

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 were 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 (1900-x) 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 page 100 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."

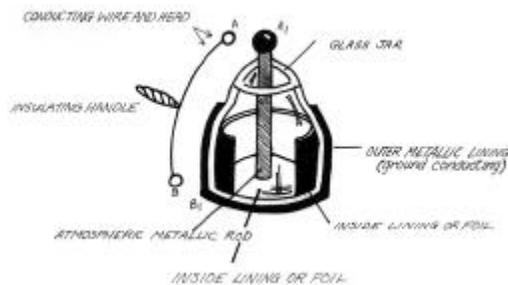


Figure 9. The Leyden Jar. (Click on the picture to get an enlarged view. *Caution: Image files are large.*)

If A is touched to AI, and B to BI, simultaneously, the jar will discharge at the points of contact and sparks will probably illuminate the two points of contact.

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...*")

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

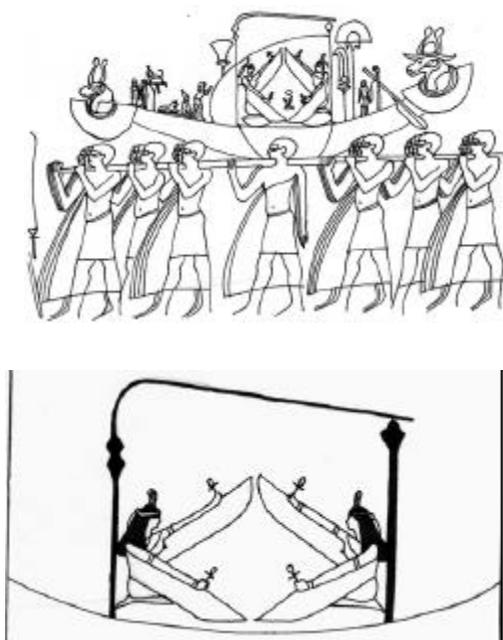


Figure 10. Egyptian Ark Procession (Note: The figure has two pictures. Click on each of them to get an enlarged view. *Caution: Image files are large.*)

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

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 have been a joint Egyptian-Hebrew development, or may have been indeed Moses' invention,

whether in the aquatic forms or the land form or both. Regarding this last item, we may recall that Moses the 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 ankh (pictured at the corners in 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.)



Figure 11. Cherubim of Nimrud. (Click on the picture to get an enlarged view. *Caution: Image files are large.*)

In this piece 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 to Pollux to Yin and Yangmartin, 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)

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.

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]

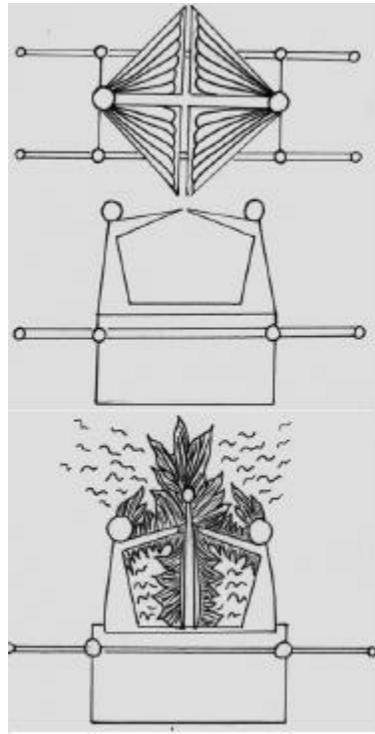


Figure 12. The Ark's Structure and Function. (Click on the picture to get an enlarged view. *Caution: Image files are large.*)

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)

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 Yahweh, the Electrical God, was both present and invisible.

Certainly the Bible does not go heavily into describing the functions of the Ark but it has many brief direct and explicit references to its electrical operations, and how and when its effects would come about. Nothing about the human mind is incredible, but it is almost incredible that for three thousand

years the Ark has not been understood, whether by the friends or foes of Yahwism, or by theologians or scientists. Or, lacking absolute proof, why has this theory not been before the world as one of the most plausible explanations of Moses, of Yahweh, and of the Ark?

Perhaps the savants of ancient times preferred description to analysis, statics to dynamics, Aristotelianism (Maimonidism) to pragmatism. With all of their zeal for mummification, the Egyptians have left us no recipes for the technique. Perhaps the electrical powers were only vaguely known to those who may have inserted most of the description much later - that is, after it had ceased its active functions and become a "period-piece." Perhaps its externalia were more gaudy than its unknown, even sacred, interior dynamics - rather like, as they say, the automobile today that is sold on its appearance to people who never lift the hood of the motor.

Another answer, too facile, is that a few critical points of design were deliberately omitted from the Bible for the sake of secrecy. For instance, if the connections of the cherubim were machined to serve as opposing poles, and were minutely described, the secret would practically surely be revealed. Perhaps all of these reasons enter into the mystification, and to them we should add the strong, even unconsciously strong, wish to reject any mechanical explanation of the sacred. And it was precisely after the Ark ceased to be operative that the desire to explain its former workings would be suppressed.

The most perplexing problem of the Ark as an electrical worship, control, and weapons system does, in fact, involve the cherubim. Two descriptions of the Ark are provided [36]. In both, the cherubim are facing each other from the two ends of the Seat. But we note: "Of one piece with the [gold] mercy seat shall you make the cherubim on its two ends." [37] This would imply, if accurate, that the cherubim would be of the same charge and that the ark would not function electrically by a discharge between them. Against this seeming design defect are the dozen and more descriptions of the Ark in action.

Ziegler does not address this problem and says that one cherub would be grounded, the other affixed to the inner gold shell of the Ark. In short, only one cherubim was of a piece with the lid or seat. He thinks that the intricate mechanisms of the ark are kept secret. However he does assign a function to Aaron's rod which he believes would have been the aerial conductor.

This, it seems to me, is close to the solution. The Ark is a variable machine and the control of its power must be capable of modification, This is impossible with the fixed cherubim alone. They can only store charge, the same charge. But what can be varied is a rod, preferably and inevitably a sacred rod, Aaron's rod or Moses' rod. The rod would connect with the inner gold

lining of the box while the cherubim connected with the outer, grounded lining. The rod would be adjustable in relation to the cherubim, in one or more of four directions, such that weak or powerful discharges, under unfavorable or favorable charging conditions, could be made with the cherubim. Sockets and ratchets of simple design, and a telescoping rod, could manage all of the required motions.

Remarkable phenomena could be induced. Perhaps the most inspiring would be the luminous arcs of fire that would be emitted between the two cherubim and the pole, bringing into a high intensity image the presence of Yahweh at the center of the Mercy Seat.

The arc or spark will jump the gap as often and as rapidly as the voltage can build up. Writes Priestley, "If the knobs of two wires, one communicating with the inside, and the other with the outside of the phial, be brought within four or five inches of one another, the electrical spider... will dart from the one to the other in a very surprising manner, till the phial be discharged." [38] It can become almost a column of fire to the naked eye.

In the presence of prolonged discharges, an ionized cloud of dust will gather around, concealing the discharge in the daytime at least and making it less visible at night. There are ways of placing an arc apparatus more advantageously to produce electrical phenomena, ways of guarding it, of measuring its potency, of enlarging or diminishing its activity and noises, of enhancing the surrounding cloud, of using water and dirt and various stones for visual effects, and treating, blessing or magnetizing metals and metal alloys. One might also produce some mental phenomena by feeding and extracting ionized air to and from the device. We are dealing with a complicated technical apparatus and set of operations and effects.

