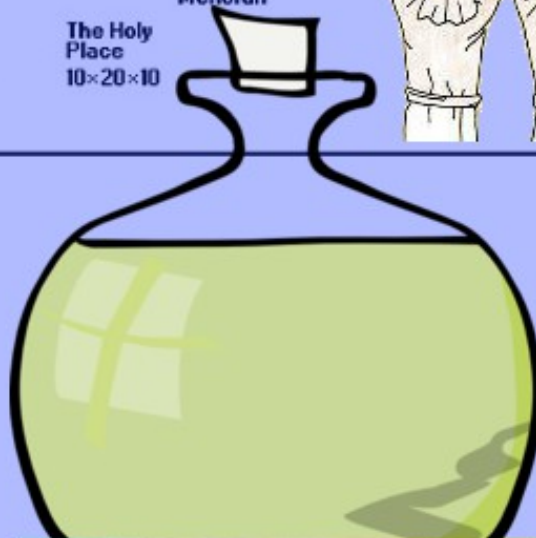
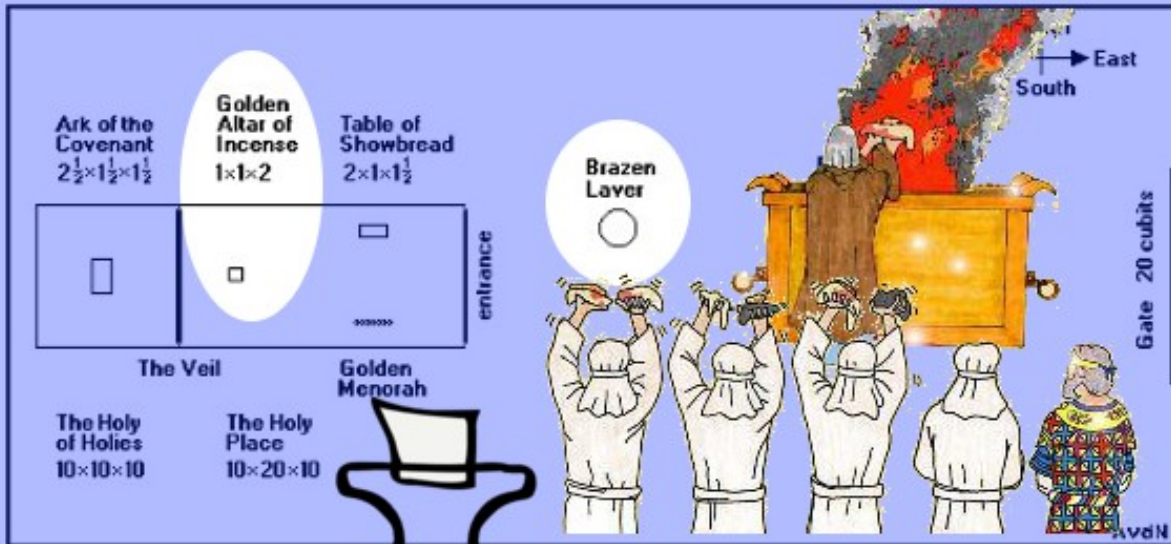


Exodus
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Éxodo
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29-31

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Unit EI

Exodus 29-31

Bill and Shelley Houser

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CONTENTS

- Forward..... page 5
- English: New King James Version..... page 11
 - Questions and Answers..... page 39
 - Set A Ex 29-31..... page 41
 - Set B Ex 30 Questions..... page 43
 - Set B Ex 30 Q&A..... page 47
 - Set B Ex 31 Questions..... page 51
 - Set B Ex 31 Q&A..... page 53
 - Additional Information..... page 57
 - Explanation of Image Elements..... page 59
 - The Hin, Omer, and Ephah..... page 61
 - Estimate of the Sanctuary Shekel's Weight..... page 99
 - Recipe for Grain Offering..... page 107
 - Recipe for Firstfruits Bread..... page 115
- Spanish: Reina-Valera..... page 121
- French: Louis Segond..... page 149
- German: Luther 1545 page 177
- Picture sources..... page 185

Blank pages are included at the beginning and/or end of each Bible translation. These are available for you to write notes, review questions, etc. If you print these pages on colored paper, the sections will be easier to find.

Foreword

The Ready Answers Bible Memorization Program is designed to help you memorize Bible passages easily and quickly. It is based on many well-proven strategies for memorizing. Although this material is designed to help teams prepare for the Pathfinder Bible Experience, beginning early 2016, we hope that others wanting to become familiar with Exodus will find this helpful.

Team Organization:

We are dividing Exodus into 12 segments. Each segment takes approximately 20 minutes to read. If the teams consist of 6 members, each member should learn at least 2 segments. If you want some overlap, consider the following example. Each team member is assigned as the primary person responsible for 2 segments (labeled with “1”) and is assigned secondary responsibility for an additional 2 segments (labeled with “2”). If you have a particularly skilled team member, he or she can be assigned more segments as tertiary responsibility, and all members should have copies of each of the 12 segment booklets, to at least be familiar with all of the Book of Exodus. With this approach, each question will be answerable by at least 2 people. This will help if a member needs some assurance during the competition, or is unable to participate.

Segment	Team Member					
	Alex	Adam	Lexi	Jordan	Jeffrey	Noah
Chapters 1-4	1					2
Chapters 5-8	2	1				
Chapters 9-10		2	1			
Chapters 11-14			2	1		
Chapters 15-18				2	1	
Chapters 19-22					2	1
Chapters 23-25	1					2
Chapters 26-28	2	1				
Chapters 29-31		2	1			
Chapters 32-34			2	1		
Chapters 35-37				2	1	
Chapters 38-40					2	1

Whatever approach you use, we recommend that you try to avoid having any individual be responsible for knowing different portions of scripture that describe similar concepts using different words. We haven't done a thorough analysis, but here are portions that seem similar:

Concept	Chapters describing this concept
Judgments	23, 34
Packing List for tabernacle of the tent	35:11-19 39:33-42
What to Anoint with Oil	30:25-33 (God's command to make) 40:9-11 (Moses doing it)
Anointing Priests	29:1-44 (God's command) 40:12-16 (God's command repeated)

Alter of Incense	30:1-10 (God's command to make) 37:25-28 (making) 40:5 (God's command to setup) 40:26-27 (Moses' setup)
Anointing the Tabernacle components	30:26 40:9 (God's command to anoint)
Bezeliel and Oholiab	31:1-11 35:30-36:3 38:22-23
Ark of Covenant	25:10-22 37:1-9 (making) 39:35 (to Moses) 40:3 (God's command to setup) 40:20-21 (Moses' setup)
Tabernacle Curtains	26:1-14 (God's Command) 36:8-19 (Making)
Tabernacled Boards	26:15-29 (God's Command) 36:20-34 (Making) 39:33 (show Moses) 40:18 (Moses' setup)
Vale and 4 pillars	26:30-33 (God's command) 36:35-36, 38:27 (making)
Setup Instruction, Where to put the furniture	26:33-35 (God's initial Command) 40:2-8 (God's command to setup)
Screen and 5 pillars	26:36-37 (God's command) 36:37-38, 38:27 (making) 39:38 (screen to Moses) 40:28 (Moses' setup)0
Alter of burnt offering	27:1-8 38:1-7 (making) 39:39 (to Moses) 40:6 (God's command to setup) 40:10 (God's command to anoint) 40:29 (Moses' setup)
Tabernacle Court	27:9-19 38:9-20, 38:28, 38:31 (making) 39:40 (to Moses) 40:2, 8 (God's command to setup) 40:33 (Moses' setup)
Priestly Garments	28:1-43 39:1-32 (making) 39:41 (to Moses)
Table of Showbread	25:23-30 37:10-16 (making) 39:36 (to Moses) 40:4 (God's command to setup) 40:22-23 (Moses' setup)

