

Collectors and Museums

Somewhere in our genetic structure, perhaps between the code for perfect pitch and the one for a tendency towards overweight, one may imagine lies the gene for collecting. It is one we apparently share with other species—sometimes practical, as with the pack rat; sometimes aesthetically or otherwise driven, as with the blue jay. And it can be a very significant motivating force in our lives.¹

Indeed, the collecting instinct is often directed in such a way that it is a defining element in our character. Long before settling on a career path, many a naturalist has assembled elaborate collections of birds eggs or leaves or rock samples. Charles Darwin is only one of numerous notable examples. He wrote that ‘By the time I went to this day-school my taste for natural history, and more especially for collecting was well developed.’ He described it as a ‘passion ... [that] was very strong in me, and was clearly innate....’² For others, collecting has been a relaxing avocation, independent of regular professional activities. Franklin Roosevelt and stamps, for instance.³ But what happens to these collections? For many of us, myself included, they end up tucked away in an attic storage box or scattered to grandchildren. (Darwin’s ended up in numerous museums, Roosevelt’s stamps were separated and sold at auction by his family after his death.)⁴ But many people have chosen to institutionalize their passions, thus creating permanent memorials to themselves. If the collector has enough money (or proper connections), he or she may achieve the ultimate goal of having the collection enclosed in a marble shrine—usually called a museum—with his or her name inscribed over the door. Lesser mortals are content with having their names attached to special collections in museums or perhaps to exhibition halls.

The point to be made here is that these collections do more than memorialize their compilers. Collectors help to shape museums, and therefore to shape the ways we present our cultural identities to ourselves and to others. Sometimes this is very conscious. Examples from the United States include Rolf Klep, who made his collection of maritime artefacts and artwork the centerpiece of a new Columbia River Maritime Museum in 1962, for the expressed purpose of drawing attention to the maritime heritage of the Northwest United States. With additional funds and objects from other sources this has become a successful museum that in 1991 was designated by the Oregon legislature as the official maritime museum of the state.⁵ On the other side of the country, George Hewitt

Meyers and his wife collected non-European rugs and textiles. These became the focus of the Textile Museum in Washington in 1925, which in turn has become a center for the study of textile traditions of non-Western cultures.⁶ Still another example is Earl Bakken who founded The Bakken: A Library and Museum of Electricity in Life in 1976 on the basis of his collection of electro-medical devices. His purpose was 'to further understanding of the history and applications of electromagnetism in the life sciences and to benefit contemporary society.'⁷ In 1949 Etta Cone left the extensive collections of twentieth-century art that she and her sister Clarabel had accumulated to the city of Baltimore for the purpose of 'improving the spirit of appreciation of modern art in Baltimore.'⁸ Whatever effect this may have had on the citizens of their city, the gift has had a defining impact on the Baltimore Museum of Art which has made the Cone bequest a cornerstone for continuing collecting efforts in twentieth-century art. The Museum of International Folk Life in Santa Fe, New Mexico, which opened in 1953, was based on the extensive collections of Florence Dibell Bartlett. She composed the museum's motto, 'The art of the craftsman is a bond between the peoples of the world.'⁹ The extent of the collections, but not the scope, was increased some five-fold by the addition of the collections of Mr. and Mrs. Alexander Girard in 1978.¹⁰ It is significant that both gifts stimulated substantial commitments by the state.

Often the transformation from private collection to public institution has been less self-conscious, with consequences that have been less predictable. Perhaps the most notable example is that of Hans Sloane (1660–1753), whose position as a physician to the social elite in London provided him with both income and contacts that would be important in exercising his collecting instincts. Eighteen months in Jamaica (1687–89) provided his first major opportunity to obtain a substantial number of natural history specimens, and on his return to London he quickly expanded his scope to include an encyclopedic range of man-made artefacts, ancient and modern. Over the years these were augmented by museum-size acquisitions from other collectors. When Sloane died, his will provided that all of these collections should be offered to the government for £20,000, to be paid to his daughters. After some efforts on the part of Sloane's trustees, Parliament agreed to the terms. This was to be arranged at no expense to the Treasury through the mechanism of a public lottery—a common eighteenth-century expedient—which in this case netted the new museum a little over £95,000. (It was also a particularly corrupt lottery, leading to the general abandonment of the process until its revival in the late twentieth century, when, one might say fittingly, the British Museum and other cultural institutions have again become beneficiaries.)¹¹

In New York, across the Atlantic and across two centuries, on a much smaller scale, the taxidermy collections of O. Carol Lempfert were the

stimulus for The Suffolk Museum of Stony Brook, chartered in 1942 as 'an association to increase and diffuse knowledge and appreciation of history, art and science, ... to protect historic sites, works of art, scenic places and wildlife from needless destruction, to provide facilities for research and publications, and to offer popular instruction and opportunities for aesthetic enjoyment...'¹²

