</p> <p>There are some diseases in which it is of particular benefit. Among these are anemia, all diseases of the respiratory organs, including tuberculosis, infectious diseases, and all conditions where there is imperfect oxidation and impaired nutrition.</p> <p>Ozone exists in country districts more than in towns, and is a very intense germicide. The oxidizing effect of the ozone acts on the germs and bacteria in such a way as to destroy them.</p> <p>Ozone is decidedly the most important element in tissue building. The function of breathing is the most intensely vital and important of all bodily functions. It constitutes the sole means for the entire system's oxygen supply. Ozone inhalations are therefore of universal benefit.</p> <p>They are exceptionally curative in diseases of respiratory organs, in toxic and bacterial disease, in nervous disorders, hay fever, asthma, anemia and catarrh.</p>  <p style="text-align: center;">18</p> <p style="text-align: center;"><b>CHAS. A. BRANSTON CO.</b></p>	<p style="text-align: center;"><b>Men Should be Interested</b></p> <p>It gives a man poise and self-confidence to have a fresh, healthy appearance, and well-groomed head of hair. To look really "clean cut" greatly aids him in business as well as in social affairs. A man with a sallow, muddy complexion, though he be clean-shaved, does not make as agreeable an impression as the man with a healthy, ruddy complexion. A bald head has never added to the appearance or dignity of any man. It is a thoroughly established fact that there is no reason why any man should become bald, or have a sallow, pimply, muddy skin. A few moments use of The Branston Generator after shaving will remove all soreness of the skin. It produces an agreeable, refreshing feeling, and leaves the skin perfectly smooth and radiating with the color of perfect health.</p> <p style="text-align: center;"><b>Weak Men Quickly Benefited</b></p> <p>The Branston Generator aids in supplying new life to the tired run-down system. Weak men are quickly benefited through Violet Ray treatments. Do not spend hundreds of dollars for poisonous drugs any longer when you can get the benefit of these natural powers at such a small cost.</p> <p style="text-align: center;"><b>Prostatic Troubles</b></p> <p>The results following the High Frequency treatments of all forms of prostatic diseases are extraordinary. Prominent doctors report 90 per cent. cures in all cases, with no case in which perceptible improvement was not present. (See Eberhart's Manual.)</p> <p style="text-align: center;"><b>Loss of Vigor</b></p> <p>Nothing will put the fire of life into you as will The Branston Generator, no matter how weak, worn down, "all in" you may feel. Not only does the first treatment take away the "tired feeling" and soothe the weary nerves, but it stimulates and refreshes the spring of life itself. A single treatment will make you feel like a new person.</p> <p style="text-align: center;">19</p> <p style="text-align: center;"><b>CHAS. A. BRANSTON CO.</b></p>
--	--

to the elite. In 1929 it underwent extensive renovations to add a complete complex billed as a health facility for the "cure of disability and disease." The new complex was intended for pleasure as well, as the hotel made clear: guests could plunge in the new swimming pool, then "rest on the luxurious miniature palm beach equipped with multiple sets of sun ray lamps." So fitted out, the Chateau Laurier became the "most modern and complete installation of its kind on the continent."

Its different baths, massage rooms, and colonic and other douche chambers merit mention, but the electrotherapeutic rooms were the focal point of the operation. The range of apparatus and treatments then available could not but

"William Jones, M.D., D.Ps., D.Os., Electro Therapist [sic], Phrenologist and Optician," who went to great pains to note that he was "not registered or practising in Medicine or Surgery in Canada," probably did little to further the credibility of electrotherapy. By associating electrotherapeutics with the by-then discredited practice of phrenology, Jones, who operated in Hamilton, Ontario, all but ensured its ridicule by physicians. Should Jones choose to read the skulls of his clients to measure their mental faculties, sentiments and aptitudes — or, by his own admission, "would [he] rather lead others in the right path for health, purity and success than be the Premier of Canada" — then he was more or less free to do so. But in so doing, his actions would suggest to many that he was offering a form of entertainment, not a medical service.<sup>33</sup>