Lampstand	25:31-40 37:17-24 (making) 39:37 (to Moses) 40:4 (God's command to setup) 40:24-25 (Moses' setup)
Bronze Laver	30:17-21 (God's command to make) 38:8 (making) 39:39 (to Moses) 40:7 (God's command to setup) 40:11 (God's command to anoint) 40:30-32 (Moses' setup)
Ransom Money	30:11-16 (God's command) 38:25-26 (collecting)
Judgments	20-23 34:8-28
Sabbath Laws	20:8-12 23:12 31:12-17 35:1-3
Materials for Tabernacle	25:1-8 (God's command) 35:3-19 (Moses' command), 35:20-36:7 (Bring them),
Curtains and Coverings	26 36:14-19 Making 39:34 (to Moses) 40:19 (Moses' setup)

In the table below, we have placed an “x” where similar descriptions are repeated. For example, the “x” at the intersection of Ex 19-22 and Ex 23-25 indicate that there are passages in these two segments that are similar. Within Ex 35-37, there are passages with similar concepts repeated. This also happens within Ex 38-40. We are planning to provide ideas to help with this challenge in those segments.

	Ex 1-4	Ex 5-8	Ex 9-10	Ex 11-14	Ex 15-18	Ex 19-22	Ex 23-25	Ex 26-28	Ex 29-31	Ex 32-34	Ex 35-37	Ex 38-40
Ex 1-4												
Ex 5-8												
Ex 9-10												
Ex 11-14												
Ex 15-18												
Ex 19-22							x		x	x	x	
Ex 23-25						x			x	x	x	x
Ex 26-28											x	x
Ex 29-31						x	x				x	x
Ex 32-34						x	x					
Ex 35-37						x	x	x	x		x	
Ex 38-40							x	x	x			x

The Memorization Method:

By using visual, auditory, and body-motion (kinetic) memory aids, which we call “handles”, you can get information to stick in your short-term memory. By reviewing the information on a regular basis, you can get the information to transfer to your long-term memory.

Steps:

1. Preview
2. Learn
3. Review

Step 1: Preview:

In this step, we recommend that you take a week or two to read through the segment book, at least once per day, and preferably in one sitting. This will help get the entire section into your mind as a large chunk. Try reading it out loud, so you can hear the words. Try reading it (or listening to it) while walking around, or doing some type of motion, like an exercise bike, etc. Different approaches work better for different people. In this preview step, it is best to look at the pictures, and decide where to focus for each phrase of the verses. These will become your handles to learn the verses later. You may also find it helpful to think of some rhyming words, or body motions that seem to go with the phrases, or ways to remember the sequences of verses. However, during this step, you should mainly focus on just getting familiar with the material you are going to learn.

Step 2: Learn

In this step, take each verse, and break it into phrases that are about 3-5 words long. As you get better at memorizing, these phrases can get longer and longer, (our record is about 18 words), but for the first few chapters, keep them short. Then, take a part of the picture, and find something in it to associate with each phrase. Look and point to the picture while you say the first phrase 3 times. When you can say the first phrase perfectly, then start to learn the next phrase. Look and point to a different part of the picture that you are going to associate with the second phrase, and say the second phrase 3 times. When you can say the second phrase perfectly, then say the first and second phrases together, looking at the first part of the picture for the first phrase, and then the second part of the picture for the second phrase. If you are having difficulty joining the phrases together, then practice just the few words at the end of the first phrase, and the first few words of the second phrase together at least three times. Continue on in this manner, until you have learned each phrase in the verse, and tied them together in your mind.

Be creative in making and using handles. The more outrageous the handle, the more likely you will be able to remember it. It does not need to “make sense”, or be grammatically correct, etc. It just needs to help you remember the Bible verse.

So, for example, see the silly story for remembering the order of the names of the children of Israel that came into Egypt for Exodus 1:1-4, and the other silly baseball story for remembering the names of the inhabitants of the land of Caanan that God would drive out, in Exodus 3:8 and 3:17. These are located in the Chapter Questions and Handles section later on in the book.

For using the picture, an example would be for Exodus 1:6 “And Joseph died, all his brothers, and all that generation.”

Break the verse into phrases at the commas, since these are about 3-5 words per phrase.

For the phrase, “And Joseph died”, look at Joseph sitting on the throne.

For the phrase, “all his brothers”, look at the three brothers along the back of the room.

For the phrase, “and all that generation,” sweep your eyes over the whole set of people in a circular motion.

Or, if you prefer to sweep your eyes over all the brothers, for the phrase “all his brothers,” then for the phrase “and all that generation.”, look at the other building which is outside the room, and think about all the other people of that generation that would be living in that building over there. Whatever you choose to use, be sure you use it consistently as you are trying to learn the verse.

We have tried to put something in each picture that can be used as a natural handle for at least one of the phrases. When we have used the same picture multiple times, there is something different about it to distinguish the two different passages. Generally, if God is talking to Moses, telling him what is going to happen, we have used the picture of it happening, with either the burning bush, or a set of rays of light around the picture. Then, when it is actually happening, the picture is used by itself.

The other times we are using the same picture is during conversations with Pharoah and Moses. When Pharoah is speaking, there will be a highlight or focus more on Pharoah, and when Moses is speaking, there will be a highlight or focus more on Moses. Generally, for each conversation, there is a different picture. For most of the conversations, there is only one “back and forth” interaction between Moses and Pharoah. However, sometimes, they answer back and forth more than once in the same encounter. We have used a separate picture for each “back and forth”, to make it easier to remember. So don't rely on picture scene changes only to distinguish different encounters between Moses and Pharoah. Try to set aside a few minutes each day to learn a new verse, and review some of the older verses.

Step 3: Review

We have found that the newly learned verses need more review than verses that you have learned well a little earlier. It seems to work very well to have a Fibonnacci-type review on the verses you learned. For a full discussion on the learning and review process, please download our Teacher's Guide from our website, [http\\www.ReadyAnswers.org](http://www.ReadyAnswers.org).

It is our hope and prayers that you can use this to aid in your learning of the Book of Exodus.

