

## CHAPTER FOUR

### THE ARK IN ACTION

Salem, Massachusetts, a century after it achieved fame in witchcraft, became an exciting center of the new science of "electric fire." Of an evening, for instance, according to an advertisement of March 7, 1765, one might attend lectures at David Mason's house, learning there:

That the Electric Fire is a real Element,- That our Bodies at all times contain enough of it to set a House on Fire,- That this Fire will live in Water,- A Representation of the Seven Planets, showing a probable Cause of their keeping their due Distances from each other, and the Sun in the Center...[1]

Until the 17th century, "experiment (what little of it there was) belonged to 'natural magic,'..."[2] Then, three thousand years after Moses, the European-American world rediscovered electricity through experiment, that is, "natural magic." We see clearly now why the tradition that Moses was a great magician, no matter how often "rebutted" by his admirers and "advanced" theologians, persisted. He who was an experimenter was thought to be a magician. He who was a magician performed experiments.

It is not surprising that Moses regarded the electrical fire as divine. Nor that Jesuit priests were among the most active modern experimenters. A prolonged debate divided

early modern electricians into those who believed electricity to be a substance, and those who considered it to be an influence (both attractive and repulsive). It is of the essence of Yahweh that he be such an "incorporeal" substance on a cosmic and microscopic scale and be at the same time an invisible influence for good and evil.

Long before the early modern scientists found their *deus ex machina*, Moses displayed Yahweh from the Ark of the Covenant. The divine presence luminesces from the pillar of cloud [3] and from between the two cherubim "visible to the people... as the radiation of the divine substance, as the kabod... always visibly directed towards or pointing to the tent." [4]

The invention of the Leyden jar in 1745 aroused great scientific and public interest. The Jar, which has found its way into hundreds of classrooms in elementary physics since then, was independently contrived by two scholars. One was the German scientist E. G. von Kleist. The other, a Dutch scholar, Peter van Musschenbroek, was affiliated with the University of Leyden. Innumerable ingenious applications took place,

Working with materials and instruments that would have been available to Moses, the new scientists literally played with every device and scheme that, according to my study here, was employed by Moses. So secular were the new scientists and so futuristic their pride, that practically never did they think to search among the most ancient records for their origins. A few years after the invention of the Leyden jar, Georg Wilhelm Lichtenberg (1743-1799), one of the founders of electrical science, called attention to its resemblance to the Ark of the Covenant, to the "Powerful

One of Jacob." [5]

Another distinguished electro-physicist, Maurice Denis-Papin (b.1900) asserted that the ark as an electrical capacitor was capable of producing from 500 to 700 volts [6]. This is quite enough to electrocute humans and animals as well as to perform many other electrical operations such as apparitions, smoke, and fire-making. However, neither scholar had in mind the effects upon the ark of the electrical turbulence of the Exodus period, a condition that was deduced from many circumstances and the Bible itself by Jerry Ziegler (1977), in his book *YHWH*.

The Leyden jar collects electricity. In its simplest form it consists of a pointed metal aerial conducting rod that is insulated from the ground by being immersed in water inside a glass jar. An electrical charge accumulates on the rod and will discharge to any grounded conducting element that touches it or comes close enough for the charge to jump the gap with a spark. (see figure 9)

A similar device will add a conductor to load the opposite ground charge. A jar is coated with a metal foil on the outside, and another metal foil on the inside; the glass, which will not conduct a charge effectively, insulates the one charge from the other. Water is unnecessary. A metal rod affixed to the inner foil helps to gather the atmospheric charge. A potential difference of voltage will build up between the two conductors and if it is heavy enough, will discharge by a spark or by a conducting contact like a wire, between the two, or by a deliberate or accidental interposition of a hand or another resistant or short-circuiting medium.

The voltage between the stored charges is dependent

upon: the electrical condition of the earth and the atmosphere; the material of which the conductors are made; their shape and size; and the time elapsed for the accumulation of charge. Various means can be taken to enhance the electrical potential, and therefore the force of the discharge. Benjamin Franklin in 1752 charged a Leyden jar by attaching to it a silk thread that could conduct electricity from a kite that entered a thunderstorm. He was taking a great risk.