Of particular interest, however, is a gift that reached from one side of the ocean to the other. Under the terms of James Smithson's will, in the event that his nephew should die without issue (as happened in 1835), his estate was left to the United States Government 'for the increase and diffusion of knowledge.' As is well known, the cash proceeds, which amounted to approximately \$500,000, were eventually placed in an endowment which funded the construction of a building (the present Smithsonian Castle) and paid for operating expenses in the early years. But there were also many mineral specimens, which were placed with other government collections in the Patent Office until 1857. In that year the Congress authorized expenditure of funds for the housing of these collections by the Smithsonian, augmenting a limited museum of natural history that had already been formed within its walls. Thus, although it is incorrect to suggest that Smithson's minerals were the cornerstone of the present museum enterprise in Washington, they were a significant part of his legacy which eventually led to this wide-ranging complex—the extent of which is far beyond anything that James Smithson could have imagined.

Other collectors have made their mark on the Smithsonian. Several (all art collectors) fit in the category, mentioned above, of individuals who were able to parlay their collections into full-blown museums. These include the (Charles Lang) Freer Gallery of Art in 1923, the (Joseph H.) Hirshhorn Museum and Sculpture Garden in 1974, the Arthur M. Sackler Gallery in 1987, the (Warren Robbins) National Museum of African Art in 1987, and the George Gustav Heye Center (in New York City) of the National Museum of the American Indian in 1994. Some, like the Freer in particular, have had very restricted collecting policies; others have been able to augment their holdings to a significant degree. But all have kept quite close to the scope envisioned by their founders. The result is an eclectic mix of art museums, the product, one might say, of 'targets of opportunity' that have appeared over the years.

One might add to this list the (Andrew Mellon) National Gallery of Art which opened to the public in 1941, and which has a loose administrative affiliation with the Smithsonian. Of special interest here is that Mellon financed a building that was much too large for his relatively modest collection of paintings, which was broad in scope and high in quality but numbered 115 (not counting American portraits). Other gifts were anticipated, and even before the museum opened Mellon's paintings were augmented by collections from Samuel Kress and Chester Dale, and

soon after from Joseph Widener, Lessing Rosenwald, and others. This gave the museum an extraordinarily fast start in its development as a world class institution.¹³

Indeed, it is the role of most donors to present their offerings to existing institutions. But this doesn't prevent them from shaping the directions those museums take. The Museum of American History is no exception, and thousands of collectors have helped to nudge it along one course or another. Let me take one area, electricity, as an example.

In 1847 the Smithsonian's Board of Regents determined 'That it is the intention of the act of Congress, and in accordance with the design of Mr. Smithson, that one of the principal modes of executing the act and the trust, is the accumulation of collections of specimens and objects of natural history and of elegant art...'¹⁴ Joseph Henry, Secretary of the Institution, was fundamentally opposed to a major commitment in this direction, fearing that concern for the care of collections would overwhelm his limited resources. But he chose naturalist Spencer Baird as his assistant secretary in 1850 and Baird, like virtually everyone in his discipline, had a large personal collection of natural history specimens. He brought them to Washington and continued to collect on an increasingly large scale. The term 'museum' began to be used in annual reports to describe these holdings as early as 1850. Henry succumbed officially in 1857, when Congress gave the Institution custody of several important government collections, together with \$4,000 per year to care for them. The museum took physical form in 1881, when the new Arts & Industries Building opened its doors.

The new museum continued to be dominated by natural history specimens. Visitor's guides in the mid-1880s described a modest number of relics of presidents (among other items, clothing from Washington, swords from Grant, a lock of hair from Lincoln), a printing press reputedly once used by Franklin, chemical apparatus from Joseph Priestley, and a miscellany of other 'historical' items. (It should be noted that there were also several boats and ship models in the Fisheries section.) But in the 1890s, under G. Brown Goode—a naturalist who had wide-ranging interests—the doors were literally opened to historical artefacts of all sorts. To achieve his goal of expanding the museum's mission, he quickly established a substantial curatorial staff—mostly with honorary, unpaid enthusiasts. It was these enthusiasts, many of them collectors—H. G. Beyer for Material Medica, J. E. Watkins for Transportation, S. R. Koehler for Graphic Arts—who determined the course that the museum would follow.¹⁵

