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138.0 NEW LIGHT FROM EXCAVATIONS AT TEL SHEVA, ISRAEL (BIBLICAL BEERSHEBA). By LeGrande Davies. A paper read at the Twenty-fourth Annual Symposium on the Archaeology of the Scriptures, held at Brigham Young University on October 26, 1974. Mr. Davies is a masters-degree candidate in the BYU Department of History, a part-time instructor in the BYU Department of Ancient Scripture, and a staff member of the Tel Sheva excavation being carried out by the Institute of Archaeology of Tel Aviv University, Israel. He has excavated one season at Gezer under Dr. G. Ernest Wright and three seasons at Tel Sheva under Dr. Yohanan Aharoni (cf. Newsletter, 136.3).

Since 1969, UNDER THE DIRECTION of Dr. Yohanan Aharoni, Tel Aviv University in Israel has been carrying on archaeological excavations at Tel Sheva, the site of ancient Beersheba.

Much history is connected with this Negev site <sup>1</sup> and its immediate vicinity from the time of Abraham down to modern days. This *tel* (Arabic for ruin mound) has now produced some of the most significant archaeological data to be discovered in Israel during the past 20 years.

The present paper will touch upon five subjects which have been affected by this new information:

- I. City Planning: were the buildings of ancient Israelite cities placed haphazardly, or were the cities planned before they were built?
- 2. City Walls: may the priority of "casemate" vs. solid walls surrounding ancient cities be used to date such sites?
- 3. Stables or Storehouses: were the "stables of Solomon" excavated years ago at Megiddo really stables, or were they rather storehouses?
- 4. Dust and Ashes: how is the phrase, "dust and ashes," as used in the Old Testament as a figure of humility, to be explained?
- 5. Temples: what new light do the excavations at Beersheba shed upon ancient Israelite temple building?

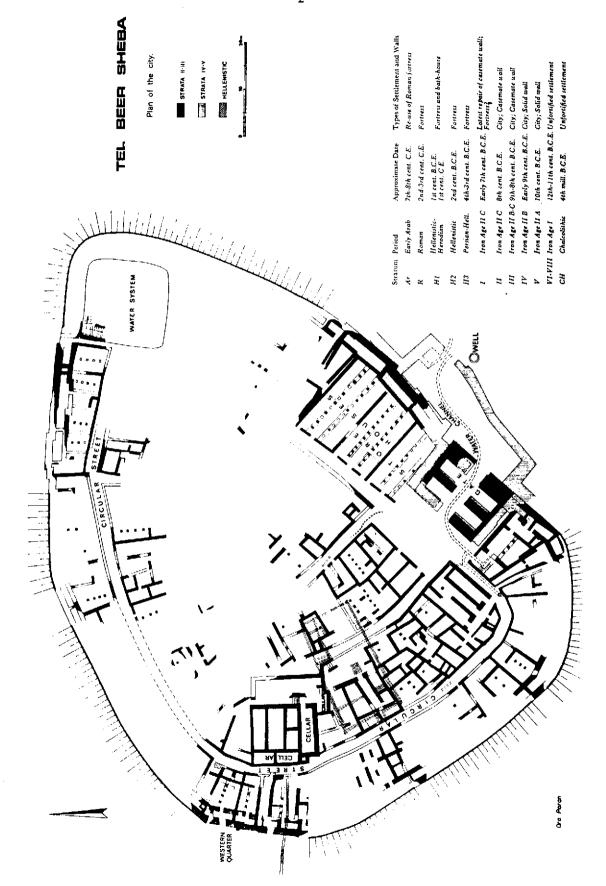
## CITY PLANNING

Tel Sheva has an area of roughly two dunums (a dunum is approximately two-thirds of an acre). This is small when compared with some of the larger tels such as Megiddo and Gezer.

The plans of the successive Israelite cities excavated at Tel Sheva clearly show that the houses "... were built along a straight street line as opposed to houses located in helter-skelter fashion..."; also that "the city-plan was dominated by a peripheral street: starting from the gate it encircles the entire city, with rows of buildings erected on both its sides." <sup>2</sup>

The eastern quarter of the city, directly inside the gate, contains a large plaza, around which the buildings appear to be shops. The "living quarters" are spacious by ancient standards and appear to have been carefully arranged to take full advantage of the breezes from the west, which would have cooled the homes and kept the unpleasant odors of the city at a minimum. The storehouse complex in the eastern part of the city is next to the gate, plaza, and shops, thus making it accessible to caravans bringing supplies and to merchants in need of new goods.

The city had an integrated system of drainage (see Plan), beginning at the west and ending east of the gate.





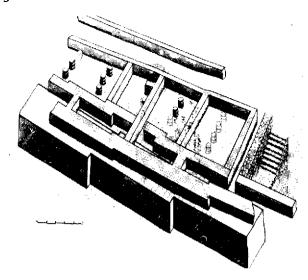


Fig. 1 (left). An example of the water-carrying covered channels of the ancient drainage system discovered during excavations at Tel Sheva.

Fig. 2 (above). The casemate city-wall of the seventh and eighth centuries BC on top of the tenth century BC solid wall. Fig. 3 (left, center). Long, narrow chambers, which proved to be storehouses.



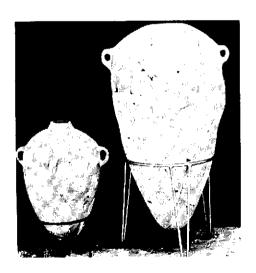




Fig. 4 (right, center). Storage jars with pointed bottoms, as found on the uneven stone pavements.

Fig. 5 (left). The reassembled cut-stone, horned altar, believed to have been in use until destroyed by order of King Hezekiah, about 701 BC.

Fig. 6 (right). Sacred temple vessel bearing the word kodesh (holiness) in the Old hebrew script.



Water-carrying "covered channels" are smaller on the west and run underneath the center of the streets to feed the larger channels, with the final channel, approximately 30 inches wide, passing through the center of the gateway and ending in cisterns east of the city (see Fig. 1).

The fortifications will be discussed more fully below. Suffice it to say at this point that they are strong and were built to form an integral part of the overall city-plan.

It takes little imagination to see the excellent planning that went into Beersheba at the time of Israelite Stratum II-III (Iron Ages II C and II B-C on Plan). Other strata of the Israelite period give similar indications of careful planning. <sup>3</sup>

## CASEMATE VS. SOLID WALLS

It has been widely accepted since the 1930's that the "casemate" type of wall built around a city of ancient Israel was earlier than the solid "salient and inset" type, which superseded it due to advancement in weaponry. 4 (A "casemate" wall is one that is hollow. Although appearing to the enemy outside the city to be built of solid stone, instead it is divided into small rooms, known only to the city's defenders.)