Nor was any other religious device so activatable. The ark made the pyramid obsolete. In an age that saw no reason to distinguish between inanimate and animate natural forces, the liveliness of electricity would put it definitely in the sphere of the animate and, if not in a god, then in a voice of the immediate presence of a god. As Ziegler writes, the word electricity comes from the Greek *electron*, which may come from *El*, meaning "god" (as in Elohim) and *ech* meaning "to have," that is, "what gods have." And *ark* is surely related to the arc that it creates, and to the form of arch that an arc takes, and probably to early ages (archeons and archaic) and forms of rule (monarchy, oligarchy). The archaic electrical age may have sponsored these words [39].

DANGERS OF ELECTROCUTION

The Ark was a highly dangerous machine. Ordinary Bible reading and anthropological training about primitive customs

condition one to pass over indifferently its taboos. The people, officers, dissenters, priests and in fact everyone except Moses are warned to avoid the Ark, or to approach it carefully on pain of death. The Holy of Holies is well away from strange hands when Israel is in camp. (See Figure 13.)

The invisibility of electric charges is, of course, a major concern. The danger is unseen. People must have faith and discipline to observe safety precautions respecting electricity. Not until the studies of S. Jellinek in Austria during the 1920's did it become quite clear "that death from electric shock could be instantaneous and without any visible signs of injury." [40]

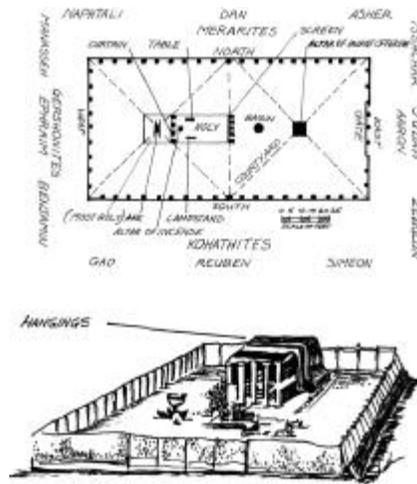


Figure 13. Ground plan and Design of the Tabernacle. (Click on the picture to get an enlarged view. *Caution: Image files are large.*)

(Source: redrawn from the *New World Translation of the Bible*, after a reconstruction by Conard Schick)

Some body areas are more sensitive than others: the back of the hand, the neck, the shoulders, the temples. Some persons - perhaps Moses - are less sensitive to electric injury than others. Perspiration (and all water) heightens conductivity; the minute burns discoverable sometimes in different places on the body of a person who has suffered electrocution may signify resistances in such conductive spots. Washing therefore helps to avoid or pass a shock, as priests of various cultures still do, even if symbolically, when approaching an altar. Burns can be severe, but occur at voltages of 200 or more; meanwhile, lower voltages can cause death with little or no visible markings on the corpse. Voltages as low as 10 have been known to kill, according to the Russian expert, Manoilov. The heart or brain electrical systems need only be interrupted for life to quickly cease, often with the disruption of breathing control, hence asphyxiation.

Yet high voltages are used in penal death by the electric chair, 1200 to 2000 volts, and excruciating minutes of time can be required to kill. This may be owing to a strange fact, that a person who is anticipating an electrical current or sparks can, especially if not too fearful, absorb or pass a larger voltage

without death or with less serious an injury than otherwise [41]. Four-legged animals are more sensitive to death by ground charges or lightning than two-legged people or birds.

The electrical potency of the Ark or a similar mechanism varies with the differences in charge between air and ground. If the air is losing charge rapidly, the ground will concentrate a charge rapidly and on a point contact discharge will cause a heavy explosion, a brilliant arc, and a deadly experience for anyone or even a group who short-circuit the contact. If St. Elmo's fire is arising naturally from an elevated point, an arc machine nearby would carry a heavy static charge, capable of jumping more forcibly.

Amidst general rejoicing at the fine manner in which Yahweh was coming down upon their offerings at the new shrine, Nadab and Abihu, sons of Aaron, priests themselves, "each took his censer, and put fire in it, and laid incense on it, and offered unholy fire before the Lord, such as he had not commanded. And fire came forth from the presence of the Lord and devoured them, and they died before the Lord." [42]

According to a legend: "From the Holy of Holies issued two flames of fire, as thin as threads, then parted into four, and two each pierced the nostrils of Nadab and Abihu, whose souls were burnt, although no external injury was visible." [43] Modern medicine knows that the nostrils are peculiarly susceptible to electric shock. It is generally known that electroshock can kill and injure without signs of burning. The Bible implies that the two men were drunk and hence unholy before Yahweh, whence we may see in the accident the kind of negligence that does occasionally cause fatal accidents among skilled electricians.

Rabbi J.H. Hertz, in one of his enthusiastic interpretations, blames the sons of Aaron for their "intoxication, unholy ambition, arbitrary tampering with the service, and introducing 'strange fire' into the Sanctuary." [44] Hertz believes (p.445) that they were struck by lightning, since their garments were not destroyed. Further he defines "strange fire" as "unconsecrated fire, not from the Divinely kindled flames on the Altar." It is a more meaningful translation of the words "unholy fire," which can mean anything or nothing. "Strange" or "alien" means that it is not the fire that is appropriate to the fire of the Holy of Holies; for it is fossil, not electric, fire [45].

Moses explained then to Aaron what the Lord was doing: "I will show myself holy among those who are near me, and before all the people I will be glorified," says the Bible, "and Aaron held his peace." As they were carrying off the corpses, Moses, in his genial manner, tells Aaron and the remaining sons, "Do not let the hair of your heads hang loose, and do not rend your clothes, lest you die..." He says that it is up to the general congregation to mourn for them. Further, he says, apparently not sure of their

self-control: "And do not go out from the door of the tent of meeting, lest you die." For there was a crowd of spectators outside [46]. Poor Aaron had to take much scolding with his bereavement and hear many safety lessons:

The Lord spoke to Moses, after the death of the two sons of Aaron, when they drew near before the Lord and died; and the Lord said to Moses: "Tell Aaron your brother not to come at all times into the holy place, within the veil, before the mercy seat which is upon the ark, lest he die; for I will appear in the cloud upon the mercy seat [47]."

One must also bow low before Yahweh, if only to avoid a shock. But this practice presumes that a divine fire is hovering above [48]. In a history of electrical science, we read the following:

A.D. 1753. Prof. George William Richmann (1711-1753), native of Sweden and member of the Imperial Academy of St. Petersburg, who had already constructed an apparatus for obtaining atmospherical electricity according to Franklin's plans, was attending a meeting of the Russian Academy of Science, on the 6th of August, 1753, when his ear caught the sound of a very heavy thunder clap. He hastened away in company with his engraver, M. Sokolow, and upon their arrival home they found the plummet of the electrometer elevated four degrees from the perpendicular. Richmann stooped toward the latter to ascertain the force of the electricity, and "as he stood in that posture, a great white and bluish fire appeared between the rod of the electrometer and his head. At the same time a sort of steam or vapour arose, which entirely benumbed the engraver and made him sink on the ground." Sokolow recovered, but Richmann had met with instant death [49].

The sad story of Uzzah who was electrocuted for trying to steady the ark which was on its way to Mount Zion in a cart will be told shortly. He was not a Levite. But the Levites had their problems too.

The most distinguished among the Levites were the sons of Kohath, whose charge during the march through the desert was the Holy of Holies, and among the vessels particularly the Holy Ark. This latter was a dangerous trust, for out of the staves attached to it would issue sparks that consumed Israel's enemies, but now and then this fire wrought havoc among the bearers of the Ark. It therefore became a customary thing, when the camp was about to be moved, for Kohath's sons to hasten into the sanctuary and seek to pack up the different portions of it, each one planning cautiously to shift the carrying of the Ark upon another. But this even more kindled God's anger against them, and He slew many of the Kohathites because they ministered to the Ark with an unwilling heart. To avert the danger that threatened them, God ordered Aaron and his sons to enter first into the sanctuary, and 'to appoint to the Kohathites, every one, his service and his burden, that they might not go in to see when the holy things are covered, lest they die.' This was done because previous to this command the sons of Kohath had been accustomed to feast their eyes on the sight of the Ark, which brought them instantaneous death.