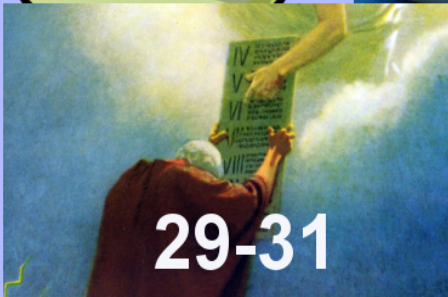
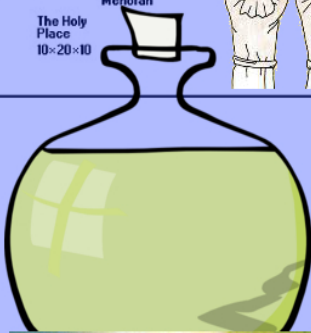
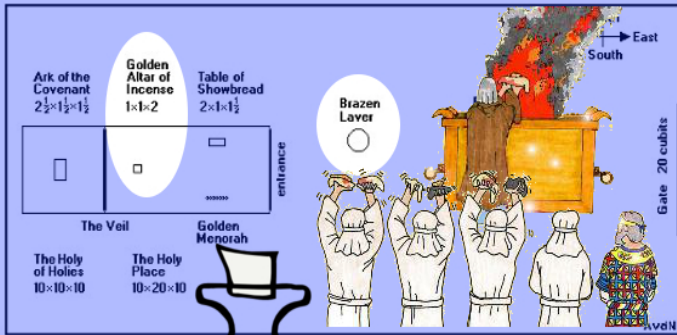
Blessings,
Bill and Shelley Houser



Unit EI

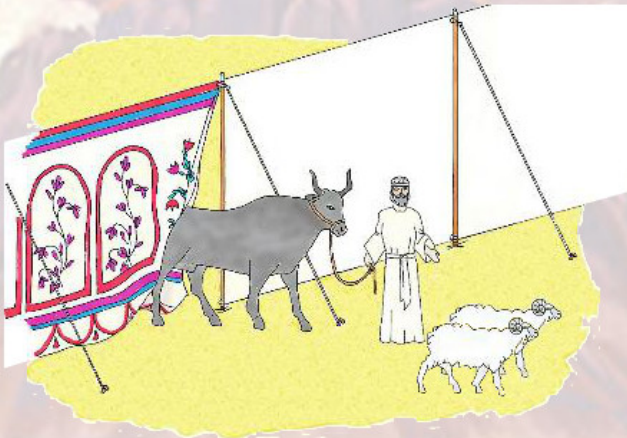
Exodus 29-31

Bill and Shelley Houser
<http://www.ReadyAnswers.org>



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1



Aaron and His Sons Consecrated



Best guess at an interpretation of this is oven-baked unleavened bread.

Chapter 29: ¹“And this is what you shall do to them to hallow them for ministering to Me as priests: Take one young bull and two rams without blemish,

Exodus 29:1

²and unleavened bread,

Exodus 29:2a



Best guess at an interpretation of this is deep-fat fried unleavened bread, like unleavened donuts,

Best guess at an interpretation of this is pan shallow-oil fried unleavened bread, like unleavened pancakes or tortillas.

unleavened cakes mixed with oil,

Exodus 29:2b

and unleavened wafers anointed with oil Exodus 29:2c

4

5



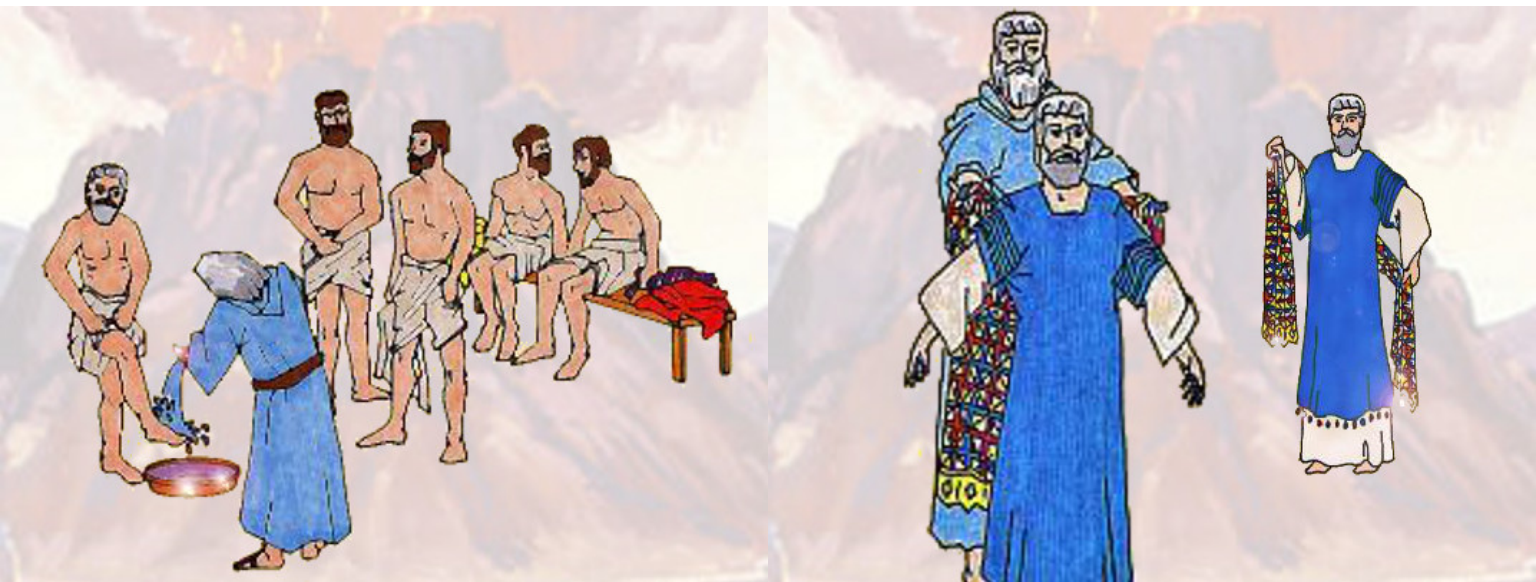
(you shall make them of wheat flour).

Exodus 29:2d

³You shall put them in one basket and bring them in the basket, with the bull and the two rams. Exodus 29:3

6

7



⁴“And Aaron and his sons you shall bring to the door of the tabernacle of meeting, and you shall wash them with water
Exodus 29 : 4

8

⁵Then you shall take the garments, put the tunic on Aaron, and the robe of the ephod, the ephod, and the breastplate, and gird him with the intricately woven band of the ephod.
Exodus 29 : 5

9



⁶You shall put the turban on his head, and put the holy crown on the turban. ⁷And you shall take the anointing oil, pour it on his head, and anoint him.
Exodus 29 : 6-7

10

⁸Then you shall bring his sons and put tunics on them. ⁹And you shall gird them with sashes, Aaron and his sons, and put the hats on them. The priesthood shall be theirs for a perpetual statute. So you shall consecrate Aaron and his sons.
Exodus 29 : 8-9

11



¹⁰ “You shall also have the bull brought before the tabernacle of meeting, and Aaron and his sons shall put their hands on the head of the bull. ¹¹ Then you shall kill the bull before the LORD, by the door of the tabernacle of meeting. Exodus 29:10–11