As early as 1959 Dr. Aharoni suggested that the "chronological succession" of casemate and solid walls was not necessary to assume. He used the Solomonic solid wall of Megiddo (Stratum IV) to support this conclusion. He proposed that at cities with a casemate wall, factors additional to defense may have led to the choice between the two wall types, such as available materials, a need for storage (see below, "Stables or Storehouses?"), or the architect's own pleasure. At cities with a solid wall, on the other hand, fortification may have been the single or overriding concern, as must have been the case at Megiddo, an important city of northern Israel. 6

Hazor, Gezer, and Tel Beit Mirsim during the reign of Solomon (tenth century BC) were apparently not very subject to attack by strong outside forces and yet needed much storage space. These cities therefore built walls of casemate construction. 7 On the other hand Megiddo, located at a crossroads and needing to be strongly fortified to control the roads and passes of the area, at that time built a solid "inset and salient" wall.

Beersheba, on the southern border of ancient Israel, seems to have been considered by Solomon to need the same strong protection as Megiddo. Here we find a solid wall dating to the tenth century BC and on top of it an excellent casemate wall of the eighth and seventh centuries. This is the first example of a casemate city-wall even to be found intact superposed on a solid wall. (See Fig. 2.)

An unusual characteristic of the casemate wall at Beersheba is that, as well as the hidden inner chambers, it also possessed salients. The latter served two purposes: (1) to provide additional structural strength, and (2) to make it appear to the enemy outside that the wall was of solid, rather than hollow, construction. Yet at the same time this wall provided much storage space and was more economical to construct than a solid wall.

Thus the excavations at Tel Sheva have provided conclusive refutation of the old theory of dating occupation periods at cities in ancient Israel by city-wall styles. Other dating methods must now be used instead.

## STABLES OR STOREHOUSES?

There were two significant structural features excavated years ago at Megiddo in the north which are now seen to have close parallels at Tel Sheva in the south: (1) the storehouses complex, usually referred to as "stables" and (2) the solid, salient-and-inset, tenth century BC, Solomonic city wall.

Ever since Lamon and Shipton published their initial report on Megiddo, in 1939, in which they claimed to have discovered the "stables of Solomon" at that city, there have been arguments as to the actual function of these "stables." Now, the excavation of the Beersheba storehouse complex (see Fig. 3) should not only lay these arguments to rest but also bring to an end the use of the term "stables." (Though storehouses at other sites have also been excavated, they have not provided the needed answers—they differ in some respects from the Megiddo complex. Those found at Beersheba provide the only real parallel to the Megiddo complex so far excavated.8)

The storehouses at Tel Sheva occupy an area of 600 square meters.

The external dimensions of each are approximately 10 x 18 m. Two central rows of stone pillars divide it into three long, narrow rooms. The width of the central room is about 2.0 m and that of the side rooms is about 2.5 m. The side rooms of all three storehouses (at Beersheba) have been found paved with unhewn stones of varying sizes. The central room always rises about 40-50 cm. above the level of the two sides and is laid with a floor of beaten earth. 9

At Megiddo the southern group of storehouses covers an area measuring about 64 x 85 meters and has five units in it. The northern group is similarly described by the excavators. <sup>10</sup>

Each unit...consisted of a central passage, about three meters wide, floored with lime plaster.... On either side of this passageway was an aisle of similar width, floored with rubble and separated from the central passage by a row of stone pillars about half a meter square....

It will be noticed how similar the Megiddo constructions are to the storehouses uncovered at Tel Sheva.

The arguments for identifying the Megiddo com-

plex as stables have been thoroughly refuted by James B. Pritchard. 11 A summary of his counterarguments follows:

- 1. There is an insufficient number of "holes" in the corners of the pillars labeled as tethering posts to accommodate a large number of horses.
- The "managers" are of insufficient depth and number to feed efficiently as many horses as proposed by the excavators.
- 3. The structure of the buildings is impractical for the housing of horses, necessitating as it would the removal of all other horses if even one were in need of treatment or care.
- 4. The paved stone area appears where the horses are reputed to have stood. Rough stones have an adverse effect upon animal hoofs, especially those of horses.
- 5. The "water tank" is made of sun-dried mud bricks. "Anyone who has ever seen the effect of a few heavy rains on mud brick is aware that this tank, even though coated with 2 centimeters of mud plaster, would have dissolved quickly if filled with water."
- 6. The artifacts and other remains do not show any evidence of animal habitation, such as the wealth of trappings and "ornate fittings" depicted upon the "reliefs of Assyrian cavalry." Instead, objects such as pins, jars, beads, and spindle whorls show human habitation.

We might add two further points to Dr. Pritchard's astute observations:

- 1. The perpetual need to fill the "water tank" of ancient Megiddo, which could have held 2,775 gallons, would have made it imperative to connect it with the city's sophisticated water system, or at least have required that water be made easily accessible to the immediate area of the tank, which apparently was not done.
- 2. Still more significant is the fact that chariots are mobile units. The defenders would not have placed them in an untenable position behind a wall with a gate large enough for only one chariot to exit at a time. That would have rendered the chariot force virtually useless in time of a surprise attack. Rather, pens and sheds built on open ground would have allowed the chariots effective mobility upon short notice, not to mention the far greater ease of cleaning such an area, as opposed to cleaning uneven stone floors within a building.

We should never forget the experience of the Arameans (Syrians) as told in 1 Kings 20. After bringing their superior chariot force into a mountainous region of Samaria to fight Isreal they lost to a much inferior one because of their lack of maneuverability.

Likewise, we should not forget the battle of Deborah against Sisera (Judges 4, 5). When the mobility of the Canaanite chariots was lost, because of rain and muddy ground, they were destroyed.

Without mobility, chariots become useless. The stables would not have been palced within Megiddo but rather outside its walls, where the chariots could have been of some value.

It has been graphically shown by the contents of the storehouses at Beersheba-structures similar to the "stables" of Megiddo—that buildings having three long rooms separated by pillars were for human use. For example, in the room designated Loci 221 and 222 by the excavators.

136 intact vessels were uncovered . . . ; they were distributed in the following manner: 35 bowls, 5 deep bowls, 1 crater, 21 cooking pots, 36 storage and hole-mouth jars, 2 flasks, 1 stand, 4 lamps, 30 juglets, jugs, decanters and 1 strainer. 12

Each of these three buildings at ancient Beersheba has yeilded between 100 and 140 intact vessels per side room, most of them for storage, as well as large quantities of lentils and grains; but no accounterments for stables. It seems sensible, therefore, to label these buildings storehouses.