But, according to this order, Aaron and his sons first took apart the different portions of the sanctuary, covered the Ark, and not till then called the sons of Kohath to bear the burden [50].

This legend is technically and behaviorally so clear that little interpretation need be supplied by this author. As a modern example, one needs only picture the scene of deadly sputtering which occurs when some object like a pole falls against a gang of live wires and machines.

The Ark makes a noise, a hissing, crackling, moaning complex that can rise to near-deafening decibels. If the air-ground differential remains large, the arc and the noise can continue for minutes, hours or days. Various observers have written that electrostatic discharges on mountain-tops and elsewhere make a noise like vast swarms of bees. Yahweh tells the Israelites: "I will send hornets before you, which shall drive out Hivite, Canaanite, and Hittite before you." [51]

THE ARK AT WORK

An obvious first function of the Ark is to be the main vehicle of a procession. All too many students have ceased their inquiries after making this observation [52]. They are reinforced in their belief by witnessing religions where litters carrying sacred images are borne -whether on camels of bedouin tribes supposedly like the primitive Jews, or upon the shoulders of devout males in Catholic feasts of the Virgin, or even in the form of the wagon of juggernaut of India. Yet practically the only reference to the Ark in procession is hidden in Psalm 24:7-10:

*Raise your head, O you gates,
And raise yourselves up, O you long-lasting entrances,
That the glorious King may come in!
Who, then, is this glorious King?
Jehovah strong and mighty, Jehovah mighty in battle.
Raise your heads, O you gates;
Yes, raise [them] up, O you long-lasting entrances,
That the glorious King may come in!
Who, then, is he, this glorious King?
Jehovah of armies - he is the glorious King. Se'lah.*

The staid editors of the Oxford Bible, Revised Standard Version, comment blandly that the Ark "served to guide Israel in wandering (*Num*, 10:33), to lead in war (*Num*. 10:35-6), and to be a medium for oracles (1 *Sam*. ch. 3.)." [53] From this, one might imagine the Ark to be a kind of brave flag carried at the head of a troop; the flag is also used when swearing to agreements and making promises for the future. The Jews, however, had plenty of banners inscribed with tribal legends and Israelite mottoes.

The Ark was no mere banner or image. The Ark would always give psychological consolation, of course. It would indicate by its activity and sounds the comforting presence of Yahweh. In what seemed to be interminable periods of despair and starvation, it lived for its people. Thus:

And they departed from the mount of the Lord three days journey: and the Ark of the Covenant of the Lord went before them in the three days journey, to search out a resting place for them [54].

I would stress here the separation of the Ark from its people; it went ahead with its special guard of Levites to spy out a camping ground. There is no reason for this tactic unless the Ark was required to perform a real special function.

Although it was the clouds that gave the signal for taking down and pitching tents, still they always awaited the word of Moses. Before starting the pillar of cloud would contract and stand still before Moses, waiting for him to say: 'Rise up, Lord, and let Thine enemies be scattered; and let them that hate Thee flee before Thee,' whereupon the pillar of cloud would be set in motion. It was the same when they pitched camp [55].

Ziegler tells us: "The mysterious Ark seems endowed with intelligence. With this viewpoint we see that the ark was an instrument carried by men and was capable of measuring to some extent the electrical activity of the atmosphere. In a safe place, the ark or electrical capacitor would charge up little, if at all, and no electrical discharge would occur. If placed in a dangerous region, the ark would build up a charge quickly and give a strong discharge. "[56]

The rule was to rest when the ark was active. A pillar of smoke by day (or smoke and fire by night) indicated that the Lord was present and the people must remain encamped. When the ark was less active and the smoke vanished, the hosts of Israel moved on, carrying the ark in their front ranks.

"And it came to pass, when the ark set forward, that Moses said, Rise up Lord and let thine enemies be scattered; and let them that hate thee flee before thee. And when it rested, he said, Return, o Lord, unto the many thousands of Israel." [57]

No Jew could or, later, was allowed to speak the real name of Yahweh. Yahweh means "I be," according to Moses. Clear enough: He is the basic principle of life and existence. He cannot be known in his full being. I doubt those Jews and gentiles who say the "word" Yahweh was the name of God and not to be spoken. More likely, Yahweh spoke his own name from the Ark, which could not and should not be mimicked.

THE ELECTRIC ORACLE

That the ark had oracular powers can be explained. The ark would charge even at low potentials. No electricity would be manifest here. But the ultimate discharge would give some measure of how rapidly a charge had been accumulating. "This same idea is used to measure the electric potentials of the atmosphere by modern scientists," comments Ziegler[58]. The fatal accident to Professor Richmann, recounted above, occurred when he stooped to examine an atmospheric electrometer. The Ark in the hands of Moses and the Levites was a fire-measuring instrument. Dangerous ground could be avoided, not only high places, such as all could soon learn of, but lower places where underground water could result in quick accumulation and discharge or where unseen rock formations fostered lightning exchanges with the atmosphere through the unhappy animate contacts moving in-between ground and air.

But, too, insofar as the voice of Yahweh was heard coming from the "mercy seat" or divine vehicle emplaced between the two sparking cherubim, and there are actual variations in the sounds of rapidity, rhythm, pitch and tone[59], oracular instructions could be systematized and related to reality with a degree of reason much superior, let us say, to the kinds of relationship among the stars that astrologers used then and now to prophesy and advise.

The Jews did not ignore the predictive science of astrology: far from it; a Roman author called them "star-obsessed." But their astrology was purged from the Bible over time for being close to a violation of the commandment against worshipping other gods before Yahweh. And besides, these earliest times were not adapted to astrology, since the skies of the Exodus period were largely obscured. During the Egyptian crisis, the crisis of the plagues, and during the many years in the wilderness thereafter, careful astrology would have been of little help, except for watching the cometary behavior of Venus-Baal.

Hence, we have another practical reason for the preoccupation with electricity. It was temporarily the only major method of discussing the will of God and the movements of the cosmos in a systematic way. So it was not only that electrical phenomena were abundant, but also that the basis for another oracular technology was inaccessible. Without the Ark, how could Yahweh communicate to His people? "There I will meet with thee and I will commune with thee above the mercy seat from between the two cherubim which are upon the ark of the testimony." Not only was the ark voluble, speaking for Yahweh in tongues, but also visible: in Psalm 80:1 the direct statement is made: "Thou that dwellest between the Cherubim, shine forth."

Ancient Greek theurgy sought sometimes to induce the presence of a god in an inanimate receptacle, and sometimes in a human

form. Luminous apparitions were favored, as in the *Chaldean Oracles*, which promised that by pronouncing certain spells the operator should see 'fire shaped like a boy,' or 'an unshaped... fire with a voice proceeding from it.' [60] An oracle of Porphyry speaks of "the pure fire being compressed into sacred forms..." Elsewhere, "the 'strong immortal light' replaces the mortal light of the lamp... the watcher sees the light of the lamp become 'vault-shaped,' then finds it replaced by a 'very great light within a void,' and beholds the god." [61] Such practices, a thousand years after Moses, suffered from a paucity of god's fire; they seem to reach back in time for more auspicious electrical conditions.

THE BATTLE OF JERICHO

At the time of Aaron's death, legend has it, the skies cleared and the sun and moon came forth. This was not long before Moses' death and towards the end of the wanderings. The lower atmosphere would carry less charge and the Ark could not be so continuously loaded.