He drew up a list of ways in which the "electrical fluid" of the Leyden jar resembled lightning [7]. Concluding that the phenomena were identical, he thought to capture and store lightning, but luckily he did not pursue his dangerous designs; a Swedish scientist did so and was struck dead by the badly stored charge (see case of Dr. Richmann below). The abundant electrostatic phenomena, both natural and humanly induced, of the Exodus, have been generally attributed to "lightning" as we know it today; this is a convenient category that disguises all references to other types of "fire."

Nicola Tesla in 1881, produced spark discharges five inches long in his New York loft; the potential was estimated at 100,000 volts. He elicited "a variety of new forms of illumination." [8] By 1900 Tesla was imitating lightning. He claimed he could produce two-mile long sparks conveying ten million horsepower. He wanted to create electric power by using the whole earth as a kind of Leyden jar (condenser) and resonating coil combined [9].

Franklin and others experimented with "the power of points ... drawing off and throwing off the electrical fire." He exploded cork balls from a muzzle and said that at night the

muzzle cast off lights. He observed that the shots caused halos of smoke [10]. Sulphurous smells were associated with them in other instances.

Franklin also set up an electrostatic device to ring a bell when the atmosphere was charging up. Aaron, High Priest of Israel, had to wear the blue ephod, a gorgeous pullover to whose skirt are attached golden bells, "and it shall be upon Aaron when he ministers, and its sound shall be heard when he goes into the holy place before the Lord, and when he comes out, lest he die." [11]

Petrie reproduces from an Egyptian priestly garment a border of "lotus-flowers and seed-vessels" that seem like "bells and pomegranates." Few doubt, however, that the Israelite bells would ring. Cassuto says that they would sound so that the priest would not enter the sanctuary unannounced and irreverently. And in departure the priest would prostrate himself and the bells' sound be a blessing [12]. But perhaps Moses grafted electronics upon the original design. Thus, at Dodona, seat of the oldest Greek oracle, dedicated to Zeus Naios, there was "an oak grove hung with vessels of brass, by which the god's voice was thought to be made audible." [13]

This Zeus Naios was related to Zeus Ammon of Libya and Amon of Egypt, who is not unrelated to Yahweh. Priestley describes eighteenth century electrical experiments with bells besides those of Benjamin Franklin [14]. The bells of Aaron's *ephod* might usefully have been agitated by an excess of electricity about him, warning him not to come into the Inner Sanctum or sometimes to get out while he could ("lest he die...")

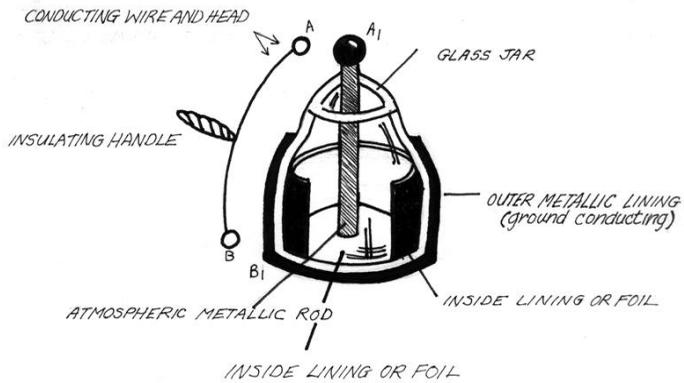


Figure 9. The Leyden Jar. If A is touched to A1, and B to B1, simultaneously, the jar will discharge at the points of contact and sparks will probably illuminate the two points of contact.

Franklin did not escape unscathed from his experiments. On one occasion he was knocked unconscious when he made an accidental connection while hooking up two Leyden jars to electrocute a turkey. Franklin was a humane man who liked turkeys - he once nominated the turkey for the American national bird in preference to the eagle totem - and was probably seeking a less painful way of butchering them. The device, it needs be said, does not display its charged condition to the eye; it is an invisible power of "an invisible god."

Musschenbrock, foreseeing such accidents, wrote: "The hand and the whole body is struck in such a terrible fashion that it is hard to describe. In a word, I thought the end had come." He advised a friend to "never repeat this new and terrible experiment." [15]

### *THE GOLDEN BOX*

The Ark of the Covenant, so named because its hollow interior probably contained at first solely the stone tablets that Moses had brought down from Mt. Sinai with the words of Yahweh, measured probably between 45 x 27 x 27 and 63 x 38 x 38 inches. That would be close to the bulk size of a secretarial desk. Tradition maintains that the Ark itself was fashioned by Moses [16], and, of course, the design was his, dictated to him by Yahweh on the sacred mountain.