Another example of the changing times was the creation of the electrotherapeutic department in Ottawa's Chateau Laurier Hotel. Since its opening in 1912, this landmark hotel catered

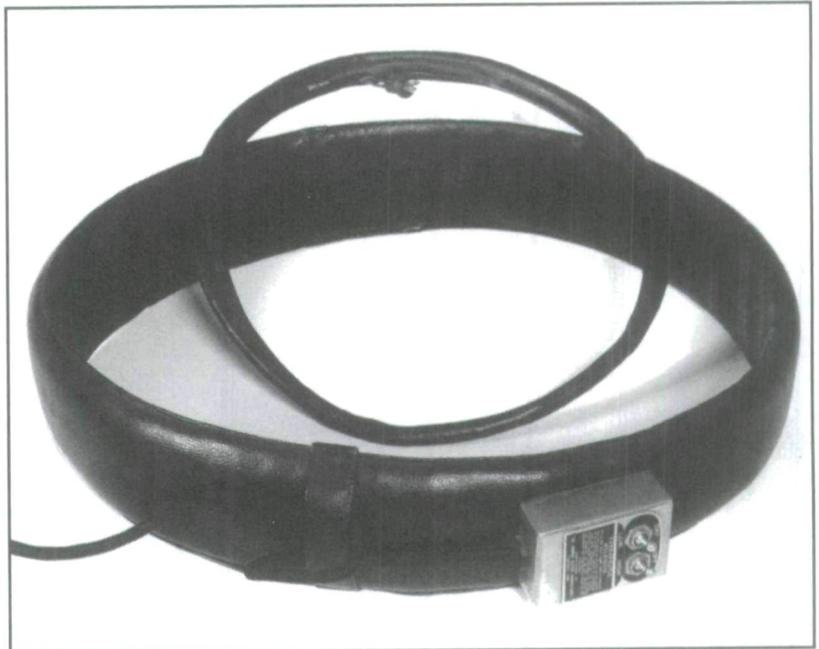
be impressive: quartz rays for treatment of tuberculosis, infantile paralysis (polio), and rheumatism; infra-red lamps for kidney and bladder problems; ultra-violet ray treatment for rickets; diathermy for dermatological and other, more deep-seated problems; autocondensation cushion for nervous diseases; electric light cabinet; and Schnee baths, which operated by a range of electric currents that introduced different ions and chemicals into arthritic joints. These, and all other treatments available in the hotel, were under the supervision of Mr James F. Ball, an electrotherapist who had gained twenty-five years of experience at European spas and health resorts such as Marienbad, and at a large British electrotherapeutic hospital during the First World War.<sup>34</sup>

Despite the completeness of the Chateau Laurier's facility, it operated for only about a decade. In addition to the socio-economic impact of the Depression and the Second World War, by the 1940s the *raison d'être* of such a health complex disappeared. Even the

successful, palatial establishment that was John Harvey Kellogg's Battle Creek Sanitarium in Michigan, which the newly equipped Chateau Laurier seemed to emulate, began to falter during the 1930s and ceased active operation by the early 1940s.<sup>35</sup> While the Laurier spa made claims about the healthful benefits that might accrue from its electrotherapeutic and other facilities, the more sybaritic and indulgent aspects were never understated. Such a connection — which might have done something to promote the merits of electrotherapy in public and professional eyes — could be detrimental. Due to the exploitation of the commercial and pleasurable over the purely therapeutic, electrotherapy qua system again slipped further away from mainstream medicine.

In summary, then, what are we to make of electrotherapeutics, its devices, and its practitioners in Canada during the period 1840s to 1940s? As this brief introduction has shown, from about the mid-nineteenth century until the turn of the twentieth century, electrotherapeutics was practised by medical and non-medical Canadians alike. Second, sufficient interest in this form of therapy prompted a number of Canadians to design their own apparatus and write about it. Their writings have often survived, but unfortunately the fate of many of these devices remains unknown. Third, medical electrotherapeutics was often linked to commercial endeavours, allowing it to become popular. Fourth, published testimonials indicate that some forms of medical electricity may have brought relief to sufferers, especially those with chronic ailments. Physicians increasingly changed their view of electrotherapeutic technology as an all-embracing medical system or panacea to cure all manner of aches, pains, and ailments.