Recalling, however, the simple rule of potential difference, we would be able to judge the new conditions if we knew whether the earth was still releasing charge regionally as the lithosphere sought electrical equilibrium. Indications of disequilibrium could be obtained if we knew whether volcanism was still raging in many places, if earthquakes were frequent, if St. Elmo's fire were common on higher places, and if the state of all such activities were changing not only in the Palestinian area but in the broader areas with which Palestine was connected, such as the great Syro-African-Mediterranean rifts, the Danubian region, the Upper Nile, the Anatolian mountains, and so on. Further, we would wish to know the conditions of the upper atmosphere, whether the dust on high had dissipated, whether large meteoroids were circling and occasionally falling, whether the great comet were returning on an earth-approaching orbit from time to time.

If Velikovsky is correct in ascribing the 52-year jubilee cycle of the Jews and the 52-year ceremony of atonement of the Mexicans to the regular return of the great comet, we would expect a renewal of electrical activity regularly, and a heavy residual effect during the interval between visitations. The jubilee was a time for the cancellation of obligations such as land tenure and slavery [62], and for repentance among the Mayans and the Aztecs; there human sacrifices were made, fearful convocations were held, and then great bonfires celebrated the passage of the 52nd anniversary without a new catastrophe [63]. I am accepting the attack upon Jericho as an event close to the 52-year cycle and as probably affected in its outcome by the cosmic event.

Strong traditions attest to forty years of wandering in the wilderness; perhaps another dozen years found the Israelites before Jericho and then before Gibeon; the conquest of Canaan is said to have occupied 14 years and Joshua's leadership in all 28 years, so the time schedule seems appropriate. I am sceptical of the old ages attained by both Moses and Joshua, and think that they may have been measured on a shorter-year sacred calendar from a prior epoch. Studies of earlier and later human remains indicate a younger average adult age of death than in modern times.

The Ark was used many times in battle. Going to war without it was foolhardy. Onetime Moses said to a gang who wanted to raid the enemy: "Go not up, for Yahweh is not among you." [64] They disregarded his words and were thrashed by a combined Amalekite and Canaanite force. Moses was not an infallible oracle, but he had more foresight than others, partly because Yahweh's vehicle was providing him with intelligence on fighting conditions.

And Yahweh, too, was worth a regiment. When the Ark behaved in an excited fashion, it foretold heavier discharges, The enemy, observing the Jews, could see their renowned Yahweh. When the same phenomena began to manifest themselves inside their fortress they would imagine that "Israel - the Fighting God" - was in their very midst. (People unacquainted with the immediate circumstances of battles are inclined to judge their outcomes in terms of gross figures of men and equipment committed. The spearhead of the vast armada of Americans that descended on "D-Day" upon Normandy in 1944 was blunted for many hours by a single German artillery piece, well-emplaced and manned by a stubborn, well-trained crew.)

"In any terrain Israel had the advantage with the Ark of the Covenant," argues Ziegler. "They were warned earlier of the electricity by it and could seek out a better shelter." [65] Cities that were built up for protection found themselves vulnerable to Israel. In some cases, with advance knowledge of a cosmic electrical storm, the Jews could surround the town and capture the population as it came fleeing down the hill.

The conquest of Canaan by Moses' successor, Joshua, was swift and decisive. Many small kingdoms were destroyed, many towns burned, many people slaughtered, many idols smashed.

The ark worked well. Its use in the battle of Jericho is exemplary. When, some 52 years after Exodus, Joshua's army approached Jericho, his spies reported the city already in a state of fright. They were huddled behind the massive stone revetment of their hilltop town [66].

Very likely the heavens were disturbed, and a return of the great comet was expected by the Jews (and most likely, the

Canaanites as well). Joshua could have timed his invasion in anticipation of it. The Jews were already, as Moses and the Levites would have them, a "People of the Book," obsessed in their tactics and memory. When the earth shook and the river's northern sources were blocked [67], the Jordan River was regarded and treated as another Sea of Reeds. The whole people marched across the river-bed saluting the Ark there upheld to view.

The tactics for Ark employment called sometimes for electrical disengagement. Thus the people were kept at 2000 cubits from it during the approach to Jericho but then ordered to pass close by it on the stopped-up river bed of the Jordan. Disengagement would be accomplished by removing the center pole affixed to the Lord's seat between the cherubim and elevating the cherubim. A crossing of the dry river bed of the Jordan might be accomplished at a speed of three miles an hour. We can allow therefore that a two-mile column of people could walk across in an hour. Perhaps there were 40,000 in all that day. The whole Jewish nation with its *impedimenta* and herds could cross readily in four hours, if they didn't stop to stare at the Ark. Even in historical times, the Jordan has been blocked by seismic landslides for that long and longer.

Figure 14 gives us the story in the collapsed time perspective of a medieval mosaic. Yahweh commanded a daily march around the beleaguered citadel for six days, and seven rounds of the city on the seventh day. Armed men went first, then seven priests blowing rams' horns, then the Ark whose behavior by now must have been transfixing the garrison, and finally a rear guard. On the seventh day's seventh round of the hill, the trumpeters blew their horns, and the expectant people of Israel, hitherto silent by command (probably to let the voice of Yahweh give the city "the screaming meemies") huzzahed as they had been told to do. The walls collapsed in a great blast. The slaughter began. The terrified survivors of the blast tried to flee and the Jewish shock troops poured through the breaches. Their comrades stationed below walked up the hill, cutting down the people attempting to escape. Only the whore, Rahab, and her family were permitted to survive, for she had earlier helped the Jewish spies to hide [68].

Jericho is on a western rise of the Jordan Valley, seat of the catastrophe of the Cities of the Plain, which forms part of the northern line of the great African Rift. Its earthquakes have been frequent, and electrical phenomena are associated with seismism. Joshua was maneuvering in accord with the ionization and charge-up of the ground and air. He expected electrical display and fires, and a nervous enemy. He could hardly have expected the huge walls to be overturned, although the

connection among electricity, fire, and seismism must already have been known to him.

Archaeologists have discovered that the great Middle Bronze Age walls of Jericho were in fact overturned by a great earth shock. John J. Bimson presents archaeological confirmation of the events [69].



Figure 14. The destruction of Jericho. (Click on the picture to get an enlarged view. *Caution: Image files are large.*)

(Source: Mosaic in Church of Santa Maggiore, Rome, about 432-440)

MBA [Middle Bronze Age] Jericho was destroyed by Joshua, around 1400 B.C. Then followed a long gap in occupation [Joshua cursed whoever should try to rebuild the city.] In the time of David a settlement of some kind was established on the site, though this was very small and no traces of it have been found on the mound, pottery and scarab from Tomb 5 being the only indication of its existence. A proper town ... was rebuilt in the Amarna period, ninth century B.C...

The blast must have included cosmic electricity as well as seismism, because one excavator, John Garstang, found plenty of evidence of intense fires; storerooms were burned; stone houses were reduced to calcinated debris and white ash was overlain with thick layers of charcoal and burnt debris[70]. (I am reminded here of the Trojan case, recited in the preceding chapter.) Granted that the Jews had made the eradication of Jericho a holy war; there is still a limit to the amount of ash that can accumulate from hand-burned stone houses with a few wooden utensils and some wooden beams. An atmospheric discharge probably occurred, accompanied by numerous thermoelectric pyres, concurrent with the earthquake.

That is not all: Jericho, like the typical Middle Bronze Age ruin, presents several mysteries. Kenyon reports a plague in Jericho then[71]. Bimson links this plague with the death of 24,000 in Israelite territory shortly before the crossing of the Jordan[72]. The Bible says this was a plague in punishment for the Beth Peor popular heresy[73]. The Beth Peor plague or scourge may have been a massacre or civil war; we discuss it at the end of Chapter

5. The Jericho plague or scourge, evidenced by tombs crowded with bodies, may not have been a disease either.

Zeuner found an extraordinary preservation of organic material in the tombs of the multiple burials[74]. He ascribes the phenomenon to natural gas, a combination of methane and carbon dioxide, which may have entered the tomb shortly after burial. The gas, he believes, may have originated from fissuring of the ground during an earthquake.