The same kinds of pottery were found at Megiddo, though not in so large a quantity nor of the same quality. It is logical, therefore, to conclude that the Megiddo complexes were also storehouses.

Practically all vessels from the Beersheba storehouses were found on the stone pavements but not in the center aisles or passageways. It appears that the purpose of the uneven stone floors was to assist in keeping vessels upright, as the shape of Israelite storage jars is not compatible with flat floors (see Fig. 4).

The "managers" found in the Beersheba storehouses, as well as at Megiddo, appear rather to have been for measuring purposes. The "water tank" at Megiddo could also be considered a measuring device.

The single hole on each of the "tethering" pillars is better explained when such pillars are viewed rather as places for animals to stand while being unloaded. The wares would then have been placed in storage in one of the nearby side rooms. These "tethering" holes face the center aisles and occur randomly.

Another point to consider is the need which the ancient city may have felt for storage space. At both Megiddo and Beersheba extensive facilities were needed for keeping food for the populace. Now it was actually possible to utilize the city wall itself for storage by the simple expedient of building it in the first place as a casemate wall, that is, hollow inside (see above). Thus Hazor, Gezer, and other cities encircled with casemate walls already had in those walls abundant space for storage, thereby making it unnecessary to build special storage complexes within the city. At Megiddo (Stratum IV) and now at Beersheba, on the other hand, it has been found that the city walls had already been built of solid construction when the storehouses were first erected.

## DUST AND ASHES

The Old Testament makes frequent reference to "dust and ashes" as a sign of sorrow, repentance, or humility. <sup>13</sup> In Hebrew these two words are strikingly similar, 'epher with the letter 'ayin spelling dust and 'epher with the letter 'aleph' spelling ashes. It was not, however, until the excavations at Beersheba that the full meaning of the phrase was realized.

When excavated floors are exposed to a year's weathering, "no signs of cracks or buckling" are apparent, though much of their substance is loess. (Loess is a soil which contains "relatively large amounts of clay," <sup>14</sup> a material that has great plasticity when wet). It was discovered after examination that these floors had three layers:

- 1. "The *surface* is a relatively thin layer (5 to 10 cm. thick) composed of different materials...."
- 2. "The underlayer" up to a meter thick consisting of loess and large amounts of ash and charcoal.
- 3. "The bed consists of various coarse materials...."

Of these the underlayer, as well as sometimes even the surface, was made of loess mingled with ash and charcoal. This proved to be a very stable mixture when wet, with little of the plastic quality of loess alone.

An analysis of these materials led quickly to three conclusions:

- 1. "The addition of ashes reduced the shrinking activity and swelling of the native loess."
- 2. The "process of mixing the loess, ashes, and charcoal together made it possible for the water to percolate through the floor or evaporate from it without causing considerable mechanical deformation."
- 3. "Since it does not become a plastic mud when wet, or crack into dusty plates when dry, the mechanical qualities of the improved material make it ideally suited to exposed and frequently tread-upon areas." 15

Many areas have now been found at Beersheba where this mixture of "dust and ashes" is present; for example, in the middle aisles of the storehouses and as a gray-colored surfacing used over plaster floors in those buildings of Israelite Stratum II which were originally part of Stratum III. Even more significantly, the streets of the city had also been surfaced with this mixture.

The basic advantages of this material, as opposed to stone or plain loess, are obvious: it is non-plastic, non-slick, even-textured, and resilient. Also: (1) charcoal is a natural deodorizer; and (2) little time and cost are involved in preparing, laying, and repairing this type of surface.

Wood appears to have been "deliberately burnt" to produce the ashes to mix with the loess. Acacia, tamarisk, white broom, and jujube are among the kinds of wood used for this purpose, all being indigenous to the immediate area around Beersheba.

Bible passages which use the phrase "dust and ashes" (for example, 2 Samuel 13:19, Job 30:19, and Ezekiel 27:30) take on new meaning as we realize that roads and floors—the most humble, trod-upon parts of the city—were used to symbolize the humility and prostration of the sinner or the bereaved. <sup>16</sup>

## TEMPLES AND ALTARS

The religious history of Israel and her people has always been tied to Beersheba. "From Dan to Beersheba" is a phrase that all who have read the Old Testament will remember. Both cities were located in border areas and, as Aharoni and others have so clearly demonstrated, such an area needed not only a fortified city but also a religious structure to mark the entrance into the realm. <sup>17</sup>

The ruins of Arad, an important biblical city of the eastern Negev excavated in the 1960's, had produced impressive temples dating to pre-Israelite through the late Israelite periods. <sup>18</sup> It should be no wonder, then, that as the excavation of Beersheba—the main religious center of the South—proceeded, the archaeologists' expectations should have been high. The foundations of a large Hellenistic (late Greek) temple had been found early in the excavation (see Plan). From it came many figurines and other cultic objects, thus confirming a sacred "temple tradition" at that spot in Tel Sheva.

A Hellenistic temple, however, although important could not have the interest for the excavators that the ruins of another large building had, which came to light later in the excavation at almost the same location. The latter building was found in the Israelite Stratum II-III <sup>19</sup> and was laid on an east-west axis. Visions arose of finding an Israelite temple like those at Arad. But that was not to be: this building was not a temple.

Nevertheless, in 1973 the stones of an Israelite altar were discovered. These were found, surprisingly, in the end wall of a storehouse in the Israelite stratum but located some distance from the large building, i.e. were altar pieces reused by the Israelites of Beersheba as common building stones! Obviously the altar itself had been in an Israelite temple at this city, and had been dismantled at the time of the destruction of the temple and later reused in the construction of the storehouse. This find became even more exciting when the stones were reassembled: they revealed the first Israelite, cut-stone, horned altar of large Levitical proportions ever found (see Fig. 5).

Other cut-stone, horned altars had previously been found at Megiddo, but all were small incense-altars. A single large horn, however, had been discovered there similar to those of the temple altar now unearthed at Tel Sheva <sup>20</sup>

The Beersheba altar, though incomplete, still has all four horned corners. (One corner is damaged, however, the horn having been broken off anciently.) Also among the stones from this altar is one fashioned to occupy a corner position which had been incised with a serpent design (see again Fig. 5).