Beginning in the twentieth century, electro-medical devices were used to diagnose and, on occasion, to treat specific conditions; electrotherapeutics was used more routinely as an adjunct to mainstream medical therapy, rather than as a self-sustained alternative to it as some radiologists, surgeons, dermatologists, physiotherapists and general practitioners assimilated it into their therapeutic armamentarium. Superficially, this situation harkened to the early days of Victorian electrotherapy when doctors might occasionally employ it in addition



to other therapies then in vogue, but the institutional development of such electrotherapeutics as X-ray therapy, diathermy, and, later, electroconvulsive shock therapy distanced it from its domestic Victorian counterpart.

Finally, viewing the history of electrotherapeutics qua medical technology is revealing. As John Pickstone has indicated, analyzing the "social life of medical things" such as electromedical apparatus helps to demonstrate that their study should "no longer appear as a cabinet of wonders or curiosities."<sup>36</sup> From the vantage point of this study we know that male and female physicians, self-styled "professors," and lay persons purchased electrotherapeutic apparatus and employed them for personal relief and for professional gain in homes, offices, hotels, institutions, and hospitals. We may also conclude that lines of medico-historical demarcation, while convenient, may distort our understanding of a past practice such as electrotherapeutics. Current distinctions such as domestic versus institutional, professional versus entrepreneurial, learned versus quackery, mainstream versus alternative, and generalist versus specialist, all become somewhat problematic in a past practice that cut across many of these lines.

**Fig. 6**  
Therapeutic solenoid 1930–39; circular belt covered in leatherette; control box and electrical cord mounted on exterior surface. Dimensions 10 cm x 48.5 cm diameter. Manufacturer: The Harmony Electro Manufactures, Toronto, Ontario. (985.14.1, The Toronto Hospital, Princess Margaret Division)