12



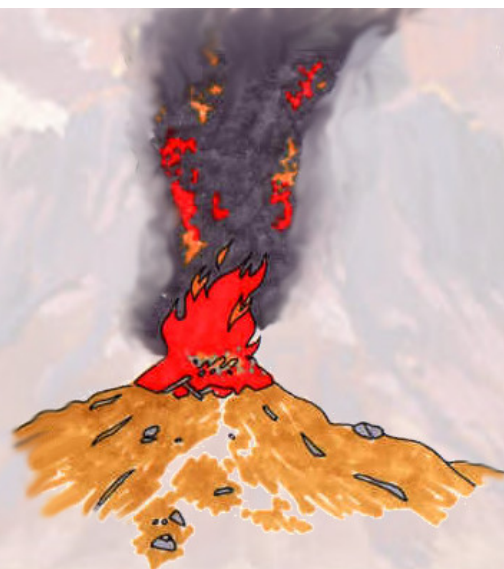
¹² You shall take some of the blood of the bull and put it on the horns of the altar with your finger, and pour all the blood beside the base of the altar. Exodus 29:12

13



¹³ And you shall take all the fat that covers the entrails, the fatty lobe attached to the liver, and the two kidneys and the fat that is on them, and burn them on the altar. Exodus 29:13

14



¹⁴ But the flesh of the bull, with its skin and its offal, you shall burn with fire outside the camp. It is a sin offering. Exodus 29:14

15



¹⁵ “You shall also take one ram, and Aaron and his sons shall put their hands on the head of the ram;

Exodus 29:15

16

¹⁶ and you shall kill the ram, and you shall take its blood and sprinkle it all around on the altar. Exodus 29:16

17



¹⁷ Then you shall cut the ram in pieces, wash its entrails and its legs, and put them with its pieces and with its head. Exodus 29:17

18

¹⁸ And you shall burn the whole ram on the altar. It is a burnt offering to the LORD; it is a sweet aroma, an offering made by fire to the LORD. Exodus 29:18

19



19 "You shall also take the other ram, and Aaron and his sons shall put their hands on the head of the ram.

Exodus 29 : 19

20

20 Then you shall kill the ram, and take some of its blood and put it on the tip of the right ear of Aaron and on the tip of the right ear of his sons, on the thumb of their right hand and on the big toe of their right foot, and sprinkle the blood all around on the altar.

Exodus 29 : 20

21



21 And you shall take some of the blood that is on the altar, and some of the anointing oil, and sprinkle it on Aaron and on his garments, on his sons and on the garments of his sons with him; and he and his garments shall be hallowed, and his sons and his sons' garments with him.

Exodus 29 : 21

22



22 Also you shall take the fat of the ram, the fat tail, the fat that covers the entrails, the fatty lobe attached to the liver, the two kidneys and the fat on them, the right thigh (for it is a ram of consecration),

Exodus 29 : 22

23



²³ one loaf of bread, one cake made with oil, and one wafer from the basket of the unleavened bread that is before the LORD;
Exodus 29:23

²⁴ and you shall put all these in the hands of Aaron and in the hands of his sons, and you shall wave them as a wave offering before the LORD.
Exodus 29:24

24

25



²⁵ You shall receive them back from their hands and burn them on the altar as a burnt offering, as a sweet aroma before the LORD. It is an offering made by fire to the LORD.
Exodus 29:25

²⁶ “Then you shall take the breast of the ram of Aaron’s consecration and wave it as a wave offering before the LORD; and it shall be your portion. ²⁷ And from the ram of the consecration you shall consecrate the breast of the wave offering which is waved, and the thigh of the heave offering which is raised, of that which is for Aaron and of that which is for his sons.
Exodus 29:26–27

26

27



²⁸ It shall be from the children of Israel for Aaron and his sons by a statute forever. For it is a heave offering; it shall be a heave offering from the children of Israel from the sacrifices of their peace offerings, that is, their heave offering to the LORD. Exodus 29:28

28

²⁹ “And the holy garments of Aaron shall be his sons’ after him, to be anointed in them and to be consecrated in them. ³⁰ That son who becomes priest in his place shall put them on for seven days, when he enters the tabernacle of meeting to minister in the holy place. Exodus 29:29–30

29



³¹ “And you shall take the ram of the consecration and boil its flesh in the holy place. Exodus 29:31

30

³² Then Aaron and his sons shall eat the flesh of the ram, and the bread that is in the basket, by the door of the tabernacle of meeting. ³³ They shall eat those things with which the atonement was made, to consecrate and to sanctify them; but an outsider shall not eat them, because they are holy. Exodus 29:32–33

31

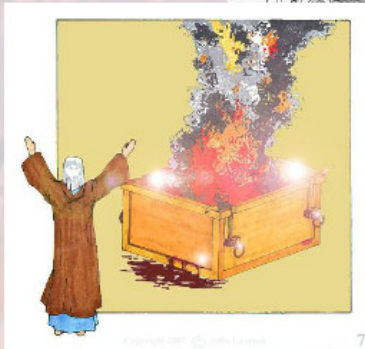


34 And if any of the flesh of the consecration offerings, or of the bread, remains until the morning, then you shall burn the remainder with fire. It shall not be eaten, because it is holy.
Exodus 29:34

35 "Thus you shall do to Aaron and his sons, according to all that I have commanded you. Seven days you shall consecrate them.
Exodus 29:35

32

33



36 And you shall offer a bull every day as a sin offering for atonement. You shall cleanse the altar when you make atonement for it, and you shall anoint it to sanctify it.
Exodus 29:36

37 Seven days you shall make atonement for the altar and sanctify it. And the altar shall be most holy. Whatever touches the altar must be holy.
Exodus 29:37

34

35



The Daily Offerings



38 "Now this is what you shall offer on the altar: two lambs of the first year, day by day continually. Exodus 29 : 38

39 One lamb you shall offer in the morning, and the other lamb you shall offer at twilight. Exodus 29 : 39

36

37



We think one-tenth of an ephah is about 1 US quart, and one-fourth of an Egyptian hin is 0.5 US Cup (see picture source).

41 And the other lamb you shall offer at twilight; and you shall offer with it the grain offering and the drink offering, as in the morning, for a sweet aroma, an offering made by fire to the LORD. Exodus 29 : 41

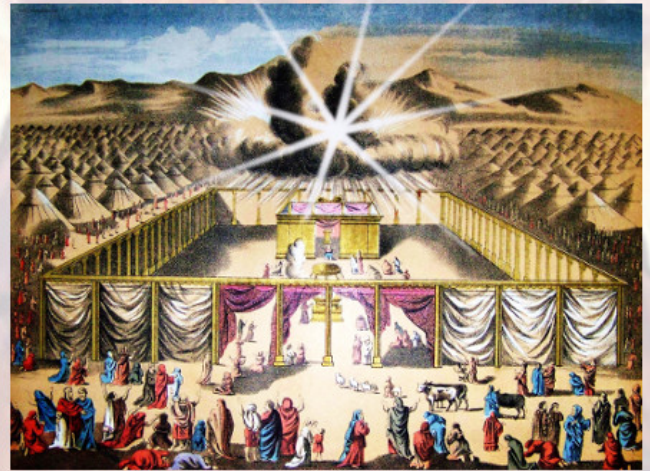
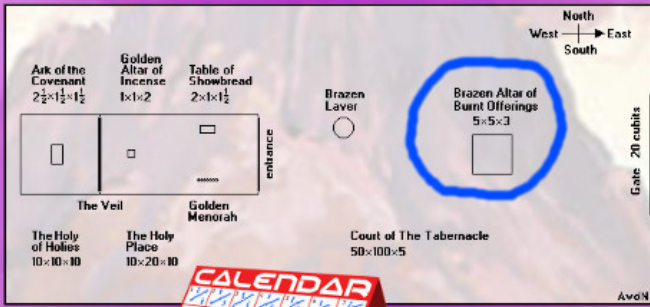
40 With the one lamb shall be one-tenth of an ephah of flour mixed with one-fourth of a hin of pressed oil, and one-fourth of a hin of wine as a drink offering.