The Bible reports that the last fall of manna occurred just before the Jews entered the Holy Land, that is, at this moment of time. Formaldehyde vapor, also a preservative, falls with manna and is poisonous, apart from whatever chemicals may be falling with it. The cause of death, then, and the cause of the plague, may have been external and atmospheric; the bodies were preserved before burial. A cometary origin of the gases, and even of viral material, cannot be ruled out.

THE ARK'S END

Apparently the Ark was used less and less as a mobile weapon. Electrical conditions were changing so that it became more difficult to operate along the full range of its original functions. "The clouds of glory" vanished for the first time with the death of Aaron. People born in the desert saw the sun and moon. They had to be warned against worshipping the heavenly host [75].

Also the skills of the personnel assigned to it after Joshua may not have been adequate; perhaps they knew the procedures well enough but could not adapt them to new conditions or invent new procedures. I would suppose, too, that as the division of labor proceeded after Moses, the priests might be content with managing a tractable ornamental ark, and the military men would like to get rid of "civilian" participation in matters of the sword [76]. The very sacred nature of the Ark and the taboos surrounding it would also obstruct any bright young scientist from tampering with its structure.

We hear on one occasion that the ark was duplicated by a young man named Micah in his home, a surprising occurrence, reminiscent of claims that the nuclear bomb can be home-made. The lad's mother was quite proud of him; she had consecrated her silver for the purpose.[77] He made a graven image, a molten image, an ephod, a teraphim and hired a priest. Nothing untoward occurred save that the tribe of Dan descended upon the household and carried away the ark and the priest.

Later we learn that the true Ark was kept at Shiloh, whence it was occasionally employed. Once the Philistines captured the Ark in battle, killing its attendants. They sent it from one city to another, but it acted so disastrously at each place in turn - perhaps as they sought to make it work - that the Philistines

finally made a substantial offering of gold objects and a sacrifice of beasts to it and conveyed it back to the Israelites. The propitiatory golden mice of the offering are connected with Apollo Smintheus of Crete and Palestine, sminthos meaning "mouse." [78]

In several passages, Ziegler reaches for connections between the mouse and electricity [79]. "Sminthos" was "mouse" in Greek and "mus" in Latin. "Mys" is another word for "mouse" in Greek, and "Mystery" (as in Eleusian Mysteries) is a cognate term and appears variously in connection with electrified rites. Apollo is also called "Mysagetes," which relates him to mouse and to his role as protector of the Muses.

Much later, and the historian Herodotus relates the story told him, the army of Sennacherib, besieging Jerusalem, was set upon by an army of mice in the night; they gnawed the bowstrings of the archers and caused the army's total discomfiture. The Bible has it, and the date must be around 687 B.C., that a blast from heaven destroyed the Assyrian army. I discuss elsewhere this incident and ascribe the blast to an electro-gas explosion. Whether or not the cloud descended in the form of a mouse, a horde of mice would be drawn from the ground by the electricity. At all events, the Egyptians memorialized them by erecting a statue of a mouse (for they, too, opposed the Assyrians), at a city called, significantly, Letopolis, meaning "City of the Thunderbolt." At least two Greek towns were named Leptopolis ("Mouseville").

Josephus said that "Moses" should be written "Mouses." [80] This seems ridiculous; but let us ponder the matter. The usual Hebrew for Moses is "Moshe." The French version is "Moise" but was once "Moyse." Depending upon the vowels that go between the consonants "M" and "s" we can be dealing with Moses, a mouse, a god, a ritual, a statue, or a musical muse, all of these somehow in an electrical context. The root flourishes, too, in several cultures, and attaches to events stretching at least from 1450 B.C. to the present era.

The mouse involved is sacred, as at Letopolis and other mouse-named places, and has some association with a god, and in the present case sacrally with the Philistines and the Jews. In Chapter VI we shall trace and assign the name "Moses" to the Egyptian word for "child." Could it also be the Egyptian word for "a little being"? For a "mouse"? Probably not; we are fairly certain of our etymology.

However, this is not to say that a mouse in the age after Moses might not have acquired from Moses the root of his name, especially since electricity seems to have been connected over some centuries with both Moses and Mice. Words often derive from the names of famous practitioners of what they refer to. An electric figure rather like a mouse could clump at the top of a rod

like that of Moses or Mercury (brother of Apollo); it can surmount a turret, crouch upon a church steeple, or move restlessly about the top of a promontory. Numerous modern reports have ball-lightning "scurrying like a mouse" around a house. A connection between Moses and the mice of the Philistines may, therefore, not be entirely fanciful.

The Philistines also placed in the Ark as a propitiatory offering several modelled gold hemorrhoids. This would appear to be a singularly unaesthetic gift; it has quite baffled and embarrassed biblical students. Finally, now, we have clues. Thoth, we know, was the god of healing and is associated with Hebrew-Egyptian mosaic religions, even in the Bronze Serpent Rod (or caduceus) of Moses. Serious electrical shocks can cause nose-bleeding and anal bleeding. So can radiation. The membranes of both organs are electrically hyper-sensitive. Electrical and magnetic shifts promote plagues and changed incidences of heart disease and other troubles[81]. Not to be dismissed is the possibility that, during the Philistine affair, electrical conditions were disturbed. A disturbed electrical situation and probably radioactive fall-out, or some heavily ionized fallout would provoke simultaneously epidemics of several illnesses, hemorrhoidal and general bleeding, enhanced and uncontrolled Ark activity, and thence the religious, unitary "solution" of the biblical scenario.

But, still, a model of hemorrhoids or piles seems unlikely and inexplicable. Then a solution appears, from deep in the etymology of the word "hemorrhoids." We find "haemorrhoid" also "haemorrhoe," from the Greek meaning "blood-discharging." It is "a serpent whose bite was fabled to cause unstaunchable bleeding." [82] The Bible refers to these "serpents" and the plague of bleeding that they caused. These serpents (could they be leeches?) are the same as caused the plague which led to the fabrication of Moses' homeopathic Serpent Rod of Brass, sparks and jets of hissing fire breaking out in connection with radiation and electrical storms. The specific disease of hemorrhoids was probably a conspicuous part of the general bleeding epidemic and was attached to the word after general bleeding epidemics were long forgotten.

The totem and taboo of the Ark would deter other enemies (or allies) who might have been tempted to acquire or imitate the Ark. It is noteworthy that the Bethshemites, in whose territory the Ark was abandoned by the Philistines, and who were connected with the Israelite, suffered the plague, too, and pleaded with the Israelites to come down from the hills and take the Ark away. It had the tabooed reputation of being the Jews' god. Those would properly be accepting Yahweh who accepted the Ark. Other peoples lacked, too, the history - the mixture of catastrophe and science in the Egyptian context - that the Ark grew out of.

Then again it was difficult to construct and operate. Moses was a genius at synthesizing elements and a terrible bully at seeing that the machine was handled properly. Also, the others were probably too sky-oriented, astrological, and the idea of Baal, say, marching along with them humming his own name, would appear weird. Then there was the ever-present problem of technological change: what would their feather-bedding priests do without their sacred time-honored tasks to perform? (only the machinegun finally broke the centuries-old habit of European armies to attack in fine straight rows.) In all of this, I am not arguing that the ark machine was solely Israel's. The same may have been invented elsewhere, even in Egypt, but would not be adaptable to the central complex of functions - military, theological, political, and managerial - which it performed among the Israelites.