## NOTES

1. Graeme Gibson, *Perpetual Motion* (Toronto: McClelland and Stewart, 1982), 46. The British television series *Bramwell*, which portrays the challenges and adventures of a woman physician in Victorian London, devoted one episode to the use of electrotherapeutics. Similarly, T. Coraghessan Boyle's novel *The Road to Wellville* (1993) and the film of the same name (1995), which are semi-fictionalized accounts of life at John Harvey Kellogg's Battle Creek Sanitarium, highlight electrotherapeutics, including the sinusoidal baths (or, as they are referred to in the film, "suicidal baths").
2. John E. Senior, "The Bakken: A Library and Museum of Electricity and Life," *Caduceus: A Museum Quarterly for the Health Sciences* 4 (Autumn-Winter 1988): 74-89.
3. The Canadian Museum of Health and Medicine at The Toronto Hospital is currently a jointly-sponsored project founded on the extensive artifact collection originally housed in the Academy of Medicine, Toronto.
4. The more specialized studies include Lisa Rosner, "The Professional Context of Electrotherapeutics," *Journal of the History of Medicine and Allied Sciences* 43 (1988): 64-82; Iwan Rhys Morus, "Marketing the Machine: The Construction of Electrotherapeutics as Viable Medicine in Early Victorian England," *Medical History* 36 (1992): 34-52; Takahiro Ueyama, "Capital, Profession and Medical Technology: The Electro-Therapeutic Institutes and the Royal College of Physicians, 1888-1922," *Medical History* 41 (1997): 150-81; and Margaret Rowbottom and Charles Susskind, *Electricity and Medicine: History of Their Interaction* (San Francisco: San Francisco Press, 1984).
5. John Pickstone, "Objects and Objectives: Notes on the Material Cultures of Medicine," in *Technologies of Modern Medicine*, ed. Ghislaine Lawrence (London: Science Museum, 1994), 13-24, 22.
6. See Peter Kellaway, "The Part Played by Electric Fish in the Early History of Bioelectricity and Electrotherapy," *Bulletin of the History of Medicine* 20 (1946): 112-37.
7. See David C. Schechter, "Early Experience with Resuscitation by Means of Electricity," *Surgery* 69 (1971): 360-72. For an overview of the development of electrotherapeutics, see Schechter, "Origins of Electrotherapy I and II," *New York State Journal of Medicine* 71 (1971): 997-1008, 1114-24; and Nicholas A. Cambridge, "Electrical Apparatus Used in Medicine before 1900," *Proceedings of the Royal Society of Medicine* 70 (1977): 635-41.
8. See, for example, Charles Truax, *The Mechanics of Surgery* (1894), 235-69 (reprinted with an introduction by James M. Edmonson, San Francisco: Norman Publishing, 1988), which outlines the numerous pieces of equipment available for electrotherapeutic treatment. Canadian medical instrument catalogues circa the 1930s continued to list electrotherapeutic apparatus; see *Catalogue of Surgical Instruments, Office and Hospital Equipment* (London, Ontario: W. E. Saunders, n.d.).
9. Rosner, "Professional Context," 68-69.
10. Jennifer J. Connor, "Estate Records and the History of Medicine in Ontario," *Canadian Bulletin of Medical History* 10 (1993): 97-114, see p. 105; *Catalogue of Valuable Medical Library, Instruments, Galvanic Battery & c...* (Montreal, 1853).
11. Robert L. MacDonell, "Observations on the Nature and Treatment of Various Diseases 1. On the Utility of Electro-Galvanism in Amenorrhoea and Dysmenorrhoea," *British American Journal of Medical and Physical Science* 2 (1846-47): 61-64.
12. Jacalyn Duffin, *Langstaff: A Nineteenth-Century Medical Life* (Toronto: University of Toronto Press, 1993), 87-88.
13. Morus, "Marketing the Machine," 37; and Duffin, *Langstaff*, 22. At least one of Golding Bird's publications was reprinted in a Canadian medical journal for the education of doctors; see "On the Employment of Electro-Magnetic Currents in the Treatment of Paralysis," *British American Journal of Medical and Physical Science* 2 (1846-47): 325-26.
14. "Debility" [advertisement], *Globe* (Toronto), 16 January 1863, p. 3. As a homeopathic physician, Adams was a follower of the sectarian medical practice that believed in the diluted powers of certain drugs. See J. T. H. Connor, "'A sort of *felo-de-se'*: Eclecticism, Related Medical Sects, and Their Decline in Victorian Ontario," *Bulletin of the History of Medicine* 65 (1991): 503-27; J. T. H. Connor, "Homeopathy in Victorian Canada and Its Twentieth-Century Resurgence: Professional, Cultural and Therapeutic Perspectives," in *Culture, Knowledge and Healing: Historical Perspectives of Homeopathic Medicine in Europe and North America*, ed. Robert Jütte, Guenter B. Risse and John Woodward (Sheffield: European Association for the History of Medicine and Health Publications, 1998), 111-38.
15. See A. M. Rosebrugh, "Electrotherapeutic Apparatus," *Canada Lancet* 12 (1878-79): 327-30; "Electro-Therapeutics," *Canada Lancet* 13 (1880-81): 161-67; and "Electricity in Treatment of Special Disorders," *Canada Lancet* 14 (1881-82): 97-101; 129-32.
16. A. M. Rosebrugh, "A New Medical Battery," *Canada Lancet* 15 (1882-83): 193-95. Potter also made an ophthalmoscope-camera for Rosebrugh; see A. M. Rosebrugh, "A New Ophthalmoscope for Photographing the Posterior Internal Surface of the Living Eye; With an Outline of the Theory of the Ordinary Ophthalmoscope," *Canadian Journal*, New Series 9 (1864): 81-92. For fuller details of Rosebrugh's life, see J. T. H. Connor, "Rosebrugh, Abner Mulholland," *Dictionary of Canadian Biography* 14 (Toronto: University of Toronto Press, 1998), 884-85.
17. See also Carlotta Hacker, *The Indomitable Lady Doctors* (Toronto: Clarke Irwin, 1974), 40-50. For additional background, see Lawrence Longo, "Electrotherapy in Gynecology: The American Experience," *Bulletin of the History of Medicine* 60 (1986): 343-66.
18. Archives of Ontario, Pamphlet 1876, no. 30, *Electricity: Its Wonders as a Curative Agent* (Toronto, 1876), 3.