One of Goode's curators was George Maynard. A telegrapher as a young man (which included a period in Lincoln's White House at the end of the Civil War), he was an entrepreneur who took advantage of the emerging electrical industry, selling equipment and installing telegraph and telephone lines in Washington. He knew or at least had business

relations with a number of the American pioneers like Alexander Graham Bell, Thomas Edison, and William Wallace. He also developed an interest in history, and in 1881 he joined the telegraphers' Old Timers Association, becoming its president ten years later. In 1892 he was named historian of the group and started a campaign to encourage collecting old apparatus. The result was a new organization, the Telegraph Historical Society of North America (1894) which under Maynard's guidance assembled a substantial number of early instruments, many of which formed the core of the Smithsonian's early holdings in this area.¹⁶ (For information about Maynard I am indebted to Richard Loomis who has shown me a copy of his unpublished biography of Maynard; other information appears in the Smithsonian Annual Reports for this period and from accession records.)

Maynard brought his collecting instincts to the Smithsonian in the spring of 1896 as honorary custodian of the electrical collections; a year later he began a two-decade career as a paid staff member. From this position he used his old network of friends and electrical colleagues to assemble artefacts related to the birth and growth of electrical communications and power. He acquired motors and generators representing the pioneering work of William Wallace, Elihu Thomson, Edwin Houston and Moses Farmer; and incandescent lamps tracing the inventions of Thomas Edison. In 1898 he obtained from Alexander Graham Bell some of Bell's experimental apparatus together with telephones associated with several of his chief competitors (assembled for patent litigation), and in 1901 the museum received a significant donation of items from the widow of Bell's chief rival, Elisha Gray.

In August 1903 Maynard succeeded to the position of curator of the technology collections, leaving no one specifically in charge of electricity. Nevertheless, he continued to influence collecting policy. In 1908 he acquired additional material from Bell; and that same year, when the Patent Office offered the Smithsonian the pick of its collection, it was Maynard who selected a number of important electrical models.

This remained the situation until Maynard's death in 1919. After that there was no one to steer the electrical collecting efforts, and with only one or two exceptions they remained moribund until the 1950s. At that point, in preparation for the new Museum of History and Technology (now National Museum of American History) the curatorial staff was increased by a factor of four, and the significance of those early collecting efforts became apparent. A separate section of electricity was re-established, covering communications and power as well as what might be called electrical science. This arrangement is quite different from what one sees in other museums and has clearly affected the way that collections have subsequently been developed and exhibited.

With one curator in charge of this wide a range of science and technology it is arguably true that collecting efforts have depended upon private

Figure 1.
A telegraph key from
Maynard's
Telegraphic
Historical Society.

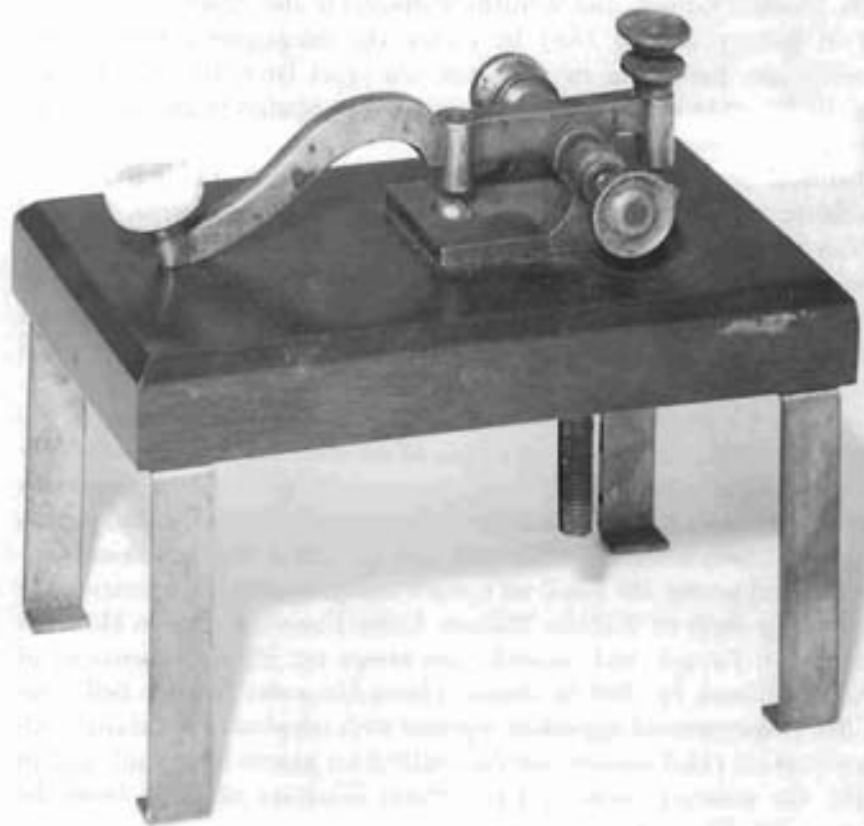


Figure 2. A model of
Edison printing telegraph,
selected by Maynard from
the Patent Office collection
in 1908.