When David was King he wished to bring the Ark to Zion where he ruled. So "David went up and all Israel... to bring up thence the ark of God, the Lord, that dwelleth between the cherubim, whose name is called on it." [83]

Yahweh was still there saying "Yahweh."

A great festive party accompanied the ark as it moved on its way drawn by oxen. But at the threshing floor of Nacon, a man named Uzzah "took hold of it, for the oxen stumbled... and God smote him there because he put forth his hand to the ark; and he died there besides the ark of God." [84] The electrocution frightened David so that he waited three months before his second attempt to move it, and this time installed it beside him. (One wonders why the Levites were not tending to the Ark; they are not mentioned.) In a queer incident, David is so happy at having the Ark that he dances naked around it, incurring the reproaches of his wife for making a public display of himself. She is suitably punished for her prudery by becoming barren for the rest of her life.

Now the Ark was ensconced on high ground. It no longer went to war. Yet it is not known whether the Ark was regularly employed for its remaining functions. With David we are in the tenth century, five hundred years after Moses. We wonder whether electrical conditions can any longer support the Ark and whether Yahweh's presence will ever again grace the mercy seat between the cherubim.

In a plaintive passage, Yahweh tells the Prophet Nathan to tell King David that he has not had a decent house but has had to live in tents since leaving Egypt. And we are informed that "the people were sacrificing in high places... because no home had yet been built for the name of the Lord." [85] He asks therefore for a temple, but warns David against rushing into the job. David thereupon designs the Temple and leaves it for his son, Solomon, to build.

Meanwhile it is clear that the Ark needs artificially supporting conditions to work at all. This bodes ill for the Ark as a mobile weapon, and as "inspector-general" of the tribal centers. It is discovered that the Ark works best standing upon a source of natural heat. The proper thermal conditions may be found usually on threshing floors, where in some ancient time the threshing of grain and the heat have become associated [86]. Matthew refers metaphorically to "unquenchable fire" that "will burn up the chaff." [87] David goes looking for a threshing floor on which to place the Ark [88]. Beneath the floor may be a source of ionization, a conduction of charge through rock - many floors being of smooth bare rock.

Gressmann wonders at the Ark being regularly placed upon stones [89]. The Ark has no legs; very well, one might think; therefore it must be placed upon a stand of stones. Rather, the Ark had no legs so that it might be placed on stone. For it is on stone and rock, whether from the Jordan River or an old threshing floor or whatever, and especially on meteoritic stones, that the Ark can charge up negative electricity.

The next artificial support of the Ark comes from being elevated. On high, it can profit from the accumulation of ground charge for point discharge into the atmosphere. Mt. Zion is a hill of Jerusalem. The Ark is there more active. Yet it should now be confessed that the original principle of the Ark is being lost - that it was a weapon of the plains and desert capable of being moved and of assaulting the mountain fortresses where St. Elmo's fire was active, and sometimes too active, as in the case of Jericho.

A third artificial stimulant was water. Water conducts electricity and wetted conductors function better [90]. If the Ark were on deep smooth rock whose surface was wetted, the chances of the Ark becoming operational would be much greater.

Any sacrificial object to be burnt by Yahweh had also to be wetted. So we find King David pouring water around the altar to assist in his sacrifices [91]. He may have also supplied water to the grounding and casing of the Ark to promote its conduction of charge. The altar was on a bare rock threshing floor and Yahweh sent a fire down upon his burnt offering.

All facilitating conditions are brought together in the climactic Temple of Solomon high in Jerusalem - Ark, rock, height, top water, bottom water, and finally a temple that is itself designed as an Ark with devices in its Holy of Holy Rooms, the Inner Sanctum to connect the Ark to the building itself. Seven years were required to build it.

The roof was of gold-plated wood. Indeed there was a separate house of wood inside the outer walls, which were of stone. Inside, "no stone was seen." [92] No metal connections were used on the outer wall; no hammering or metal work resounded

during the construction. Stone, then wood, the insulator; then gold, the conductor. In the Temple court, a "molten sea" holding 12,000 gallons of water rested upon twelve couchant bulls facing in the four cardinal directions; it was for the priests to wash themselves [93].

A multitude of sharp gold points covered the roof of the Temple. The Temple was never struck by lightning during its long existence [94]. Michaelis and others have identified the points as lightning rods and he says that they connected "with the caverns in the hill upon which the temple was situated, by means of pipes in connection with the gilding which covered all the exterior of the building..."[95] Ancient Hindu fountains were also protected from lightning by rods that grounded charges, and the Temple of Juno in Rome was protected by a roof of many pointed sword-blades [96].

One may surmise that the Ark was connected with the deep natural rock and water, and that the smaller cherubim of the Ark were in contact with the giant cherubim, that in turn connected with the roof where exterior rods or spires induced the atmospheric charging.

Scrutinizing the appropriate Biblical passages, we can reconstruct the ultimate setting of the Ark of the Covenant. The Ark was set in a windowless room that was a perfect cube of 20 cubits (about 30 feet). It was placed below two giant cherubim of wood, covered with gold, the tips of whose wings touched each other and the golden walls of the rooms; that is, each cherub had a wingspread of 10 cubits. Gold covered the whole inside of the Temple including the inside ceiling of the roof.

Three possibilities appear: that the whole was a purely symbolic creation not intended to work; that the design was intended to function under the new and weak atmospheric conditions, but could not work without blowing up the Inner Sanctum; that the system was designed to work but could not function, or its functioning was believed to be too dangerous and the connections were deliberately broken. King Solomon, in his dedication speech, is supposed to have said to the assembled throng: "But will God indeed dwell on the earth? Behold, heaven and the highest heaven cannot contain thee; how much less this house which I have built."[97] The speech does not ring out with confidence.

In the very next verse, Solomon prays that "thy eyes may be open night and day toward this house, the place of which thou hast said, "My Name shall be there." Electric eyes and electric name! "When the priests came out of the holy place," on this first occasion, "a cloud filled the house of the Lord, so that the priests could not stand to minister because of the cloud; for the glory of the Lord filled the house of the Lord."[98] Either the system worked, or the priests lit a phosphorous smoke and bun-

gled it in the closed quarters. I doubt that it worked. The conditions were not propitious; if the gigantic apparatus had loaded and sparked, the lightning bolt would have blasted the room of wood and gold to pieces.

Thus stands the Ark. Ultimate perfection. But the "Holy Ghost," so to speak, is gone. Yahweh says little: the mobile weapon of the plains has surrendered to the pyramidal weapon of the mountains. The assimilation is completed. Still the gods of the mountain scarcely speak, nor does Yahweh, now also a god of the heights.

It may be appropriate to use the fact that out of Egypt, in the fifth year of King Rehoboam, son of Solomon, came Shishak, Pharaoh of Egypt. Jerusalem was surrendered without siege. Shishak "took away the treasures of the house of the Lord and the treasure of the King's house; he took away everything,"[99] It is ironic that Shishak should be identified as Thut-Moses III [100] - "Child of Thut" echo of Moses, "the Child. "

It is doubly ironic that Thut (Thoth) should mean the god "Thoth," "Mercury" in Latin, "Hermes" in Greek, who was an electrical god - distinct from the "greater god" Horus or Yahweh or Zeus-Jupiter; his famous caduceus, composed of a winged rod with a serpent entwined upon it is nothing other than Moses' rod of the brazen serpent, the original of which probably ended up in the trophy rooms of Shishak-Thutmoses [101]. It is trebly ironic that Thut-Moses III might have had, as aunt and Queen Mother, Hatshepsut, who has been identified as the Queen of Sheba who visited Solomon and admired so his treasures [102].