Exodus 29 : 40

Notes: The bowl has 1 quart flour and 0.5 cup olive oil. When made into bread, it makes the amount shown for a morning or evening lamb (Numbers 28 : 1-5). It may be baked as unleavened bread or wafers, or cooked two different ways in oil: possibly either shallow-oil pan fried or deep-fat fried (Leviticus 2 : 1-7).

38

39



42 This shall be a continual burnt offering throughout your generations at the door of the tabernacle of meeting before the LORD, where I will meet you to speak with you.

Exodus 29 : 42

43 And there I will meet with the children of Israel, and the tabernacle shall be sanctified by My glory. 44 So I will consecrate the tabernacle of meeting and the altar.

Exodus 29 : 43-44a

40

41



I will also consecrate both Aaron and his sons to minister to Me as priests.

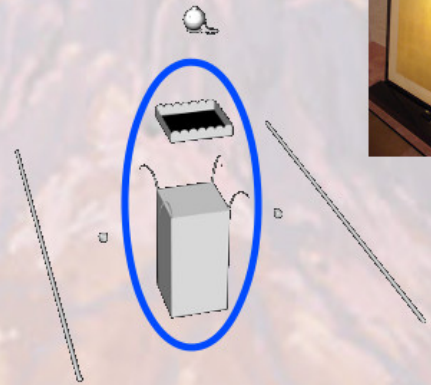
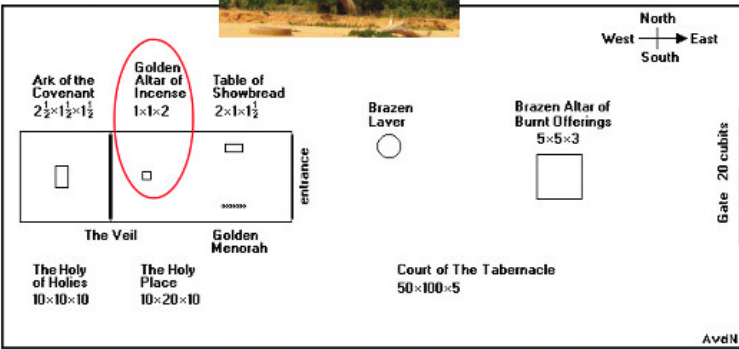
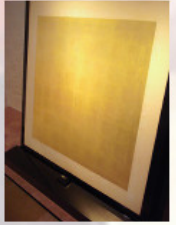
Exodus 29 : 44b

45 I will dwell among the children of Israel and will be their God. 46 And they shall know that I am the LORD their God, who brought them up out of the land of Egypt, that I may dwell among them. I am the LORD their God.

Exodus 29 : 45-46

42

43



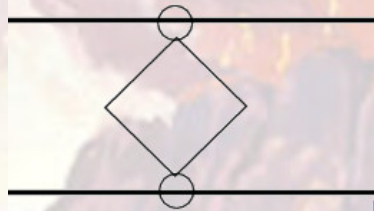
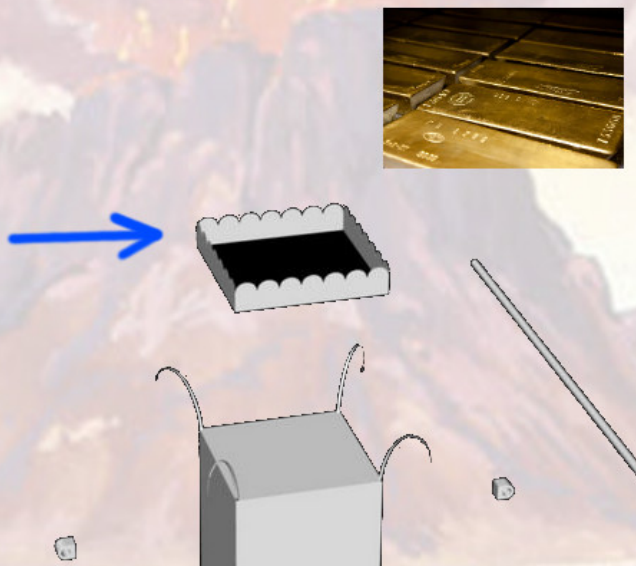
The Altar of Incense

Chapter 30: ¹“You shall make an altar to burn incense on; you shall make it of acacia wood. ²A cubit shall be its length and a cubit its width—it shall be square—and two cubits shall be its height. Exodus 30 : 1–2a

Its horns shall be of one piece with it. ³And you shall overlay its top, its sides all around, and its horns with pure gold; Exodus 30 : 2b–3a

44

45



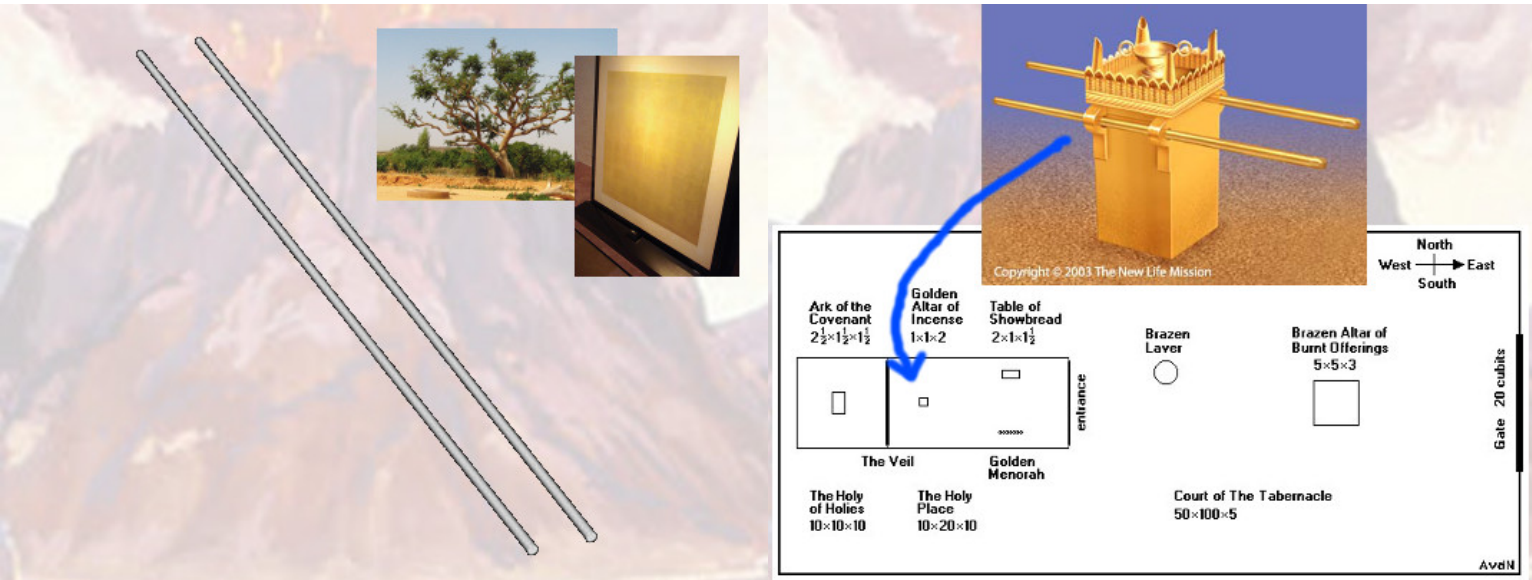
Some artists depict two total rings for the alter. Some depict two on each side.