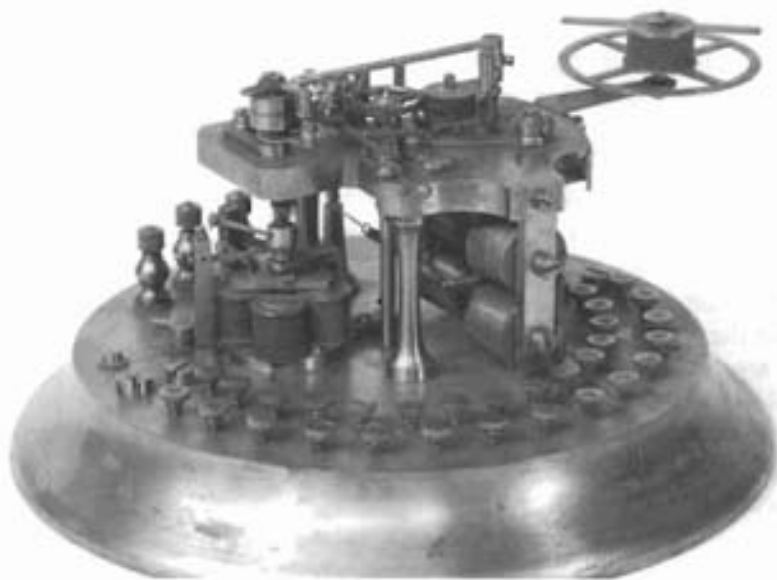
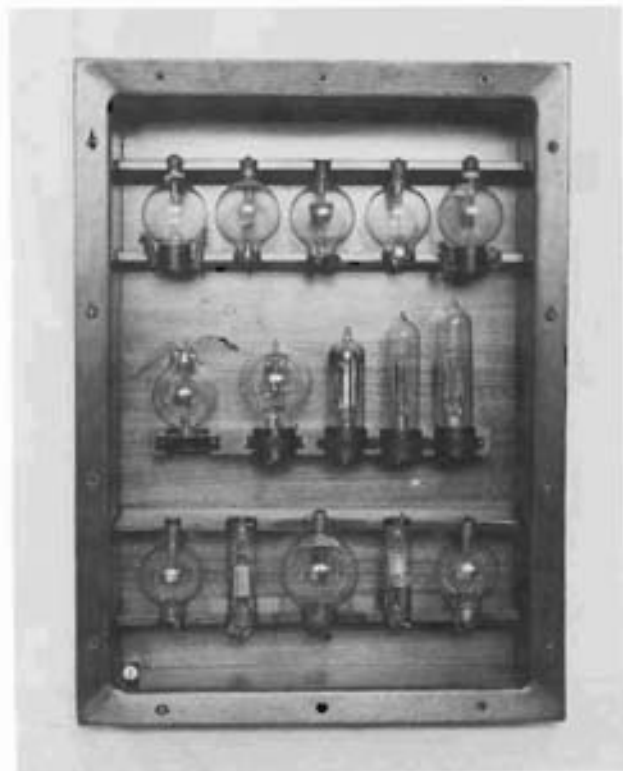




Figure 3. One of a number of radio receivers from L. C. F. Horle (actually given after his death by his wife, Susan).

Figure 4. Paul Watson contributed some 1300 vacuum tubes, but also the cases he had constructed to house them.



collectors more than might otherwise have happened. Whatever the case, collectors have been of considerable importance. In giving us their collections they provided the artefacts and implied judgements about what was significant; and they often stimulated the search for further acquisitions in the same area. Thus the Smithsonian's holdings in electric power were given greater validity in 1961 when it acquired the artefacts used by Malcolm MacLauren to illustrate his *The Rise of the Electrical Industry during the Nineteenth Century*. We came late to radio, and it would have been very difficult to have obtained a broad base without assistance from private collectors. The first of several was L. C. F. Horle in 1952, followed by a very large collection by Franklin Wingard a decade later. Most of the artefacts assembled by George Clark, lawyer and sometime historian for RCA, ended up at Dearborn, but his large and important archival collection came to the Smithsonian in 1959. Although we had acquired vacuum tubes from a variety of sources over the years, Paul Watson's collection gave a sense of comprehensiveness.

Figure 5. William J. Hammer in his study.