An inscription of hers has recently been publicized, in which she boasts that "when I became king, my uraeus threw fire against my enemies." [103] The uraeus denotes a symbol of royal power, but here may refer to an Ark display, employed hundreds of years after Moses and at the time of King Solomon.

Finally, it is ironic that the Ark ended where its idea had begun with Moses - in Egypt, impotent [104]. Nor perhaps were the pyramids employed under Shishak of the New Kingdom as they had been under Thout and his predecessors of the Middle Kingdom. The "Ark School" of Moses was moribund. So was the "Pyramid School" of electricity. The age of pyramids was over.

The Romans relied upon heated oil, levered projectiles, assault towers, well-worked battering rams. Somewhere in the Near East was invented "Greek fire," a sticky, nearly inextinguishable mixture, that was hurled upon the enemy. Everyone relied upon banners, trumpets, drums and images to inspire themselves and terrorize the enemy. Not until the deployment of explosive power in bursting units or by blunderbuss were the effects of the Ark achieved. But then, of course, the natural conditions for the

progressive development of an electrical weapon had disappeared. And there was no Moses around and about to develop electrostatics into other electrical forms - unless it was Nicola Tesla (1856-1943), who sought to make of the whole world globe and its atmosphere an electrostatic machine. But Tesla, a lonely genius akin to Moses, lacked Aaron and Joshua, and led no revolutionary people. He encountered the effective neglect of the "Motor and Wire School" which he himself had helped create. Nor had he the Great Comet or Yahweh.

GOD'S FIRE GONE

What was left of the electrical function was carried out on altars in high places, which would serve on occasion to induce St. Elmo's fire upon sacrifices to produce burnt offerings.

Psalm 78 chants:

For they provoked him to anger with their high places;
They moved him to jealousy with their graven images.
When God heard, he was full of wrath,
and he utterly rejected Israel,
He forsook his dwelling at Shiloh,
the tent where he dwelt among men,
and delivered his power to captivity,
his glory to the hand of the foe.

It is registered that as the Jews were being carried into captivity in Babylonia, Jeremiah the Prophet hid the fire of the Altar in a secret waterless pit [105]. Upon the return from captivity, the priestly posterity repaired to the place and found only "thick water." They took this and placed it upon the Altar, whereupon, the sun striking it, a great flame was kindled. The pit was made a sacred enclosure, sometimes called the chamber of Nephtar (Naphta, oil). The thick water was probably petroleum. The incident is connected with the celebration of the Festival of Lights (Hanukkah). The possible use of petroleum then, at such other times, would supplement the true "Lord's fire" when this became unavailable, or, as may have happened here, too[106], when a chemical fire was needed to excite an electrical discharge.

The age of the prophets had been an age of renewed electrical phenomena. We ought not here discuss this subject, which is extensive in itself, because the Ark was not in action. Then, as Ziegler writes, "The age of the Prophets came to an end with the death of Haggai, Zachariah and Malachi. A Rabbinic book says at this time: "The Holy Spirit ceased out of Israel." [107]

Electricity might still be induced in sacrifices on high places. The Jewish historian, Josephus, writing in the first century of this era, said that the light which "shined out when God was present at their sacrifices" ceased for the Jews two hundred

years before his time, "God having been displeased at the transgression of his laws. "[108]

Under special conditions and with the most elaborate arrangement, high sites such as that of the famous Delphic oracle would still produce electric shocks. These would inspire the Pythoness to utter sounds, which would be interpreted by the priests. A young Scythian visitor, who paid his charges and watched the scene, exclaimed in disgust in a letter afterwards at the great many personal decisions and determinations of public policy which had been arrived at by these means. Plutarch, 1500 years after the Exodus, wondered "Why oracles cease to give answers." He had been himself a priest at Delphi [109]. During his tenure, as described by him, a Pythoness was killed in a way that suggests electrocution, after the oracle's weakness of response had induced unsafe practices – in fact, an over-watering of the ground in the oracle chamber.

Three centuries later, an anti-Christian emperor, "Julian the Apostate," decided to help the Jews rebuild the Temple of Jerusalem, probably to spite the Christians. The project "was dropped when it was reported (as it was on both an earlier and a later occasion) that 'balls of fire' had issued from the old foundations and scared away the workmen." [110]

The name of Yahweh lapsed among the Jews upon their return from the Babylonian exile in the sixth century. One scholar [111] suggests that this happened because Elohim was a more universal god and the Jews began to proselytize in the Greco-Roman world. Or else, says he, the divine name may have been too sacred to utter, and the ritual of the synagogue replaced it by "My Lord *Adonai*." Both may be true reasons and connected with the third, more basic reason, that is, that Yahweh was no longer manifesting himself because he could not. Or he had retired, *deus otiosus*, and would not create the electrical conditions of the earlier world. The name is hidden, not because it was too sacred to utter, but because it was not to be heard.

Notes (Chapter 4: The Ark in Action)

1. Paul F. Mottelay, *Bibliographical History of Electricity and Magnetism*, London:Griffin, 1922, 235. Mason's advertisement is the earliest explicit mention that I have found of the idea that the organization and motions of the solar system can be explained on the principles of electrical forces.
2. T.A. Hankins, 206 *Science* (30 nov. 1979),1066. cf. J.L. Heilbron, *op. cit.* ; Bernard Cohen, *Franklin and Newton*, 1956.
3. *Ex.* 33:9.
4. Buber, 161.
5. *Ps.* 132:2;5.
6. Tompkins, 278.
7. Heilbron, *op. cit.*, 340.
8. John J. O'Neill, *Prodigal Genius*, 1944, 91 *et passim*. Kenneth M. Swezey, *Science* (May 16, 1958). Tesla lived 1856-1943.
9. *Ibid.*, 188, 182.
10. Heilbron, *op. cit.*, 327ff.
11. *Ex.* 31:23-5.
12. Cassuto, 383.
13. Jotham Johnson, ed., *The New Century Classical Handbook*, New York: Appleton-Century-Crafts (1962), 411.
14. Priestley I, 140.
15. V. Grigoryev and G. Myakishev, *The Forces of Nature* (MIR Publ. Moscow, 1971).
16. *Deut.* 10:3.
17. Cassuto, 328.
18. From page 62a of *Egypt and Israel*.
19. Priestley, II,154.
20. Zvi Rix, "The Androgynous comet," I *SISR* 5 (1977),17.
21. Worth Smith is cited by P. Tomkins, *Secrets of the Great Pyramid*, New York, 1975, p. 278, to the effect that the unlidged

open box or coffer of the Kings Chamber inside the Great Pyramid of Cheops had "exactly the same cubic capacity as the Ark of the Covenant." This is almost surely incorrect. The coffer holds 8 cubic royal cubits by Livio Stecchini's computations. The Volume of the Ark would be roughly 5.625 cubic royal cubits. Further, the coffer could readily have been a sarcophagus because of its 78" length, the Ark at about 45" not at all. And the coffer is of a single piece of granite. See also Stecchini, in Tomkins, pp. 322-6. Stecchini identifies three different cubits in Egypt. Piazzzi Smyth held that the "sacred cubit" used in the Great Pyramid was the same as the one used by Moses for the design of the Holy Tabernacle (25. 025 Br. inches), *Ibid.* p. 77.

22. A systematic exposition of what the ancients knew about electricity, and a refutation of the liberal position that they knew very much, is contained in T.H. Martin's *La Foudre, l'Electricité, et le Magnétisme chez les Ancients*, Paris: Didier, 1866.

23. G.E. Wright, *Biblical Archaeology*, London, 1957, 65.

24. *Ibid.*

25. The legend says faces of boys. III G 158.

26. II. Gressmann, *Altorientalische Texte und Bilder zum Alten Testamente*, Tubingen: Siebeck, 1909, plate 106.) The goddesses are probably Isis and Nephthys.