and you shall make for it a molding of gold all around. Exodus 30 : 3b

⁴Two gold rings you shall make for it, under the molding on both its sides. You shall place them on its two sides, and they will be holders for the poles with which to bear it. Exodus 30 : 4

46

47



⁵You shall make the poles of acacia wood, and overlay them with gold. Exodus 30 : 5

48

⁶And you shall put it before the veil that is before the ark of the Testimony, before the mercy seat that is over the Testimony, where I will meet with you. Exodus 30 : 6

49



⁷Aaron shall burn on it sweet incense every morning; when he tends the lamps, he shall burn incense on it. Exodus 30 : 7

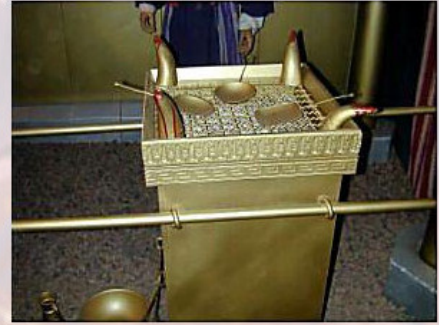
50

⁸And when Aaron lights the lamps at twilight, he shall burn incense on it, a perpetual incense before the LORD throughout your generations. Exodus 30 : 8

51



⁹You shall not offer strange incense on it, or a burnt offering, or a grain offering; nor shall you pour a drink offering on it.
Exodus 30:9



¹⁰ And Aaron shall make atonement upon its horns once a year with the blood of the sin offering of atonement; once a year he shall make atonement upon it throughout your generations. It is most holy to the LORD.”
Exodus 30:10

Exodus 30:10



The Ransom Money

¹¹ Then the LORD spoke to Moses, saying: ¹² “When you take the census of the children of Israel for their number, then every man shall give a ransom for himself to the LORD, when you number them, that there may be no plague among them when you number them
Exodus 30:11–12



Ancient and modern Israelite coins. Gerah is upper right. The sanctuary shekel may have been equal to the Egyptian *qedet* or “kite” (not shown) weighing 10.0g.

¹³ This is what everyone among those who are numbered shall give: half a shekel according to the shekel of the sanctuary (a shekel is twenty gerahs). The half-shekel shall be an offering to the LORD.
Exodus 30:13



Courtesy of Muzeum Lubelskie w Lublinie



14 Everyone included among those who are numbered, from twenty years old and above, shall give an offering to the LORD. Exodus 30:14

15 The rich shall not give more and the poor shall not give less than half a shekel, when you give an offering to the LORD, to make atonement for yourselves. Exodus 30:15

Exodus 30:15

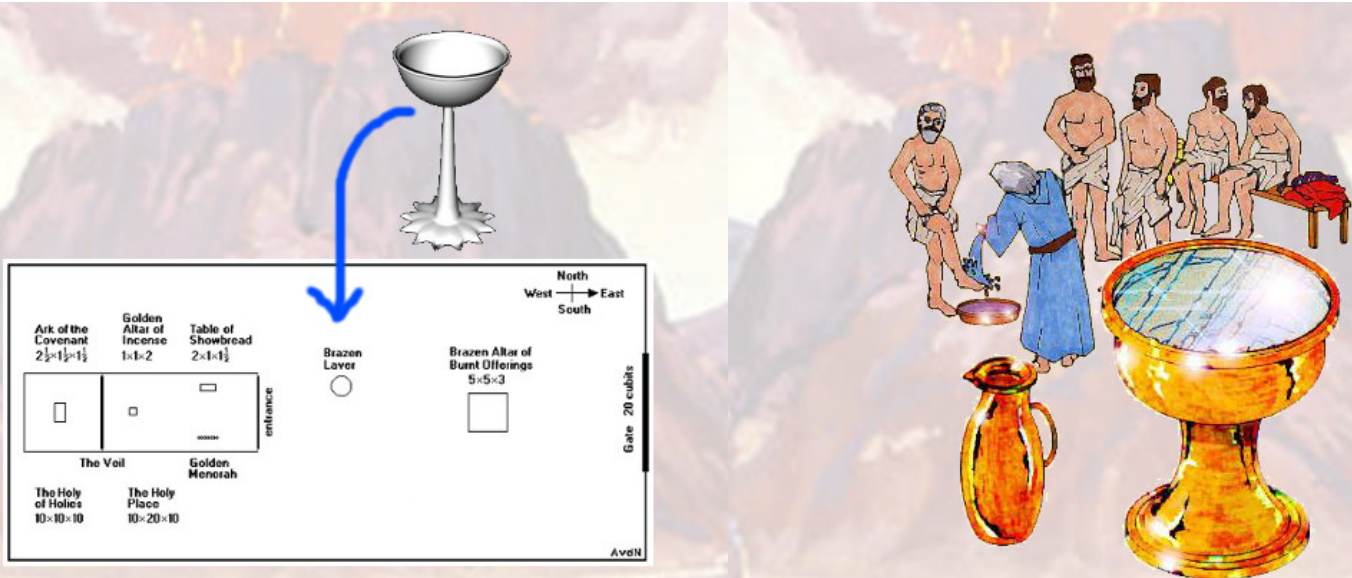


The Bronze Laver

16 "And you shall take the atonement money of the children of Israel, and shall appoint it for the service of the tabernacle of meeting, that it may be a memorial for the children of Israel before the LORD, to make atonement for yourselves." Exodus 30:16

17 Then the LORD spoke to Moses, saying: 18 "You shall also make a laver of bronze, with its base also of bronze, for washing. Exodus 30:17-18a

Exodus 30:17-18a



You shall put it between the tabernacle of meeting and the altar.
Exodus 30 : 18b

And you shall put water in it, ¹⁹for Aaron and his sons shall wash their hands and their feet in water from it.
Exodus 30 : 18c–19

60

61



²⁰When they go into the tabernacle of meeting, or when they come near the altar to minister, to burn an offering made by fire to the LORD, they shall wash with water, lest they die.
Exodus 30 : 20

Before the Last Supper, Jesus washed his disciples' feet and commanded them to do likewise. See John 13 : 14. When they followed this instruction, their hands would have also been washed.