An ark "denotes here a kind of chest or box." [17] Its Hebrew word is 'aron.' It may have meant once something other than a box; that is, the structure embracing the

function may have appropriated the name of the function in later ages. The root of 'aron,' says Strong's Concordance, signifies a gathering in; in this case, charges are collected and Aaron is the collector. The name of Aaron thus may be closer to the function, the priest of the ark or arc science.

Flinders Petrie, the greatest of Egyptologists, used the word 'ark' to describe one of a number of Egyptian depictions, such as is portrayed in Figure 10 here[18]. One is tempted to speculate that it is an engineering sketch of the Ark itself, lacking the box below. There would be little reason for the construction of these poles or this arch, aesthetic or otherwise, except to manage an electric arc or system of sparks. This ark in operation would flare at the junctions of the grounded poles and the top horizontal bar.

Why would the Egyptians set up an ark upon a boat? The implications are surprising. We think first of where a box to generate an electric arc would function more continuously and intensely. This would be a location on water, where charges gather more readily because of high conductivity of the medium. Especially in pre-cometary or post-cometary times, when the Earth was discharging less strongly, the ark as pictured in the illustration would create a more active arc discharge.

Secondly we revert to the puzzle of why the Jews named the Ark of Noah and the Ark of the Covenant similarly. The answer is probably that the electrical phenomena of Noah's Ark were stupendous, that the Egyptians generated their arcs on boats, and that Moses derived his land-based Ark from the aquatic models. These may have descended to the Egyptians from the Noah tradition via the Hebrews, or may have been indeed Moses' invention, whether in the aquatic forms, the land forms, or both. Regarding this last item, we may recall that Moses the

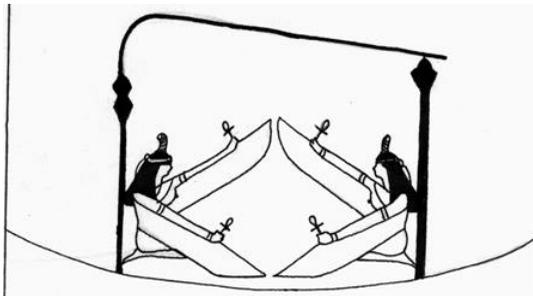
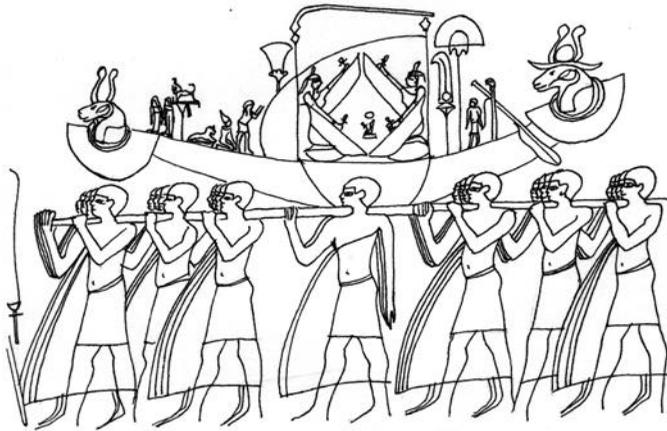


Figure 10. Egyptian Ark Procession

Source: Hugo Gressman, *Die Lade Jabbes and das Allerheiligste des Solomonischen Temples*. Leipzig: Kohlhammer, 1920, from III Denkmaler 14. See also F. Petrie, *Egypt and Isreal*, p.62a

infant floated on the Nile in an “ark,” the same rare word.

Priestley tells us that “as the electric fire may be made to take whatever circuit the operator shall please to direct, it may be thrown into a great variety of beautiful forms.”[19] With various adjustments, all of which were recapitulated in the renaissance of electrical science in the eighteenth century, the poles or bars could be made to scintillate throughout their lengths, the wings of the cherubim would light up, and a glow would occupy the space beneath or shrouded by the wings, with the four ankhs (pictured at the corners of figure 10) sparking like brilliant, erratic candles. A god was present. The only meaning of ‘Ark’ in the dictionary of Egyptian hieroglyphics is the name of a god.