Finally, in the western housing quarter of the city was found a jar bearing the Hebrew word *kodesh* (holiness), <sup>21</sup> indicating that there had once been an Israelite temple in the immediate vicinity, since the Israelites inscribed that word only on sanctified temple vessels. (See Fig. 6).

The Israelite temple itself at Beersheba has not been found. Very likely, therefore, it was completely destroyed—even the stones of the altar having been carried away and reused in the construction of an Israelite storehouse. This is significant; for in the Bible it is recorded that King Hezekiah, who reigned over Judah in the years 725-697 BC, destroyed ("took away") the sanctuaries ("high places") and altars throughout the land, and concentrated the formal worship of Jehovah at the temple in Jerusalem (2 Kings 18:22).

It is very probable, however, that the Israelite temple occupied the site of the large east-west building of Israelite Stratum II-III—which then, in turn, would date to the period from Hezekiah's destruction of the sanctuaries outside Jerusalem (c. 701 BC) to the fall of Judah to the Babylonians in 587 BC. Under the large Israelite building was found (in the 1973 season) evidence that the temple had been destroyed in accordance with the decree of Hezekiah, its walls removed to bedrock, and those of the extant Israelite building erected in their place. Because of the "planning" of the city, the new building's positioning and dimensions had to follow those of the earlier structure, but the inner configuration was changed.

Another find of 1973 was a basement room or cellar located on the south side of the extant building. The 1974 season brought to completion the excavation of that lower chamber, as well as two others. From one of them, located in the western part, a passageway led to the outside of the city. (This secret passage through the city wall had previously been known but had not been cleared sufficiently to show its size and inner connection, and had therefore been mistaken for a water drain (See Plan).

It should be added that the floors of the rooms other than the basements were laid on top of a bricky fill, at times up to four meters deep, to bring them to the level of the Israelite II-III stratum. Thus they were unlike all other floors of that stratum in the *tel*, which were merely laid on top of an earlier layer of debris.

What the new building was for is open to conjucture. But whatever its use, it contained much olive wood, enormous amounts of pottery, and the entrance to the secret passage leading to the outside of the city.

## **NOTES**

<sup>1</sup>Negev: "the dry country; this refers to the southern regions south of the Judean hill country and the Shephelah beginning slightly to the north of Beer-Sheba in the region where the annual rainfall decreases rapidly the farther south one goes." Y. Aharoni, Land of the Bible, p. 38. The Negev, however, does not include the wilderness areas to the south, i.e. Paran, Zin, and Sinai.

<sup>2</sup> Y. Aharoni, *Beer-Sheba I* (Tel Aviv University Institute of Archaeology: Givatayim-Ramat Gan, Israel, 1974), p. 13.

<sup>3</sup>For a more detailed account than the present paper, and additional ideas, see *Beer-Sheba I*, pp. 13-18 and Plate 84. A newer plan of the city is also included with the latter, to provide the most up-to-date information available.

<sup>4</sup>This chronology of casemate and solid walls was first proposed by W. F. Albright because of his excavations at Tel Beit Mirsim (*Tel Beit Mirsim III*, pp. 5-6) and those of E. Grant and G. E. Wright at Ain Shems (*Ain Shems Excavations V*, pp. 23ff.) See also *Beer-Sheba I*, p. 289.

<sup>5</sup> Y. Yadin, because of his bias to show that casemate walls always date to a time before inset-and-salient solid walls, excavated at Megiddo and found a "casemate wall" which never existed. See BA, Vol. 23, "New Light on Solomon's Megiddo"; also Y. Yadin in *Hazor*, pp. 215-231 (see below, N. 8), and in JNES, Vol. 31 (1972), pp. 302-311.

<sup>6</sup>BASOR, No. 154, pp. 35-39.

<sup>7</sup>It must be remembered that at these three cities strength later became important. But instead of constructing a whole new wall the defenders simply filled the casemates to form solid walls and thus provide the needed protection. See Y. Yadin, The Art of Warfare in Biblical Lands, p. 378.

<sup>8</sup>Y. Yadin, Hazor: The Rediscovery of a Great Citadel of the Bible (Random House: New York, 1975); E. J. Bliss, A Mound of Many Cities (London, 1894), pp. 90-98; B. Mazr, "The Philistines and the Rise of Israel and Tyre," The Israel Academy of Science and Humanities Proceedings, Vol. 1, No. 7 (1964), pp. 1-22 (see specifically p. 11, Fig. 6). Tel Abu Huwan, Tel Qasileh, and Hazor contain only one-building storehouses, not massive storage complexes such as found at Megiddo and Beersheba. This lack of large numbers of buildings should be a plus in identifying these as storehouses rather than stables. The royal storehouses of Megiddo and Beersheba were not for supplying the city only but also the surrounding area.

Beer-Sheba I, p. 23.

<sup>10</sup> R. S. Lamon and G. M. Shipton, Megiddo I: Seasons of 1924-34, Stata I-V, OIP, No. 42, 1939.

<sup>11</sup>J. B. Pritchard, "The Megiddo Stables: A Reassessment," in James A. Sanders, ed., Near Eastern Archaeology in the Twentieth Century: Essays in Honor of Nelson Glueck (Doubleday: Garden City, 1970), pp. 268-276. Y. Yadin still ignores this powerful evidence, as can be seen in his new volume on Hazor, which he admits having written at the end of 1973 and early in 1974 (see above, N. 8).

12Beer-Sheba I, p. 15; Plates 12, 57-63.

13Genesis 18:27; Joshua 7:6; 2 Samuel 13:19; 1 Kings 20:38-41; 2 Chronicles 34:4; Esther 4:1, 3; Job 2:8; 12, 7:21, 20:11, 21:26, 30:19, 38:38, 42:6; Psalms 22:29, 44:25; Isaiah 47:1, 49:23, 52:2, 58:5; Jeremiah 6:26; Jonah 3:6. Though this

is not a complete list, it does give an idea of how commonly this figure of speech was used.

<sup>14</sup>Beer-Sheba I, p. 19.

<sup>15</sup>Ibid., pp. 19, 20.

16 An excellent article by A. F. Rainey has been published in *Tel Aviv* (Vol. 1, pp. 77-83) since the present paper was read at the Annual Symposium in 1974. In it, Professor Rainey covers exhaustively the subject of "dust and ashes" in its Old Testament context.

<sup>17</sup>Y. Aharoni, Land of the Bible, p. 282; Y. Aharoni and Ruth Amiran, "Arad," Archaeology, Vol. 7 (1964), pp. 43-53; B. Mazar, "The Sanctuary at Arad and the Family of Hobab the Kenite," JNES, Vol. 24 (1965), pp. 296-303; W. F. Albright, Archaeology and the Religion of Israel, p. 151.

