It was the late Christopher Gilbert, whose interest in furniture covered such an astonishingly wide spectrum, who first introduced me to ‘lightning’ stools. I recall a conversation with Christopher and Gabriel Olive in the early days of the Regional Furniture Society, concerning wooden-seated stools with glass legs, which they had both encountered, coupled with the story that these had been used to stand on during thunder storms in the hope of insulation against lightning strikes. Another, even more colourful English West Country account associates them with tests for witchcraft.1

Until the growth of experimental science in the seventeenth century, explanations of lightning — and of other manifestations of electricity, observed in the unusual behaviour of lodestones, amber and jet when rubbed — tended to rely on magic and mythology. The Emperor Tiberius (a.d. 14–37) is said to have worn a laurel wreath for protection against thunder storms,2 and in post-mediaeval France it was supposed that the force of the lightning could be scattered by the ringing of church bells, although a number of bell ringers were struck and killed.3 One of the earliest works to attempt a more rational assessment is the treatise De Magnete, published in 1600 by Queen Elizabeth’s physician William Gilbert (who appears to have coined the word electricity, from the Greek for amber, elektron). During the eighteenth century all sorts of experiments were performed, and in England, America, France and Germany, attempts were made to unveil some of the mystery of electricity. The sense of excitement and the celebration of the birth of modern science from the superstitions of the past are vividly shown in paintings of the 1760s and 1770s by Joseph Wright of Derby. A leading figure in this movement was the Colonial American Benjamin Franklin (1706–90), whose Experiments and Observations on Electricity was first published in London in 1751 and during his lifetime ran to ten editions in four languages. It was his famous experiment with a kite and a key during a thunder storm in Philadelphia in 1752, that identified a common fluid source for friction electricity and lightning.4 One development from this was the lightning conductor, and although America had a higher incidence of lightning storms than Britain, by 1772 a number of important British buildings, such as St Paul’s Cathedral and Blenheim Palace, were protected by this device,5 Attempts were also made with rather less success to use electricity in horticulture and in medicine for relieving agues, blindness, palsy, hysteria and rheumatics.6 An electrical machine, used in shock therapy for ailments by John Wesley (1703–91), remains in his house in London (Figure 4).

However, it was another result of experiments, the discovery that the human body could be electrified and transmit charges, that seems above all to have captured the imagination of the civilized world. Naturally, the possibility of being struck by lightning did engender a degree of fear, but there is little evidence that this was any more of a concern in the eighteenth century than it is today. Indeed, Franklin advised persons

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who were apprehensive of danger from lightning that the safest place to be was in a hammock hung with silken cords at an equal distance from all sides of a room. He made no mention of a stool for the purpose. It would appear therefore that insulated stands and so-called ‘lightning’ stools were used for electrical experiments, whether at travelling lectures and public demonstrations, in scientists’ laboratories, or domestically as what might be termed the ‘executive toys’ of the age. The nature of the apparatus used varied, although the essential point was to insulate the body from losing the charge downwards into the earth, so that it could be passed on by other means. This insulation was sometimes achieved with wax or with a cake of resin, or, in the case of Dr William Watson, a tub of pitch (Figure 2). However, glass was found to be one of the best means of isolating an electrified body so as not to lose its charge: better than wood in which any dampness is liable to increase the conductivity. The unique properties of glass meant that it was much used in scientific and other apparatus, whether in the form of plates, globes or rods. A glass harmonica, played with a wet finger on a row of graduated concentric bowls spun like a lathe, was patented by Franklin in about 1774, and glass xylophones and sets of diatonic musical glasses also survive.