But when was this Egyptian ark constructed? Was it for a shrine made before 1450 B.C. or afterwards? The ankh answers the question. It is the paramount symbol of the planet Venus. Though it is also a symbol meaning 'life' and 'salvation' and the procreative *membrum virilis*, it reverts to Typhonic Venus in the end [20]. Therefore it is mostly of the period after 1450 B.C., by the chronology I am following. Thus were joined the Ark of Noah, the Egyptian ark, the ark and ankh of the gods, and the Ark of Moses.

Then five possibilities occur, assuming the gift of the design from Yahweh (see figure 12) to be a theological invention. The Ark of the Covenant may be an invention of Moses based directly upon Egyptian models known to him as a member of the Egyptian theocratic-scientific establishment. Or the Egyptian ark may be a copy of Moses' Ark. Or the ark might have been independently invented in both countries. Or Moses' Ark may be an outright theft of an Egyptian ark. Fifth, the Arks of Moses and of Egypt may be

Hyksos inventions that Moses acquired under Hyksos subjection.

The independent invention I would regard as impossible; the details are too close and are not found elsewhere in the world. Continuing, it cannot be a copy of Moses' Ark because Egypt was not free to copy until the Ark had lost its puissance. Therefore, the Ark must come from possibility 1, 4 or 5. Number 5 is possible, but the Hyksos were on a lower technical level, before and for long after their conquest of Egypt. Numbers 1 and 4 are compatible. They move towards each other. Moses knew and worked with Egyptian science and technology. He would certainly draw on them for the design of the Ark. Then the question of whether a specific ark or set of arks was operating in Egypt before the Exodus is not too important. The ark was in Egypt. The Ark was also Moses' (and possibly Aaron's) invention for Israel [21].

A capacitor or condenser of the size of the Ark might be rated in many thousands of volts if atmospheric electricity were more continuous and abundant than it is today and if the earth had suffered shocks and were emitting electricity in the aftermath. Large sources of leaking or gathering earth charges and a heavily electrified atmosphere would be required. The operators of the Ark system would, under such favorable conditions, be able to induce repeated sparks, of heavy or light intensity, slowly or rapidly.

Early modern science also discovered that electricity could be induced from the atmosphere and ground to produce differential charges and then sparking or shocking discharges. This discovery was combined with the knowledge that a charge could be built up by scraping the electrical

"fluid" off of certain materials and loading it onto other materials. So they went about rubbing and storing and discharging electricity with cloths and amber or glass or gem sticks. They devised machines to create ever larger charges. One experimenter was sure he could create a discharge attaining the power of a lightning bolt by enlarging the surface to hold the charge which a rubbing machine would create. Some inventors imagined they might fabricate a circular series of lugs that could turn a wheel whose bits would be alternately attracted and repelled until a perpetual motion machine was thought to be possible.

Did Moses and the Levites explore frictional electric manufacturing so thoroughly? They probably did; once begun, the logic and direction of experimentation is irresistible [22]. However, the difference between those days and nowadays is that the Exodus atmosphere had more than enough to offer to build any usable charges without further exertion. Like agriculture was unnecessary in the climate and ecology of Adam and Eve's Garden of Eden, electrical manufacture in Moses' time did not require hydraulic, fossil, animal, or human energy input.

I think that similar circumstances may have discouraged the development of wire for the transmission of electric charges or current. Early modern scientists used fibre and silk lines to transmit charges; these could have been employed by the Israelites as well. The moderns used hammered and stretched metallic wires; the technology was obviously within Israelite capabilities. Hundreds of copper necklaces have been recovered from Middle Kingdom sources.

In Petrie's catalogue of Egyptian artifacts, we read

that "the necklet of a single stout wire of metal belongs almost entirely to the Twelfth Dynasty [before Moses] and the Ptolemaic to Coptic period." Number 28 is "a silver wire with curled ends." Number 32 is of "two silver wires bent double and linked together..." Petrie describes the sophisticated technology of wiring and soldering in the Twelfth Dynasty. A single piece evidences soldering, wire stretching, die stamping, and a gold tube to carry a thread wire.