18 Y. Aharoni and R. Amiran in IEJ, Vol. 14 (1964), pp. 131-147, and in Archaeology, Vol. 7 (1964), pp. 43-53; B. Mazar in JNES, Vol. 24 (1965), pp. 297-303; Y. Aharoni in IEJ, Vol. 17 (1967), pp. 233-249, in BASOR, No. 184 (1966), pp. 14-16, in BA, Vol. 31 (1968), pp. 2ff., and in D. N. Freedman and J. C. Greenfield, eds., New Directions in Biblical Archaeology (1969), pp. 25-39 (includes bibliography); Naor in Proceedings of the American Academy of Jewish Research, Vol. 36 (1968), pp. 95-105, and in Eretz-Israel, Vol. 9 (1969), pp. 10-21.

<sup>19</sup> Israelite debris layers above the Solomonic-period layer called Stratum IV by the excavators, in the order that the layers of the tel were excavated.

<sup>20</sup> H. G. May, *Material Remains of the Megiddo Cult* (OIP, No. 26, 1935); Lamon and Shipton, op. cit., particularly p. 24, Fig. 34.

<sup>21</sup> Beer-Sheba I, Plates 42 (No. 4) and 69 (No. 2).

Abbreviations

BA Biblical Archaeologist

BASOR Bulletin of the American Schools of Oriental Research

IEJ Israel Exploration Journal

JNES Journal of Near Eastern Studies

OIP Chicago Oriental Institute Publication

Editor's Notes: In connection with the reign of King Hezekiah the reader may wish to consult "Sennacherib's Invasion of Judah," by Donald W. Forsyth, in Newsletter and Proceedings, No. 119 (February, 1970), pp. 1-7. See that paper, 119.0, as well as briefer articles in the same issue.

Other remarkable discoveries at ancient Arad-in addition to the temples mentioned above are the ostraca (inscribed pots-herds). These were studied by John A. Tvedtnes: "Linguistic Implications of the Tel-Arad Ostraca," Newsletter and Proceedings, No. 127 (October, 1971), pp. 1-5.

The secret passage found at Beersheba, leading from the large Israelite building to the outside of the city, is of special interest to students of the Book of Mormon: it provides authentic background to the reference in Mosiah 22:6, 7 to a "back" or "secret pass" through the wall of the city Nephi of the ancient Israelite people of the New World told about in that work.

# 138.1 LATE NEWS FROM TEL BEER-SHEVA. During the coming summer season of 1976, LeGrande Davies, author of the preceding report on excavations at Tel Sheva (biblical Beersheba), will serve as an area supervisor at that site for the fourth time, having worked in that same capacity under Dr. Yohanan Aharoni during the summers of 1973, 1974, and 1975 (Newsletter, 136.3).

As in the previous seasons, Mr. Davies will escort a group of BYU students and others to the dig and supervise their summer training in Holy Land archaeology again this year. BYU archaeology students included in the group are: Deanne Gurr, who received the MA degree in April, and John R. Nelson, a graduate student, both of whom will also serve as area supervisors; and Jill Krause, who completed requirements for the BA degree last December. Dr. Ross T. Christensen, a faculty member in archaeology at BYU and Mrs. Christensen, another graduate student in the same field, also plan to accompany the group.

The Tel Sheva excavation is not an undertaking of Brigham Young University or its Department of Anthropology and Archaeology, however. The Department has no official connection with the project.

Beersheba was the city of Old Testament history where Abraham dug a well to water his flocks and where it is believed his son Isaac was born (Genesis 21:30,31). Tel Aviv University, through its Institute of Archaeology, began excavations there in 1969. The 1976 season will be the eighth and last one at the site, according to present plans.

Dr. Aharoni, director of the Institute, died in February of cancer. His place has been taken by Dr. Ze'ev Herzog, and work will continue at Tel Sheva as planned.

138.2 BYU CONSIDERS POSSIBLE COLLABORA-TION WITH ISRAELI INSTITUTIONS. According to recent news releases, President Dallin H. Oaks of Brigham Young University flew to Israel in January, while Dean Martin B. Hickman of the BYU College of Social Sciences flew there in March, to visit Hebrew University at Jerusalem, Tel Aviv University, and other Israeli educational institutions.

Bruce W. Warren, assistant professor of anthropology and archaeology at BYU, plans to spend several weeks in Israel this summer engaged in field investigations.

These trips are part of a study that is now being made of possible future collaboration between BYU and Israeli institutions. It is understood that the feasibility of a continuing program of archaeological excavation and student training in the Holy Land on the part of BYU is included in the study.

(For some years students in the Jerusalem Semester-Abroad program of the BYU Department of Travel Studies have already enjoyed classes in archaeology, including field experiences, under the leadership of John A. Tvedtnes, an advisor to the SEHA Board of Trustees. See Newsletter, 129.3, 132.4).

138.3 PLANS LAID FOR ANNUAL SYMPO-SIUM. SEHA officers have begun work on the Twentyfifth Annual Symposium on the Archaeology of the Scriptures.

Friday and Saturday, September 24 and 25, have been marked for the yearly event. Facilities on the Brigham Young University campus are being arranged. Very likely, general sessions will occupy the whole day Saturday, as heretofore, while papers of a more specialized nature will be scheduled for the preceding Friday evening.

The SEHA Board of Trustees has appointed Dr. Robert W. Bass as general symposium chairman. Dr. Bass has previously served as a symposium committee member, as an advisor to the Board of Trustees, as a trustee, and as Society vice-president. Last year he was named SEHA president for a three-year term of office (see below, 138.4).

Dr. Bass has named the following committee members: Ross T. Christensen, John E. Clark, M. Wells Jakeman, Fred W. Nelson, A. Delbert Palmer, Samuel E. Shepley, and Bruce W. Warren, with Ruth R. Christensen as vice-chairman.

The Symposium Committee has invited the SEHA membership to participate by preparing a paper for possible reading at the annual event. Those wishing to do so should send for a sheet of instructions from the Society office no later than August 1. Write to: Symposium Committee, 140 MSRB, BYU, Provo, Utah 84602.

The Annual Meeting of the Society, at which trustees will be elected for the following one-year term, will also be held next September, it is expected—in connection with the forthcoming symposium.

Further developments will be announced from time to time in the *Newsletter and Proceedings*.