Among our more colorful benefactors was William J. Hammer. Associated with Edison at Menlo Park, he organized many of Edison's public exhibitions. He also was a compulsive collector. Especially impressive was his light bulb collection, which went to Henry Ford's museum at Dearborn. But the Smithsonian eventually (in 1962) acquired a significant number of items, many of them associated with Edison

There have also been the anonymous corporate collectors who, often with grudging (if any) support, managed to preserve significant examples of company history which eventually were presented to the Smithsonian (often in lieu of being dumped in the trash). Among the more important such collections are those from Weston Electrical Instrument Company in 1954, Western Union in 1972, and Texas Instruments in 1987. Each of these, significant in itself, stimulated further acquisitions in the area, respectively, of measuring instruments, telegraphy, and micro-electronics.

The last point can be made for even very small collections. In 1968 Priscilla Griffin de Moduit gave the museum an example of the first GE roaster (1908). At the time the Division of Electricity had virtually no electrical appliances. But this gift led directly to a campaign to assemble a modestly impressive number of such devices—ranging from hot plates

Figure 6. Hammer mounted his collection in several large cases. Most of the light bulbs, together with the cases, went to Henry Ford's museum in Dearborn. But a few found their way to the Smithsonian.



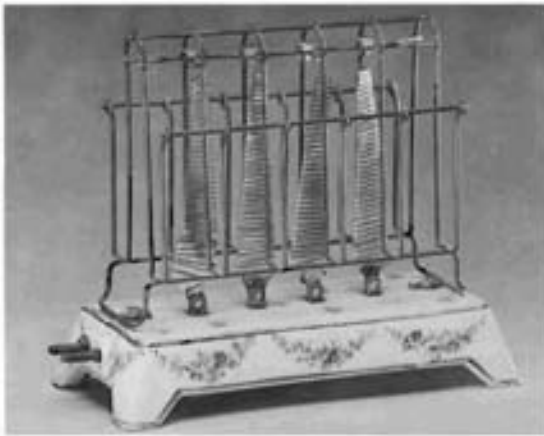


Figure 7. Mrs. de Moduit's 1908 GE toaster.

and coffee pots to washing machines and refrigerators. And this has proven to be of great assistance in helping the museum develop exhibits with broader social context.

What is true for Electricity is true for other collecting areas in the museum, including the Archives Center and the Library. And what is true here, by all indications, is true throughout the world. In their collections museums embrace the idiosyncracies, the character of their contributors. But in an era of increasing professionalism it can be difficult to see this in exhibits, which tend more and more to be political statements (in the academic as much as the social sense), and which use selected artefacts in the service of those statements. There are good reasons for continuing to display collections as collections. One is as a means of demonstrating the special origins of the particular museum. Another is to find in the passion of an individual collector evidence for a collective passion that a society can have for its past, especially as represented in artefacts.

* * *

Meters and motors, telegraphs and transistors, light bulbs and Leyden jars—there are a vast number of collectibles within the electrical ranks. In most museums they are grouped as electrostatics, power, telecommunications, microelectronics. Occasionally, as at the Smithsonian, these may all be combined in one happy curatorial family; but more frequently they are split off, either alone or with non-electric companions. Thus both the Science Museum and the Deutsches Museum have separate electric power sections, and they fold early electrostatics into physics. For the Science Museum, telecommunications is a stand-alone curatorial responsibility, while microelectronics and computers are linked; in the Deutsches Museum the three are connected together. The Musée des Arts et Métiers, which is joining us as the fourth sponsor of *Artefacts*, has been reconstituted with an expanded curatorial staff covering seven areas, with

electrical collections divided among Scientific Instruments, Energy, and Communications. These differences clearly reflect differences in the institutional histories, including undoubtedly the influences of individual collectors.

With a few exceptions, other museums lack a staff of curators sufficiently large to allow them the luxury of separating subject areas beyond very large categories. This means that clues to the collecting history are probably not readily apparent from the administrative structure, though occasionally it is clear from the physical structure that some kind of merger has taken place (as, for instance, a new building that signals the joining of the Telemuseum to the Tekniska Museum in Stockholm in 1975). It would therefore require much more information than is readily available to pursue this argument in taking a broader view of the growth of technical museums.

Instead, let me close by noting that electricity is well represented in museums throughout the world. Following is a compilation of those that I have visited personally (some, admittedly, not for many years) or about which I have secondary knowledge. I hope that readers will be encouraged to visit some of them, as it is convenient, and to add personal nominations to the list.