Whenever a spark jumps a gap, a conductor suggests itself to induce the discharge, be it a hand, a dagger, or a metal rod. We reexamine the Egyptian ark in Figure 11; it is bent at 90° in two places. Would it be wood or metal? Most likely metal. Why is it then, that museums do not exhibit lines and wires? Does it matter that Moses had an affinity with the Kenites? Their "name means 'smiths,' so we take it that some of the Midianites were coppersmiths." [23] Sometime afterwards, Kenites worked for the Egyptian government at the Sinai copper mines and were using the alphabet, "the earliest known." [24]

A curator would not be likely to postulate an electrical science if handed fragments of stretched organic or metal line. Nor likely would any be received by the museum in the first place; the materials are quite decomposable. In contemporary paintings they would appear as indistinct lines, on the rare occasion when they would be drawn. Wires would be short; insulation, new technology, and much metal alloy is needed for long wires. Telegraphy inspired wire technology in the nineteenth century. The ancients used fires and torches from eminences and may have employed "divine fire" in the electrified ages. There are hints of this in ancient

historical ages a millennium and more after Moses, when technology generally was not much advanced over his times.

Moreover, natural electricity is erratic and powerful. It can disintegrate a line or wire, whether or not insulated, quickly, by explosion or intense heat. A heavy conductor, as in the Egyptian ark, would be prohibitively expensive. It would be used only for in-house contraptions, entirely religious or experimental (that is, playful).

So we return again to a basic reason: the sufficiency of atmospheric or natural electrical electricity, and add that its oversufficiency may have contributed to blocking further development. As natural electrification diminished in the environment, the religious "atmosphere" added its weight to the causes forestalling development of electrical manufacture and wires. The divine fires were for priests and the priests were for tradition. The early modern electrical scientists, although evincing surprise at how electricity seemed alive, (just as Thales, the Greek philosopher, remarked at the spirit that animated the electrified amber), paid no further attention to gods or church. They went ahead individually, men women and children excitedly and delightfully playing the new game.

Catastrophe, too, inspires great tragic games. It frees its survivors. Wars are games of catastrophe and play out the catastrophic mentality. Moses was induced and permitted by catastrophe to change and manipulate people and things in many ways, to invent with a rare freedom.

The Ark box was gold outside and gold inside with an insulating layer of hard wood in between. The lid of the box, the *kapporeth*, also of wood overlain with gold, held at each end a cherub of gold. These cherubim faced each other

with their wings spread out. In between them, over the lid, when he chose to be among his people, hovered Yahweh. This was his "mercy seat," in the anachronous English translation. Here he manifested himself to his people and, it is important to stress, to their enemies.

The limitations of space on the *kapporeth* or coverpiece of the Ark define in part the sculpture. Unlike the winged lions and bulls, griffins and other animals fashioned as cherubim in Assyria and elsewhere, the Ark's cherubim were probably two-footed with unisexual human features [25]. A later Assyrian assemblage (Figure 11) is similar. So are two figures from Egypt, showing two winged goddesses hovering protectively over idols of Osiris, in one case, and Thoth in the other [26]. The cherubim could not be seated or squatting, because they were facing Yahweh, but would stand with faces elevated, says the legend [27]. Figure 12 may convey some notion of their appearance, in accord with legend and with the Bible. It may be seen that their wings would be spread wide as a covering of the box so that, in effect, two platform levels would be created, one on the ample but separated pair of wings and again on the lid of the box.

The Bible affords images of Yahweh enthroned on the wings, speaking of "the ark of the covenant of the Lord of hosts, who is enthroned on the cherubim." [28] He at the same time is "the Lord, that dwelleth between the cherubim, whose name is called on it." And another verse speaks of "the ark of God, whereupon is called the Name, even the name of the Lord of hosts who sits enthroned on the cherubim." [29]

Then Yahweh is appealed to, with the words: "Thou

that dwelleth between the cherubim, shine forth." Moreover, Yahweh says, I will speak with you from above the Kapporeth, from between the two cherubim that are upon the ark of the testimony of all that I will give you in commandment for the children of Israel." [30]

If Yahweh sits upon the wings as a throne, then the lid below is his footstool. Thus, "Let us go to His dwelling; let us prostrate ourselves at His footstool." [31] Hence, Yahweh when present in name, voice, or image might be above the wings, between the wing separations, and between the wings and the footstool. The variant expressions imply what Priestley said earlier of the electrical effects he had achieved by similar devices, that they make different and beautiful figures as the charges move and sparkle. When conditions were propitious, a great leaflike sheet of fire might define itself over the sculptured golden group as a whole. It would be three-dimensional, like a hologram. (See Figure 12.)