Generally, ‘lightning’ stools had mahogany tops and tapered glass legs which were often screwed in. They are found up to 18 inches square and also with rectangular and oval tops. The bottoms of the legs tend to be ground and the sides are often rough (as in figure 1), since it was discovered that a textured surface could enhance the insulatory properties of the glass. They were manufactured from the middle of the eighteenth century to late in the nineteenth. A prototype is illustrated in a French print of 1752, which shows a board supported on four glass bottles. In the 1770s a London scientific instrument maker, Edward Nairne, made an apparatus for lecturing on electricity, which fitted into a wooden travelling case and included a wooden stand on glass legs. The other principal part of such equipment was a friction machine, of which the first was devised by a German, Otto von Guericke, in 1660, using a revolving sulphur ball. By the early eighteenth century this had been replaced by a glass one in Sir Isaac Newton’s experiments.

By the middle of the eighteenth century friction machines were in use for generating electric shocks to amuse spectators at public exhibitions. The charge produced creates a momentary current whose electrical energy stimulates the nerves and causes an involuntary contraction of the muscles. Perhaps the largest recorded demonstration was one organized by the ‘Abbe’ Jean Antoine Nollet (1700—70), who described himself as ‘official’ electrician to Louis XV. He assembled no fewer than seven hundred monks at the Convent de Paris, each joined to his neighbour by means of a length of iron wire clasped in each hand, and completed a circuit a mile long with a conductor and condenser. At the moment of discharge it is recorded that, to the great joy and amusement of the King and his retinue, but to the discomfort of the monks, all seven hundred ‘leaped into the air with a simultaneity of precision outrivalling the timing of the most perfect corps de ballet’. Numerous other human chains were devised on a smaller scale, of which Dr William Watson’s is typical (Figure 2). Here, as a man cranks the handle of the friction machine, the static charge is transferred via a woman to the feet of a boy suspended on silk ropes and on to a girl standing on a tub of pitch, so that
her hand attracts chaff from the stand by her side. A wide variety of novelty machines, exploiting electricity were devised during the eighteenth century. A game of 1748 involved electrifying a print of the King, so that when someone tried to remove his gilt-metal crown they received a sharp blow for their treason.16 Another was the electric kiss, or Venus electrificata, in which a lady standing on a stool was charged up and her caress proved so painful that the gallant gentleman 'durst not renew his kisses more than three times'.17 One could even insulate the dinner table and one's own chair, hold a wire from a concealed conductor, touch the table and watch the guests jump when sparks flew from their forks.18 Such entertainments, particularly in the late eighteenth and early nineteenth centuries, were a great source of amusement at parties, especially among the country squirearchy. Of their popularity in Germany it was said that 'electricity took the place of the quadrille',19 while the charming watercolours of Diana Sperling include one dated 25 May 1817 showing a group of family and friends at Dynes Hall, Essex, holding hands, linked up to a friction machine and being 'electrified'.20 Often the domestic stools included in such outfits were upholstered on top of the mahogany seat boards; that in figure 1 retains its original stuffing.

Although stands on legs continued in use in laboratories through the nineteenth century,21 the fashion for domestic trickery was on the wane by the mid-century. However, the fascination for the invisible force of electricity persisted even after it had been harnessed for lighting and power. In the present century, after early fruit machines had been declared illegal, some were fitted up to give electric shocks, and up to twenty people are reputed to have linked hands to feel the sensation for the cost of 1d. in the slot.

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2. Engraving of an experiment in static electricity by Dr William Watson (1715–87), from *Experiences et Observations pour Servir à l'Explication de la Nature et des Propriétés de l'Électricité*, Paris, 1748

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Fig. 2.

3. Engraving of various scientific apparatus connected with electrical experiments, including a stand with glass legs, signed Barlow. From Abraham Rees, *The Cyclopaedia, or Universal Dictionary of Arts. Sciences and Literature*, 1819–20

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1. Strange and Rare, exh. cat., Glass Circle, 1987, Glass Amusements, cat. no. 240.
10. The Science Museum, London contains several examples of stands for experiments, as well as photographs of equipment in the Science and Society Picture Library.
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16. Heilbron, op. cit. (see note 11).
19. See note 18.
20. Mingay, op. cit. (see note 6).