They are separated into groups. First is the large number (one might even say a surprisingly large number) of national museums of science and technology, all with significant electrical collections, often with scope extending beyond national borders. It should also be noted that not all of these encompass 'all' of science and technology. Indeed, telecommunications is a subject that is often left, at least for detailed examination, to another entity (more on this below). And transportation, because of the size of the objects, is also frequently treated elsewhere. The Smithsonian, for instance, has a separate museum for Air and Space. The Science Museum and Deutsches Museum have followed suit to the extent that they have established new structures for their aircraft collections, though retaining some portion in their home buildings. I might also note that the Smithsonian is unusual in incorporating science and technology into a general history museum. This junction was more or less clear in the original name, Museum of History and Technology. The current name, National Museum of American History, reflects an approach that attempts to integrate science and technology into broader historical concepts, though the collections themselves are organized in traditional fashion.

Second are museums that lack a national mandate but still have a collecting policy that is broad in subject matter but usually more restricted geographically. This focus can often make their exhibits more comprehensible, and more interesting, to the visitor.

Third is a small number of academically-oriented museums with narrowly conceived collections that are especially appealing to scholars.

Which is not to say that other museums don't also have academic connections or that these museums don't have exhibits that appeal to the general public.

Fourth are the telecommunications museums, which usually mark their origins from national postal-telegraph-telephone services though occasionally have been founded by other specialized interests.

Fifth are what I arbitrarily call specialized museums. Many of these are associated with individuals, others deal with narrow topics that are not conveniently included elsewhere.

1. National Museums.

Australia: Power House Museum (Sydney).

Austria: Technisches Museum (Vienna).

Canada: National Museum of Science and Technology (Ottawa).

China: China Museum of Science and Technology (Beijing).

Czech Republic: Narodni Technicke Muzeum (Prague).

Denmark: Teknisk Museum (Helsingor).

Finland: Tekniikan Museo (Helsinki).

France: Musée des Arts et Métiers, also known as the Musée National des Techniques, Conservatoire National des Arts et Métiers (Paris).

Germany: Deutsches Museum, or more fully as Deutsches Museum von Meisterwerken der Naturwissenschaft und Technik (Munich).

Great Britain: The Science Museum, more fully now known as the National Museum of Science and Industry (London).

Hungary: Hungarian Museum for Science and Technology (Budapest).

India: National Science Centre (Delhi).

Italy: Museo di Storia della Scienza e della Technica Leonardo da Vinci (Milan).

Japan: National Science Museum (Tokyo).

Mexico: Museo de Tecnologia (Mexico City).

Netherlands: Museum Boerhaave (Leiden).

Norway: Norsk Teknisk Museum (Oslo).

Poland: Muzeum Techniko NOT (Warsaw).

Romania: Muzeul Tehnic 'Prof. Ing. D. Leonida,' Naciolen Politechniceski Muzei (Sofia).

Russia: Polytechnic Museum (Moscow).

Scotland: National Museums of Scotland (Edinburgh).

Slovakia: Tecknicke Muzeum (Brno).

South Africa: Museum of Science (Johannesburg).

Sweden: Tekniska Museet (Stockholm).

Switzerland: Technorama da Schweiz (Winterthur).

2. Regional Museums:

Argentina: Museo Tecnológico 'Ingeniero Eduardo Latzina' (Buenos Aires).

Brazil: Museu de Ciencias (Sao Paulo).

Germany: Deutsches Technik Museum (formerly Museum für Verkehr und Technik) (Berlin) with collections related to energy and communications.

***: Landesmuseum für Technik und Arbeit (Mannheim).

Great Britain: The Museum of Science and Industry in Manchester has expanded considerably in recent years and has a broad collection of electrical apparatus, together with an extensive archive of the Electricity.

***: The Birmingham Museum of Science and Industry is located in quarters previously owned by Elkington & Co (electroplating) and features local technical history but has a significant eclectic collection of electrical items.

***: The Glasgow Art Gallery and Museum features technology of western Scotland, including a number of items related to William Thomson (Kelvin) (Glasgow).

***: The Science Museum in Newcastle includes important items from local pioneers Armstrong, Parsons and Swan.

India. Birla Industrial and Technological Museum (Calcutta). Although I have included the Delhi museum in the list of national technical museums, above, under the National Council of Science Museums responsibility for preserving the Indian technical heritage is shared with the Birla and Visvesvaraya museums.

***: Visvesvaraya Industrial and Technological Museum (Bangalore).

Japan: Chiba Museum of Science and Industry (Ichikawa-City) has a modest collection, including some electrical items.

United States: Henry Ford Museum and Greenfield Village (Dearborn) takes a national approach to its collecting, with a strong technical emphasis. Originally name the Edison Institute (and officially opening on the fiftieth anniversary of Edison's incandescent lamp) it holds a reconstruction of the Menlo Park compound and also of a Detroit 1880s generating station, together with much original apparatus. Other collections extend through the range of electrical technology.