²¹So they shall wash their hands and their feet, lest they die. And it shall be a statute forever to them—to him and his descendants throughout their generations.”

Exodus 30 : 21

62

63



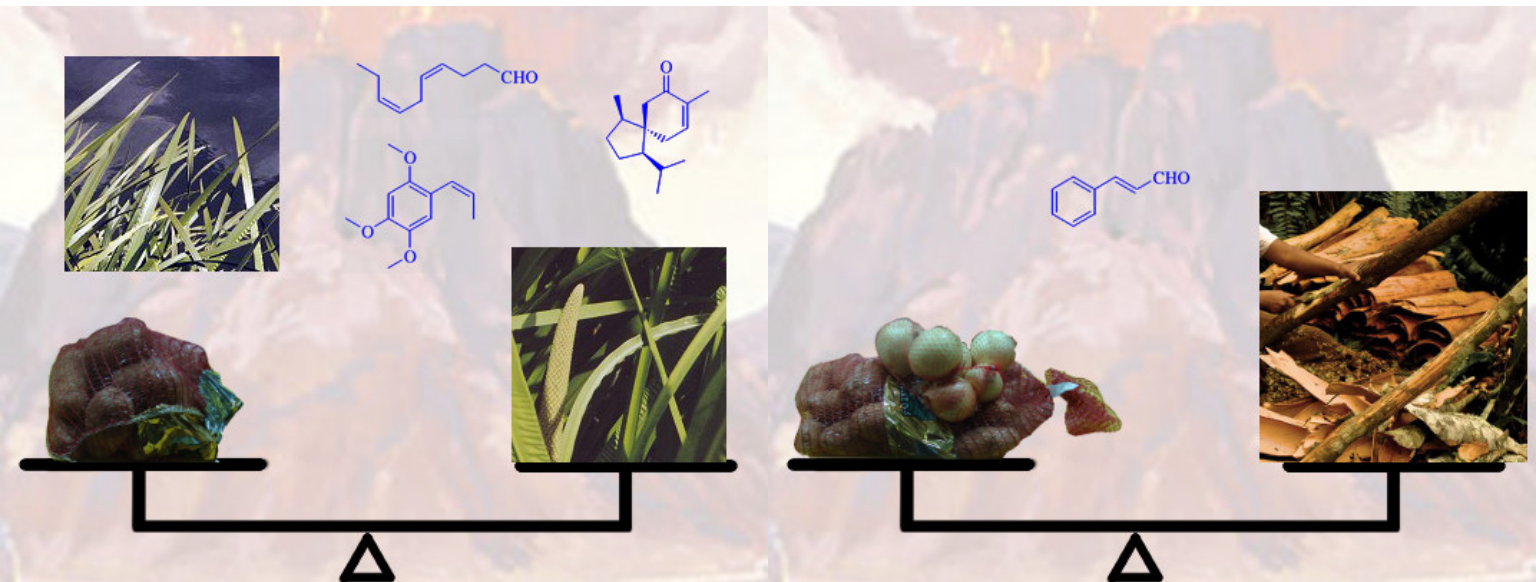
The Holy Anointing Oil

²²Moreover the LORD spoke to Moses, saying: ²³Also take for yourself quality spices—five hundred shekels of liquid myrrh, Exodus 30 : 22–23a

Notes: Myrrh has a sweet-woody odour. Convertme.com estimates 500 shekels to be 12.5 pounds or 5.6 kg. This is about the weight of a 10-pound bag of potatoes plus the weight of a 2.5 pound bag of onions. The incense and anointing oil components in this book are based on wikipedia-estimated definitions.

half as much sweet-smelling cinnamon (two hundred and fifty shekels), Exodus 30 : 23b

Notes: True cinnamon can smell like cinnamon, or clove, or camphor. Convertme.com estimates 250 shekels to be 6.25 pounds or 2.8 kg



Other translations say “calamus”. Calmus is pictured here.

two hundred and fifty shekels of sweet-smelling cane, Exodus 30 : 23c

Notes: Calmus has an attractive, spicy-aromatic character and has been used in perfumes of the so-called Chypre type.

An Egyptian hin during both the old kingdom and new kingdom was 2 USA cups or 1 USA pint.

²⁴five hundred shekels of cassia, according to the shekel of the sanctuary, Exodus 30 : 24a

Notes: Cassia is what is normally sold as ground cinnamon in the US. Five hundred shekels is about 12.5 pounds or 5.6 kg. It smells like the cinnamon that is sold in the United States. Cinnamaldehyde is the main component, which is one of the components of true cinnamon.



An Egyptian hin is 2 US Cups or 1 US pint.

and a hin of olive oil.

Exodus 30:24b



Reliefs on the walls of the tomb of Petosiris, who lived during the early Ptolemaic period, depict some of the aspects of perfume making. Some forms of mechanical and chemical extraction are shown here.

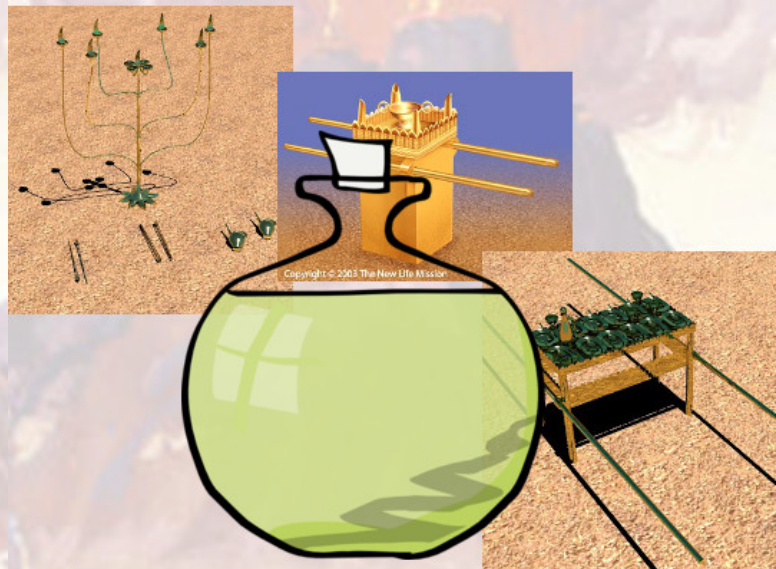
25 And you shall make from these a holy anointing oil, an ointment compounded according to the art of the perfumer. It shall be a holy anointing oil.