138.4 CHANGES IN SEHA LEADERSHIP. By Ruth R. Christensen and the editor. A number of important changes in the top leadership of the Society for Early Historic Archaeology have taken place during the past year.

# NEW PRESIDENT, VICE-PRESIDENT

Officers elected at a meeting of the SEHA Board of Trustees on May 16, 1975, to serve for a three-year period ending in 1967 are Dr. Robert W. Bass, replacing Dr. Clark S. Knowlton as president of the Society, and Dr. Ellis T. Rasmussen, replacing Dr. Bass as vice-president.

Robert W. Bass, BYU professor of physics and astronomy, was appointed an advisor to the SEHA Board of Trustees and was later elected a trustee in 1972, and served as vice-president of the Society from 1972 to 1975 (Newsletter, 131.2, 131.3).

Papers he has read at the Annual Symposium are: "Mathe-

matical Odds Against the Independent Development of the Semitic Alphabet and the Maya Calendar System" (1972) and "Documentary Evidence of Identity of the Maya 'Five World Ages' Doctrine and the Ancient Near-Eastern Equinoctial Precession Doctrine" (1974), (Newsletter, 131.8, 136.1).

Dr. Bass has also been named chairman of the forthcoming Twenty-fifth Annual Symposium to be held on the BYU campus next September (see above, 138.3).

Dr. Bass is a member of a family distinguished in archaeology and colonial US history. He is the son of Dr. Robert D. Bass, a prize-winning biographer of General Francis Marion, the "Swamp Fox" of American Revolutionary fame. He is a nephew of Dr. Robert Wauchope, director emeritus of the Middle American Research Institute of Tulane University. And he is an older brother of Dr. Goerge F. Bass, president of the American Institute of Nautical Archaeology, which is now working in the Mediterranean area.

Dr. Bass received the baccalaureate degree in physics in 1950 from Johns Hopkins University. As a recipient of the Rhodes Scholarship he went to Oxford University for graduate study, receiving the MA Oxon degree in 1952. He was awarded the Ph.D. in mathematics at Johns Hopkins in 1955, and then went to Princeton University as a post-doctoral research associate in the mathematics department. Later, on duty with the US Air Force at the plasma physics laboratory at Princeton, he realized the importance of topological stability for thermonuclear plasma confinement, which subsequently led indirectly to an important research project at BYU.

In 1971 Dr. Bass came to BYU to begin the "topolotron" project, aimed at developing an almost limitless, inexpensive, hazard-free, pollutionless, and environmentally ideal source of energy from the hydrogen in sea water. This would be done by controlling nuclear fusion—the process by which the sun and other stars produce energy. A problem is the great temperature thus generated, which would be incompatible with any solid container now known. Therefore, a team of scientists at BYU, including Dr. Bass as the principal inventor, is working to create a "shatter-proof magnetic bottle" or topolotron to confine the plasma of electrically charged particles preliminary to nuclear fusion. The computer simulations of the topolotron have been extremely promising, according to Dr. Bass, and a first experimental device is in process of construction and is expected to be tested within the next year.

Dr. Bass is "eager for archaeologists to finish the task of elucidating the history of man in the Western Hemisphere in order that non-Latter-day Saints can judge for themselves whether it is consistent with Book of Mormon history."

Ellis T. Rasmussen, dean of religious instruction and professor of ancient scripture at BYU, first became an SEHA member in June, 1949. He received the baccalaureate and the masters degrees from BYU in 1942 and 1951, respectively. BYU in collaboration with Dropsie College for Hebrew and Cognate Learning granted his Ph.D. degree in 1967.

In 1964 Dr. Rasmussen and Dr. Lynn M. Hilton led a BYU Travel Study tour to Egypt, which visited Tomb 33 near Thebes. From an examination of published sources, Dr. Ross T. Christensen had previously identified that tomb as the likely place where Antonio Lebolo discovered the mummies four of which came into the possession of Joseph Smith in connection with the Book of Abraham (Newsletter, 87.0.).

Dr. Rasmussen was appointed an advisor to the SEHA Board of Trustees in 1972 and later that year elected a trustee. In 1972 he served as chairman of the Twenty-second Annual

Symposium on the Archaeology of the Scriptures and in 1973 as chairman of the Twenty-third. His commentaries and summaries provided important background information and added much interest to the papers read (Newsletter, 131.3, 132.1, 132.2, 135.1).

## TRUSTEES ELECTED

The 1975 Annual Meeting of the Society for Early Historic Archaeology, Inc., was held on December 13, at the home of Dr. and Mrs. M. Wells Jakeman in Provo.

As provided by the Society's Articles of Incorporation, Research Patrons have the vote at this yearly election meeting (see below, 138.8). The voting members at the December meeting elected the following six incumbents to serve as trustees for a one-year period ending with the forthcoming Annual Meeting of 1976: Robert W. Bass, Ross T. Christensen, M. Wells Jakeman, Clark S. Knowlton, Ellis T. Rasmussen, and Welby W. Ricks.

Also, four new trustees were elected for the same one-year period: Ruth R. Christensen, Fred W. Nelson, Jr., A. Delbert Palmer, and Bruce W. Warren, thus bringing the total number of trustees at present to ten.

Notes on the archaeological accomplishments and interests of the new trustees follow:

Ruth R. Christensen first came to BYU in 1946 with the intent of studying biblical languages and religion under Dr. Sidney B. Sperry and others. In 1969, now the wife of Dr. Ross T. Christensen, she accompanied the latter on a five-month tour of the Mediterranean region to visit Phoenician sites, scholars, and museum displays (Newsletter, 115.2, 118.0). Since that time she has continued her education, specializing in Near Eastern and Mediterranean archaeology at BYU. She received the BA degree in archaeology in April, 1973, and is now a graduate student in the same field.

In 1971 Mrs. Christensen co-authored with her husband a paper on a Mediterranean subject read at the Twenty-first Annual Symposium (Newsletter, 131.0) and in 1974 another on an Old Testament subject which appeared in *The Ensign*. For the past two years she has served on the staff of the Newsletter and Proceedings.

Fred W. Nelson, Jr. has been a member of the Society continuously since 1961. Papers he has read at the Annual Symposium are: "The Colossal Stone Heads of the Southern Gulf-Coast Region of Mexico" (1966), and "Recent Developments in Olmec Archaeology" (1970). In 1972 he became an advisor to the Board of Trustees (Newsletter, 103.60, 133.0, 131.3.).