***: New York State Museum (Albany), a general museum with strong technical emphasis.

***: South Carolina Museum (Columbia), a general museum with strong technical emphasis.

3. Academically-oriented museums.

England: Museum of the History of Science (Oxford), with a strong collection of electrostatic apparatus.

***: Museum of the Cavendish Laboratory (Cambridge), including apparatus associated with Maxwell and his successors.

Italy: Istituto e Museo di Storia della Scienza (Florence).

United States: Collection of Historical Scientific Instruments (Cambridge), including electrostatic instruments but also telephones and other items not necessarily linked to Harvard.

***: MIT Museum (Cambridge), with collections that are associated with MIT.

4. Telecommunications museums.

Argentina: Museo entel de Telefonía (Buenos Aires).

***: Museo Postal y Telegrafico 'Doctor Ramon J. Carcano' (Buenos Aires).

Austria: Post- und Telegraphen-Museum (Vienna).

Belgium: Musée des Postes et Télécommunications (Brussels).

Brazil: Museu de Telefone (Sao Paulo).

Canada: Bell Canada Telephone Historical Collection (Montreal).

***: Canadian Forces Communications and Electronics Museum (Kingston).

***: Telecommunications Museum of Canada (Brantford).

Chile: Museo Postal-Telegrafico (Santiago).

Denmark: Post- og Telegrafmuseet (Copenhagen).

***: Telefonmuseet (Copenhagen).

Finland: Posti- ja Telemuseo (Helsinki).

France: Centre National d'Etudes de Telecommunication (Issy).

***: Musée de Radio-France (Paris).

***: Musée d'Histoire des P.T.T. d'Alsace (Riquewihr).

***: Musée de la Poste et des Voyages (Amboise).

Germany: Deutsches Postmuseum (Frankfurt).

***: Deutsches Rundfunk-Museum (Berlin).

Great Britain: British Telecom Collection (Oxford).

***: British Telecom Museum (Taunton).

***: Museum of Communication (Edinburgh).

Hungary: Postamuseum (Budapest).

Ireland: RTE Broadcasting Museum (Dublin).

Italy: Museo Storico PT (Rome).

Mexico: Museo Postal (Mexico City).

Netherlands: Het Nederlands Postmuseum (The Hague).

Switzerland: Schweizerisches PTT-Museum (Bern).

Tunisia: Musée National des PTT (Tunis).

United States: Antique Radio Relay League Museum of Amateur Radio (Newington CT).

***: Antique Wireless Association Electronic-Communication Museum (Bloomfield NY), a large collection of early wireless and radio apparatus.

***: Museum of Broadcast Communications (Chicago IL), mainly recordings and documentation with some apparatus).

***: Museum of Independent Telephony (Abilene KS), representing non-Bell equipment from the days before the breakup.

- ***: New England Museum of Wireless and Steam (East Greenwich, RI).
- ***: Pacific Bell Museum and Archives (San Francisco).
- ***: Pavek Museum of Broadcasting (Minneapolis).

5. *Special museums*

Austria: Schlossmuseum (Linz), somewhat uncomfortably in this category, but which fortuitously has a collection of electrical and physical artefacts from an 18th-century Jesuit college.

Canada: Alexander Graham Bell Museum (Baddeck), near Bell's summer home in Nova Scotia, where he did much experimentation, but lacks much in the way of electrical material.

***: Hearts Content Cable Station, at the Newfoundland terminus of the first successful Atlantic cable in 1866, equipped with early 20th-century apparatus.

***: Hydro Hall of Memory (Niagara Falls), in Ontario Hydro generating station.

***: Musée Historique d'Electricité Labadie (Longueuil).

France: Musée Ampère et de l'Electricité (Poleymieux), including a nice collection of early 19th-century apparatus.

***: Musée Branly (Paris), in his laboratory.

Germany: Deutsches Röntgen-Museum (Remscheid).

***: Elektromuseum Heinrich-Mayer-Haus (Esslingen).

***: Elektrotechnisches Museum der HASTRA (Hannover).

***: Electrum: das Museum der Elektrizität (Hamburg).

***: Siemens Forum (Munich), which has been converted in part from its earlier museum format but still with an impressive collection of artifacts and archival material.

Great Britain: The Royal Institution (London) maintains Faraday's laboratory and preserves and exhibits artefacts used by him and his successors.

Italy: Il Tempio Voltiano (Como), in town of Volta's birth and death, includes some 200 artefacts from the period, most attributed to Volta.