Buber, apparently dissatisfied with biblical description, writes that "The Royal covenant is followed by the building of a throne," generally speaking. But "we have no reliable reports as to the original appearance of the Ark... We do not know why the description 'Throne' for the Ark was avoided." [32] What bothers Buber is that it is not a throne, not a shrine, although it is like the litters carrying the throne of god that the Bedouin tribes possessed. It is yet a "genuine migrating sanctuary." It comes from the time of Moses, as various archaeological findings have proven.



Figure 11. Cherubim of Nimrud. In this piece of open work of ivory, a pair of winged female figures wearing the Egyptian double crown protect with their outstretched wings the aegis of Bastet on the flowering "Lily" tree between them. Since Nimrud (or Kalah) became the Assyrian capital city only after 880 BC the plaque must be post-Mosaic. The resemblance to the floral pattern to flames and even the Lion of Judah may indicate the invisible electrical flames. A very old principle of opposing and yet cooperative forces seems to be incorporated in the twin figures so often encountered around the world - from Castor and Pollux to Yin and Yang (Martin, pp 293ff; Ziegler, pp 113ff). It appears more likely than not that the two identical cherubim of the Ark are mosaic version of this universal twinship. (source: redrawn from Kenyon p58)

The learned Buber, a hero and good man in the terrible Nazi period, is at his wits' end when he approaches the obvious. He laboriously formulates the question: "Was there a moment in the life of Moses which drove him overpoweringly to unite and mould the elements familiar to him from extended observation and knowledge of tradition, and to make some new formation out of them?"[33]

"He said, to be sure, did that man, that God goes before them and that He makes His presence known by one or another sign; but the sole firm and unshakable fact was, in the last resort, that the God could not be seen; and all said and done you cannot actually follow something which you cannot see."[34]

Buber is now rationalizing why the Israelites should have preferred a Golden Calf to an empty litter. In the face of the most explicit references, *which he himself employs*, that the Ark was occupied, or would be, when Moses made it, he abandons his inquiry into its design.

Gressmann is also baffled by the apparent emptiness of the seat of Yahweh. He insists [35] that there must have been a little figure of Yahweh, or an animal, or at least a meteoritic stone that rested or could be placed beneath the wings of the cherubim. The perplexity is understandable but wrong-headed. What is to be found elsewhere, sometimes, and later, is not definitive of the Ark of Moses. And how, when the Bible says that Yahweh sits upon the cherubim, is a figure beneath the cherubim to be accounted for? The answer must be that Yaweh, the electrical god, was both present and invisible.

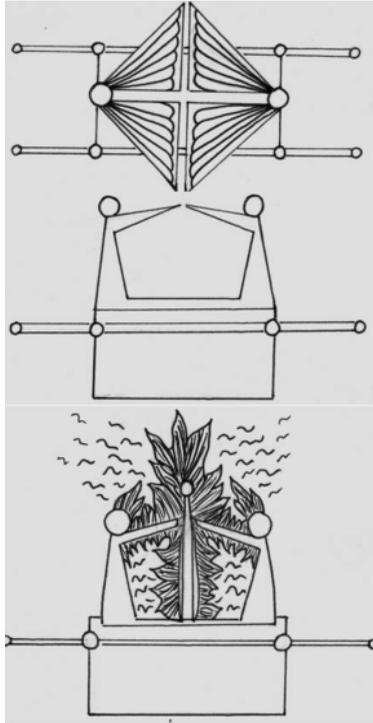


Figure 12. The Ark's Structure and Function.

Top: View from top Middle: View from side Bottom: "Thou that dwellest between the Cherubim shine forth." (Psalm 80:1) The Ark with Yahweh displayed. Legend claims the wing spread of the Cherubim was eleven spans(of the hand) plus a span for the head, and that the Cherubim were 10 spans tall from head to ground(III G 158-9)