In 1966 BYU awarded Mr. Nelson the BS degree with a chemistry major and archaeology and physics minors. He served as a student teaching assistant in archaeology in 1968. He received the P. Kennan Hayes Archaeological Scholarship in 1969, whereupon he directed a general survey of the ancient Maya ruins of Dzibilnocac in the Yucatan Peninsuta in order to determine the area and size of the Preclassic and Classic occupations, and discovered a monument at this site bearing a hieroglyphic inscription. The MA degree in archaeology was granted him at BYU in 1970. His masters thesis, entitled "Archaeological Inves-

tigations at Dzibilnocac, Campeche, Mexico," appeared in 1973 as No. 33 of the Papers of the New World Archaeological Foundation (Newsletter, 113.4, 121.1, 127.5.).

Mr. Nelson's paper, "A Simple Method for Distinguishing Between Organic and Inorganic Paints on Black-on-white Anasazi Pottery," appeared in *American Antiquity*, in July, 1975.

During the past several years Mr. Nelson has been a member of a team composed of a chemist (himself), a physicist, and a geologist, analyzing obsidian for trace elements in order to determine the origin of obsidian artifacts found in Utah and Mexico. This has been done in collaboration with BYU archaeologists Dale L. Berge and Ray T. Matheny.

A. Delbert Palmer served as chairman of the Twenty-fourth Annual Symposium in 1974 (Newsletter, 135. 9136.0).

Born at Calgary, Alberta, Canada, he was educated in accounting and business administration, and engaged in business there until called to establish and serve as the first president of the Chilean Mission of the Church of Jesus Christ of Latter-day Saints. He came to BYU to continue his education some nine years later, took classes in archaeology, obtained the BA degree in Latin American Studies in 1975, and is now a graduate student in the same field.

Delbert is a son of Dr. Asael E. Palmer, well-known agronomist of western Canada and one-time advisor to the government of Pakistan, and Maydell Palmer, a long-time eager member of the SEHA. Delbert's son David also shares his enthusiasm for archaeology, having authored or co-authored papers read at the Annual Symposium in 1966 and 1974 (Newsletter, 103.61, 137.1).

Bruce W. Warren, assistant professor of anthropology and archaeology at BYU, was one of the eight charter members of the Society when it was founded in 1949 and has been a Life Member since 1956. He served as assistant editor, then as editor of the *UAS Newsletter* (now the *Newsletter and Proceedings of the SEHA*) in 1952-1954 (see below). He was elected a general officer of the SEHA in 1959 and an advisor to the Board of Trustees in 1971 (Newsletter, 63.13, 131.3.).

Papers he has read at SEHA meetings include "Nimrod and His Times," which was awarded the first-place prize at the Fall Round Table in 1953, and the following at the Annual Symposium: "The Geography of the Book of Moses" (1952), "NWAF Excavations at Chiapa de Corzo, Southern Mexico" (1960), "The Five World Ages of Ancient Mexico" (1972), "Some Problems in the Interpretation of the 'Jaredite' Account" (1973), and (with David A. Palmer) "The Tapestry of Jucutacato: Early Pictures of a Migration" (1974), (Newsletter, 8.00, 16.0, 66.06, 132.1, 135.1, 137.1.).

Mr. Warren received his BA degree in archaeology at BYU in 1958. Since 1966 he has pursued graduate studies at the University of Arizona, serving as a graduate teaching assistant in 1969, receiving his MA degree in 1970, and becoming the first graduate teaching associate under a new program in the Department of Anthropology in 1971.

Mr. Warren worked with the BYU-New World Archaeological Foundation in southern Mexico from 1955 to 1966 and became its specialist in the analysis of Chiapas ceramics.

From 1972 to 1974 he served a two-year appointment as a sabbatical replacement of Dr. Ray T. Matheny, in the BYU Department of Anthropology and Archaeology, and in 1975 accepted a regular faculty appointment in the same department.

He is a pioneer in the use of electronic computers for artifact processing and analysis. His list of scholarly publications is impressive.

Professor Warren is writing his doctoral dissertation on the ancient ceramics and ethnic identifications of the Central De-

pression of Chiapas. Based on materials from BYU-NWAF excavations, it is entitled "Explorations in Ethnic Classification in Prehispanic Mesoamerica From the Perspective of Chiapas, Mexico."

At present Mr. Warren is doing research and writing on the native codices (ancient hieroglyphic books) and the Chronicles (sixteenth-century writings) of Mesoamerica. He is also preparing a source book of Mesoamerican studies and another of Near Eastern studies.

### ACCEPTS MISSION CALL

Mr. Virgil V. Peterson, a former president and trustee of the SEHA, has accepted a call—together with Mrs. Peterson—to serve for 18 months in the California-San Diego Mission of the Church of Jesus Christ of Latter-day Saints. They have been assigned to the Mormon Battalion Memorial Visitors Center, where they are working as guides.

Because Mr. Peterson would be unable to continue meeting with the Board of Trustees, at his suggestion his name was withheld from nomination as a trustee at the Annual Meeting of the Society held on December 13 (see above).

Mr. Peterson has been a member of the SEHA since 1953 and a Life Member since 1957. From 1959 to 1962 he served as the director of the Society's Salt Lake Chapter. In 1962 he was elected an SEHA general officer, in which capacity he served until 1970. In October of that year he became a trustee and one of the original incorporators of the Society (Newsletter, 62.3, 82.1 123.2.).

In June, 1962, Mr. Peterson became the Society's vice-president and in November, 1965, its president, in which office he served until 1968. It was during his presidency that the SEHA constitution was rewritten and ratified. Following this, he was especially active in efforts that led to the Society's legal incorporation in 1970 (Newsletter, 82.0, 96.00, 109.20, 110.1, 121.0.).

Mr. Peterson has been a member of the annual symposium committee a number of times. In 1970 he served as symposium chairman. It was at that time that Dr. Cyrus H. Gordon of Brandeis University was brought to the campus as guest speaker ("America and the Ecumene of the Old Testament"), which initiated a series of such guest addresses at the Annual Symposium (Newsletter, 120.0, 125.0, 136.0.).

# EDITOR APPOINTED

Following the present issue, the Newsletter and Proceedings will have a new editor.

Bruce W. Warren, assistant professor of anthropology and archaeology at BYU and a newly elected trustee of the SEHA (see above), will serve as editor beginning with the next issue, No. 139. The announcement was made by Dr. M. Wells Jakeman, general editor of the Society, at a recent meeting of the Board of Trustees.

This is Professor Warren's second appointment as editor of the *Newsletter and Proceedings*. His first was while he was a student at BYU during the 1953-54 school year, when he produced six issues, Nos. 14 through 19.