Japan: Tokyo Electric Power Company Electrical Museum (Tokyo), in formation, with a substantial collection of apparatus from TEPCO.

***: Yokogawa Museum of Measurement (Tokyo), in formation, with an international collection of electrical meters.

Netherlands: Teylers Museum (Haarlem), with large van Marum electrostatic machine and other turn-of-the-nineteenth-century apparatus.

United States: The Bakken Library and Museum (Minneapolis MN), which includes a broad range of items in its medical-electrical collections.

***: Bradbury Science Museum (Los Alamos NM), based on apparatus from Los Alamos Laboratory.

***: Computer Museum (Boston)

- ***: Discovery Museum, formerly Sacramento Museum of History, Science & Technology (Sacramento), included here because of a substantial collection of appliances and power-related items from the Madsen Electric Company.
 - ***: Edison National Historic Site (West Orange, NJ), Edison's laboratory after 1886.
 - ***: Edison Winter Home and Museum (Fort Myers FL), with emphasis on apparatus used in experiments at that location.
 - ***: French Cable Station Museum in Orleans, terminus on Cape Cod of French Atlantic cables with early 20th-century equipment.
 - ***: Georgetown Energy Museum (Georgetown CO), on site of generating plant.
 - ***: Historical Electronics Museum (Baltimore, MD), with special emphasis on radar.
 - ***: Motorola Museum of Electronics (Schaumburg IL).
 - ***: Museum of Incandescent Lighting (Baltimore), a substantial collection of light bulbs.
 - ***: National Cryptologic Museum (Fort Meade MD).
 - ***: Schenectady Museum (Schenectady NY), local collections, including material from GE.
 - ***: U. S. Army Signal Corps and Fort Gordon Museum (Augusta GA).
 - ***: Western Museum of Mining and Industry (Fort Collins CO).
- Yugoslavia: Tesla Museum (Belgrade) with a modest amount of apparatus, much in the way of personal effects, and a substantial archive.

Notes

1. For a psychologist's view, see Werner Meunsterberger, *Collecting, an Unruly Passion: Psychological Perspectives* (San Diego, New York, London, 1995)
2. autobiography 22–23.
3. For more examples, see John Elsner and Roger Cardinal, eds., *The Cultures of Collecting* (London: Reaktion Books, 1994)
4. For Darwin, see Duncan Park, 'The *Beagle* Collector and his Collections,' in David Kohn (ed.), *The Darwinian Heritage* (Princeton, 1985), pp. 973–1019; for Roosevelt, communication from Frank Bruns, National Postal Museum, Smithsonian Institution.
5. Columbia River Maritime Museum, 'Background Information,' July, 1996.
6. 'The Past and Future of the Textile Museum,' *Textile Museum Journal* 1 (Dec. 1963), p. 62
7. Descriptive booklet, *The Bakken: A Library and Museum of Electricity in Life* (St. Paul, 1986); the name has since been shortened to The Bakken Library and Museum.
8. Exhibit label, Baltimore Museum of Art, 1998.
9. Judith Sellers, 'Florence Dibell Bartlett: The Prime Mover,' in Richard Polese, ed., *Celebrate! The Story of the Museum of International Folk Art* (Santa Fe: The Museum of New Mexico Press, 1979), 10–13.
10. Paul Winkler, 'Girard Foundation Collection Sparks Expansion Plans,' *ibid.*, 46–48.
11. Edward Miller, *That Noble Cabinet: A History of the British Museum* (Athens, Ohio: Ohio University Press, 1974); Carol Gibson-Wood, 'Classification and Value in a Seventeenth-Century Museum: William Courted's Collection,' *Journal of the History of Collections* 9, No. 1 (1997), 61–77; Arthur MacGregor, 'The Life, Character and Career of Sir Hans Sloane,' in Arthur MacGregor, ed., *Sir Hans Sloane: Collector, Scientist, Antiquary, Founding Father of the British Museum* (London: British Museum Press, 1994), 11–44; for the lottery see Marjorie Caygill, 'Sloane's Will and the Establishment of the British Museum,' *ibid.*, 45–68.

12. 'A History of the Museums,' in Susan Stitt, et al, eds., *The Carriage Museum: Souvenir Publication* (Stony Brook: the Museums at Stony Brook, 1987), 19–37.
13. Walker, p. 30. *John Walker, National Gallery of Art* (New York: Harry N. Abrams, 1975; David Finley, *A Standard of Excellence: Andrew W. Mellon Founds the National Gallery of Art at Washington* (1973: Smithsonian Institution Press, 1973)
14. quoted in Annual Report, 1888, p. 3.
15. See Smithsonian Annual Reports for this period.