19. Diana Pedersen and Martha Phemister, "Women and Photography in Ontario, 1839-1929: A Case Study of the Interaction of Gender and Technology," and Dianne Dodd, "Women in Advertising: the Role of Canadian Women in the Promotion of Domestic Electrical Technology in the Interwar Period," in *Despite the Odds: Essays on Canadian Women and Science*, ed. Marianne Gosztonyi Ainley (Montreal: Véhicule Press, 1990), 88-111; 134-51.
20. Anne Witz, *Professions and Patriarchy* (London: Routledge, 1992), chapter 6.
21. "Palmer's Electro-Voltaic Instrument," *British American Journal* 2 (1861): 230; "From Mr Thomas John Hayes," *British American Journal* 2 (1861): 201; "Robert Craik, M.D.," *British American Journal* 2 (1861): 201; "Notes of Cases in Which Mr Palmer's Voltaic Pocket Battery was used at St Patrick's Hospital, Under the Charge of Dr Hingston," *British American Journal* 2 (1861): 200-201. For additional information on the context of Canadian medical invention see, J. T. H. Connor, "Medical Technology in Victorian Canada," *Canadian Bulletin of Medical History* 3 (1986): 97-123, from which elements of the current discussion have been extracted.
22. "Palmer's Galvanic Battery" [advertisement], *Globe* (Toronto), 16 January 1863, 3.
23. For information on Vernoy, see his booklets entitled *Handbook and Guide to Domestic Electropathy: Being a Compendium of Information on the Home Treatment of Disease with Electricity* (Toronto, 1884); and *Electro-cure: The Principles and Methods of Curing Disease* (Toronto, 1905).
24. Advertisement, *Canadian Almanac* (Toronto, 1890), 199.
25. Vernoy, *Domestic Electropathy*, passim.
26. Vernoy, *Domestic Electropathy*, 63-83.
27. Rosner, "Professional Context," 73-74.
28. Vernoy, *Electro-cure*, passim.
29. Edward Shorter, *A Century of Radiology in Toronto* (Toronto: Wall and Emerson, 1995), 4; and J. T. H. Connor, "The Adoption and Effects of X-Rays in Ontario," *Ontario History* 79 (1987): 97-107.
30. Morus, "Marketing the Machine," 43.
31. Cheryl Krasnick Warsh, *Moments of Unreason: The Practice of Canadian Psychiatry at the Homewood Retreat, 1883-1923* (Montreal: McGill-Queen's University Press, 1989), 50-53, 182.
32. On Wilshire, see Dennis Stillings and Nancy Roth, "When Electroquackery Thrived," *IEEE Spectrum* (November 1978): 56-61, especially 60-61.
33. Broadsheet, "Phrenological Examination, William Jones," personal collection of one of the authors (J. T. H. Connor).
34. "Enterprising Chateau Laurier Now Offers Unique Therapeutic-Bath Facilities," *Canadian Hotel Review* (June 1931): 14-17; and *The Hydro and Electro Therapeutic Department, Turkish Baths and Swimming Pool of the Chateau Laurier Ottawa-Canada* (1930). We are grateful to Annemarie Adams, McGill University, for making these sources available to us.
35. Patsy Gerstner, "The Temple of Health: A Pictorial History of the Battle Creek Sanitarium," *Caduceus: A Humanities Journal for Medicine and the Health Sciences* 12 (Autumn 1996): 1-99.
36. Pickstone, "Objects and Objectives," 22.