27. *Ibid.*, 158-9.

28. I Sam. 4:4; Cassuto, p.333;also I *Chron.* 13:6 and *Ps* 80:1.

29. 2 *Sam.* 6:2.

30. Cassuto, 336, translating *Ex.* 25:22.

31. Cassuto, 330, rendering *Ps.* 132:7;see also *Ps.* 99:5; I *Chron.* 28:2.

32. Buber,157,159.

33. *Ibid.*, 150.

34. *Ibid.*, 151.

35. For instance, 12.

36. *Ex.* 25 and 37.

37. *Ex.* 25:19; *cf.* 37:8.

38. II Priestley, 150.

39. Ziegler, *YHWH*, Princeton, N. J. : Metron Pubns., 1977., 10.
40. Manoilov, 120; Jellinek, *Elektrische Unfälle*, Vienna, 1925.
41. *Ibid.*, 150.
42. *Lev.* 10:1-2. A parallel occurred in Roman history: Tullus Hostilius was a prince "who found in the *Book of Numa* instructions on the secret sacrifices offered to Jupiter Elicius, made a mistake, and, in consequence of it, 'he was struck by lightning and consumed in his own palace.'" (H. Blavatsky, *Isis Unveiled*, 1877, 527, quoting here Livy, *Rom. Hist.* I, ch.31 and also Piso and Pliny.
43. III G 187.
44. *The Pentateuch and Haftoras*, London: Soncino Press, 1938, 480.
45. Velikovsky thinks (*W. in C.* p. 56) that the "strange fire" was petroleum.
46. *Levit.* 10:1-7.
47. *Levit.* 16:2.
48. Ziegler, 27.
49. Mottelay, 204.
50. G III 228-9.
51. *Ex.* 23;28 (New World Trans.)
52. Gressmann, *Die Lade Jahves*, 3-6, is baffled at the idea of the Ark being a direction-finder (see next page) and thinks it was hitched behind animals who were "given their own heads" with the Israelites trailing along behind.
53. Footnote to *Ex.* 25:10-22, p.99.
54. *Num.* 10:33.
55. III G 235-6.
56. Ziegler, 23.
57. *Num.* 10:35-6.
58. Ziegler, 24.
59. II Priestley, "The Musical Tone of Various Discharges

Ascertained," 355.

60. E.R. Dodds, *The Greeks and the Irrational*, Berkeley: U. of Calif. Press, 1968 298.

61. *Ibid.*, 299.

62. *Lev. 25:9ff. Cf. Velikovsky, W. in C.*, 155.

63. *W. in C.* 153-154.

64. *Num. 14:40-5.*

65. Ziegler, 28.

66. K.M. Kenyon, *Digging up Jericho*, London, 1957, 43.

67. Chaim Herzog and Mordecai Gichon, *Battles of the Bible*, New York: Random House, 1978, 28. Although these military men are psychologically insightful, the several pages that they consign to the Exodus and the Battle of Jericho suffer from "the four sins of modern biblicism": confused chronology; reductionism; primitivism; and uniformitarianism.

68. I think that Herzog and Gichon perceive correctly that the present word "harlot" was originally a "victualler" or "hostess of an inn", 27.

69. I *SISR* 3 (1976),2-7 and II *SISR* (1977) 16, 19.

70. *Ibid.* and K. M. Kenyon, *Archaeology in the Holy Land*, 3rd ed. London (1970), 197.

71. Kenyon, p. 254-5.

72. "The Conquest of Canaan and the Revised Chronology," I *Interdiscip. Bible Scholar* 1 (Aug. 1979),43.

73. *Joshua 3; Num. 33:48-9; 25.*

74. "Notes on the Bronze Age Tombs of Jericho," *PEQ*, 1955, 128, discussed by Bimson (1979).

75. G III 330-1.

76. When in Vietnam in 1967 the American leader urged a broader approach to the problems of pacification, a Marine general was widely quoted for saying: "Grab them by the balls and their hearts and minds will come along behind."

77. *Jud. 17:3.*

78. Theodor H. Gaster, *Myth, Legends, and Customs in the Old Testament*, New York, Harper and Row, 451-3.

79. Ziegler, 107-8.
80. Ziegler, 107 and *cf.* Josephus, II Works, Ch. 9:6, 120.
81. Manoilov, pp. 60-1, 72; Fred Soyka, *The Ion Effect*, New York: Dutton, 1977.
82. *The Oxford English Dictionary*.
83. I *Chron.* 13:6.
84. II *Sam.* 6:1-7.
85. I *Kings* 3:1-2.
86. I *Chron.* 21:15-22, 26.
87. Ziegler, 229; *Matt.* 3:11.
88. 2 *Sam.* 24:18-24.
89. *Die Lade Jahves*, 17.
90. *Cf.* R.T. Omond, 40 *Nature* 102, May 30, 1889 for a description of the enhancement of St. Elmo's fire by water.
91. II *Sam.* 24:16-25; I *Chron.* 21:15-22,26.
92. I *Kings* 6:18.
93. II *Chron.* 4:6.
94. Josephus the Historian, *Jewish Wars*, bk V, ch.5; Motteley, *Biblio. Hist.*, p.10.
95. *Magazine Scientifique de Gottingen* (1783), no.5: quoted by H. Blavatsky. *Isis Unveiled*, I, 528.
96. *Ibid.*, 527-8.
97. I *Kings* 8:28.
98. II *Chron.* 7:1-2.
99. II *Chron.* 12:9.
100. Velikovsky, *Ages in Chaos*, ch. 4, Eva Danelius, "Did Thutmose III Despoil the Temple in Jerusalem?" II *SISR* 3 (1977-8), 64-79.
101. The rod destroyed by Hezekiah was most likely an imitation of the original.

102. Cf. Eva Danelius, (discussing Velikovsky, *A. in C.*, ch. 3), "Identification...", I *Kronos* n°3 (1975), 3.

103. *New York Times*, May 4, 1941, pp. 1, B12. Hans Goedicke associates the tablet with the Exodus, and the tidal wave of Exodus with the explosion of the volcano of Thera-Santorini to the north. But Hatshepsut came in Solomon's time (948-927 B. C., see Geoffrey Gammon, "A Chronology for the Eighteenth Dynasty," II *S.I.S.R.* no. 3, 1977-8, 90-4); the Exodus occurred around 1440 B.C., by Biblical reckoning, as developed by Velikovsky in *Ages in Chaos*; and Thera, or Thira, exploded about 1000 B.C. (see my *Chaos and Creation*, 1981, following Isaacson).

104. Since the Ark is no longer mentioned until the 7th century B.C. (R.H. Kennett, "Ark," I *Ency. Rel. and Ethics*, p. 791), and three possible arks are pictured on the bas-reliefs of Thutmose's booty, and no ark is mentioned in Nebuchadnezzar's booty from Jerusalem, Velikovsky's reliance upon legendary source for believing the Ark was not taken (*A. in C.*, p.158) may be misplaced. Cf. III G. p.158. But Velikovsky in *A. in C.* p.210, fn. 14, reports in contradiction an Abyssinian legend that Menelik, a son of Solomon and one who may be the Queen of Sheba [Hatshepsut], stole the Ark. In a booklet published by a fundamentalist sect, the British Israelites, and reported to me by Hyam Maccoby, the thesis that Shishak looted the Ark is asserted.

105. The first letter of the Second Book of Maccabees.

106. 2 *Ma.* 1:31-6. Perhaps a search for the pit of Naphtha might locate a source of badly needed oil for Israel.

107. Ziegler, 72, citing *Tosefta Sotah*, xiii, 52.

108. *Works*, III, 9, 194.

109. Ziegler, ch. 19.

110. 10 *EB*, "Julian the Apostate," 333. III. X *EB* 786.

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