Upon Mr. Warren's retirement from that position in 1954 in order to accept summer employment, Dr. Jakeman, then president of the Society, made the following statement: "Mr. Warren [has] displayed unusual acumen and diligence in searching out archaeological topics of scriptural interest for the reading enjoyment of Society members. A junior at BYU in the Department of Archaeology, he gives high promise of a future of productive scholarship" (Newsletter, 20.4.)

Through the years of field work in Mexico which followed his training at BYU, Professor Warren has become a top-ranking expert in the ancient ceramics of southern Mesoamerica. He is also becoming known for his studies of the Mixtec codices (ancient hieroglyphic books of southern Mexico).

The retiring editor, Dr. Ross T. Christensen, has to his credit 84 of the 131 issues of the Newsletter and Proceedings published since he first took over the editorship in 1952 (Newsletter, 8.2). His offices of trustee, and of secretary and treasurer of the SEHA continue without interruption.

138.5 **MEMBERSHIP EXTENDED.** As decided at a November meeting of the SEHA Board of Trustees, all paid 1975 memberships in the Society have been extended to cover 1976 also.

The reason for the gratis 1976 membership is the slow rate of publication over the preceding year. The only issue of the *Newsletter and Proceedings* to appear in 1975 was No. 137, dated March.

This free extension of membership applies to all Annual and Institutional Members. It does not apply to Complimentary Members, nor of course to Life Members. Membership cards for 1976 were mailed to about 390 persons and organizations on March 1.

138.6 FORMER ASSOCIATE EDITOR GIVEN BLM POST. By Ruth R. Christensen. Bruce D. Louthan, a member of the *Newsletter and Proceedings* staff intermittently since 1967 and its associate editor since 1973, has been appointed a district archaeologist by the

Bureau of Land Management of the US Department of Interior. He is serving in the Moab District; his address is: 279 Park Road, Moab, Utah 84532.

During the 1968 summer season Mr. Louthan worked under J. C. Harrington and Dale L. Berge at Nauvoo in excavations of the Temple baptismal font and the Jonathan Browning home (Newsletter, 107.2, 108.8).

In 1972 Mr. Louthan took part in a National Science Foundation program at the United States National Museum in Washington DC as a research intern under Dr. James Adovasio, an authority on North American prehistoric basketry. In August of the same year he received the BA degree in archaeology from BYU (Newsletter, 132.5, 133.5.).

He has also studied at the University of Utah in Salt Lake City under the distinguished Palestinologist, Dr. Philip C. Hammond, excavator of Hebron and Petra (cf. Newsletter 128.0).

In 1973 Mr. Louthan was awarded the P. Kennan Hayes Archaeological Scholarship. His research project under this appointment resulted in a paper read later that year at the Annual Symposium on the Archaeology of the Scriptures, entitled "An Approach to the Comparative Study of Ancient Mesoamerican and Near-Eastern Ceramics" (Newsletter, 133.5, 135.1.).

In 1974 he directed excavations, funded by the National Science Foundation, at Milk Ridge Point in southeastern Utah.

Mr. Louthan is presently a candidate for the masters degree in archaeology at BYU.

138.7 BYU LIBRARY SENDS INVITATION TO SEHA MEMBERS. "Friends of the Brigham Young University Library" is an organization involved in the development of the Harold B. Lee Library at BYU. It operates by means of membership fees and contributions paid by persons who are interested in this objective.

By an arrangement made in January with Dr. Robert W. Bass, SEHA president, the FBYUL sent a personal letter to all members of the SEHA inviting them also to join the "Friends." Funds thus obtained "will be used to expand the library's holdings in the area of the Society's interest... and improve our collection of material useful in the study of archaeology of the Scriptures."

Anyone who has mislaid his copy of the letter (which was accompanied by a leaflet and a return envelope) may send his inquiry or contribution to: Dr. LeGrand L. Baker, executive secretary of FBYUL, Harold B. Lee Library, BYU, Provo, Utah 84602.

Dr. Baker delivered a paper in 1963 at the Society's Fourteenth Annual Symposium, "A Partial Comparison of Egyptian Theology and the Gospel of Jesus Christ." The papers read at that symposium were published later the same year under a single cover by BYU Extension Publications.

138.8 **RESEARCH PATRONS LISTED.** By Rebecca Christensen. The following new and renewing Research Patrons have been entered into the Society's records since the last previous listing in the *Newsletter and Proceedings* (136.8):

For the year 1974: Charles S. Bagley, Alamogordo, New Mexico; and Corydon S. Bagley, Salt Lake City.

For the year 1975: Esther P. Ainscough, Kaysville; Clifford E. Angel, Gretna, Virginia; Charles S. Bagley, Alamogordo, New Mexico; J. Henry Baird, Rancho Cordova, California; Mrs. Ross Butler, Ontario, Oregon; Richard Allen Garrard, Provo; La Verl C. Giles, Stockton, California; Robert C. Hopkins, Los Angeles, California; Mrs. Harold B. Lee, Salt Lake City; Clisbee H. Lyman, Salt Lake City; Lonnie D. Martin, Phoenix, Arizona; Lowell S. Maw, Ogden; Carroll Bing Mills, Santa Fe, New Mexico; Marion Poulter, Vista, California; Mrs. Basil L. Smith, Las Vegas, Nevada; and Lorenzo H. Snow, Hayward, California.

For the year 1976: Charles S. Bagley, Alamogordo, New Mexico; Alta H. Barber, Orem; Robert W. Bass, Provo; Mrs. Harold B. Lee, Salt Lake City; Carroll Bing Mills, Santa Fe, New Mexico; Harvey J. Platt, St. Johns, Arizona; Lorenzo H. Snow, Hayward, California; and Frank R. Wilkinson, London, Ontario, Canada.

For the year 1977: Charles S. Bagley, Alamogordo, New Mexico; and Robert W. Bass, Provo.

For the years 1978 through 1981: Charles S. Bagley, Alamogordo, New Mexico.

The distinction of becoming a Research Patron may be had by contributing \$15 or more per year to the Society's Research Fund (this is in addition to the regular membership fee). This fund is for use in research and publication in the field of scriptural archaeology under the direction of the Board of Trustees.

As well as having their names published from time to time in the *Newsletter and Proceedings*, Research Patrons have the exclusive privilege of voting at the Society's annual and special meetings. They will be invited to vote, for example, at the forthcoming Annual Meeting, to be held this year at the time of the Twenty-fifth Annual Symposium, scheduled for September 24-25 (See above, 138.3, 138.4).