Exodus 30:25



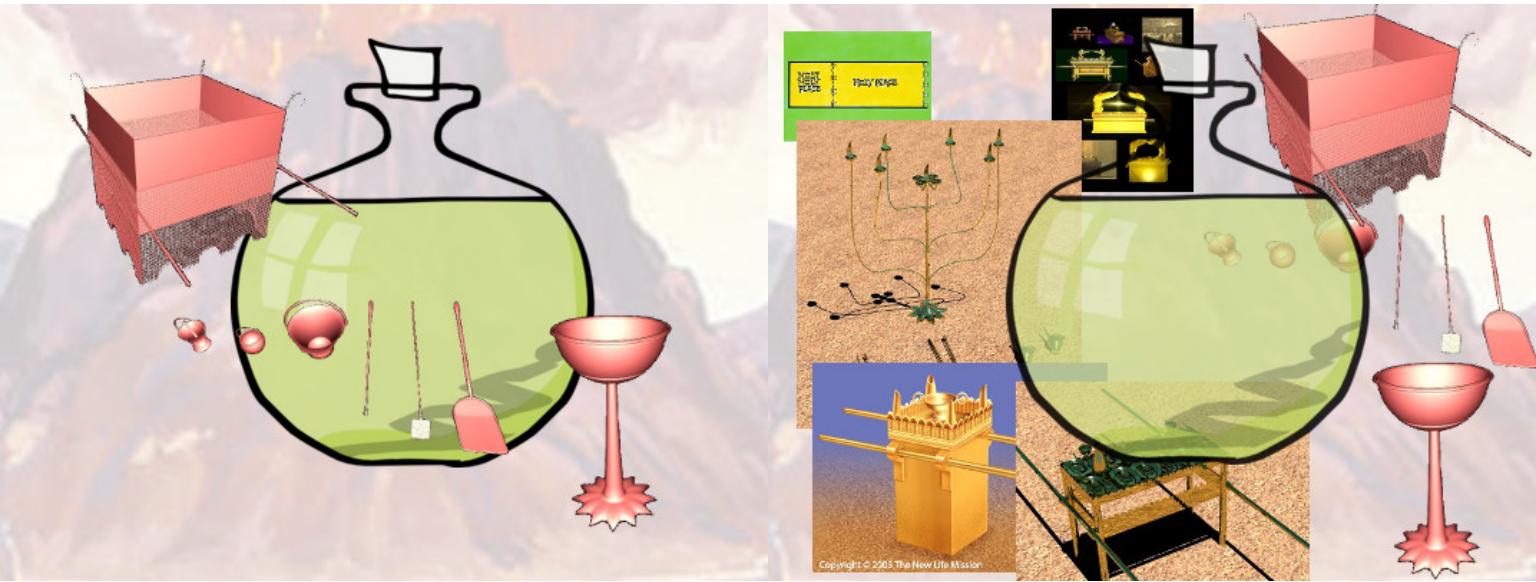
26 With it you shall anoint the tabernacle of meeting and the ark of the Testimony;

Exodus 30:26



27 the lampstand and its utensils, and the altar of incense; the table and all its utensils,

Exodus 30:27



²⁸ the altar of burnt offering with all its utensils, and the laver and its base. Exodus 30:28

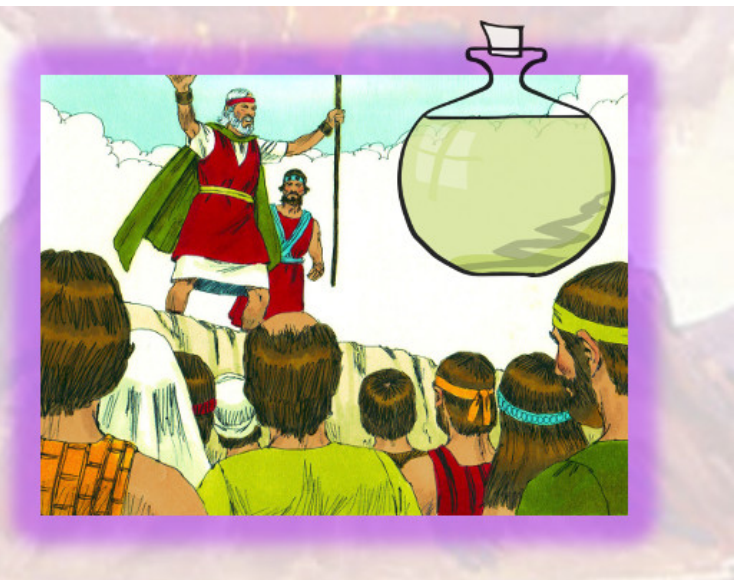
²⁹ You shall consecrate them, that they may be most holy; whatever touches them must be holy. Exodus 30:29

72

73



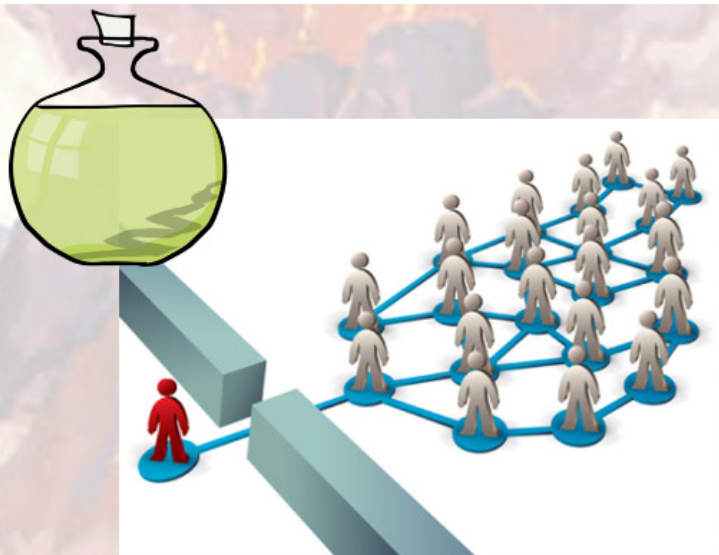
³⁰ And you shall anoint Aaron and his sons, and consecrate them, that they may minister to Me as priests. Exodus 30:30



³¹ "And you shall speak to the children of Israel, saying: 'This shall be a holy anointing oil to Me throughout your generations. Exodus 30:31

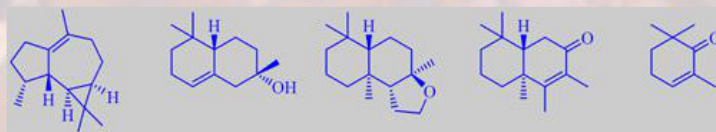
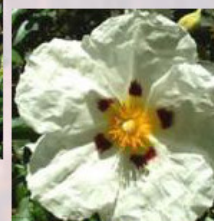
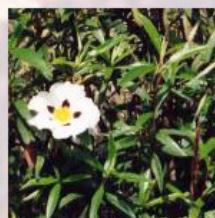
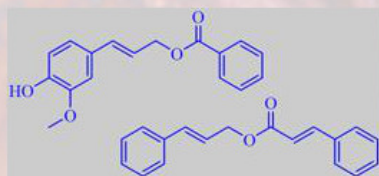
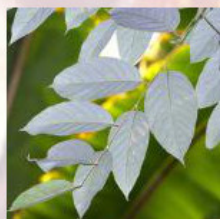
74

75



³²It shall not be poured on man's flesh; nor shall you make any other like it, according to its composition. It is holy, and it shall be holy to you. Exodus 30:32

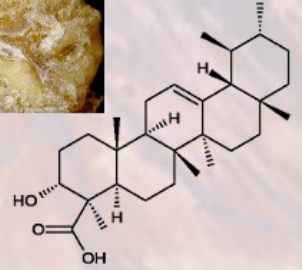
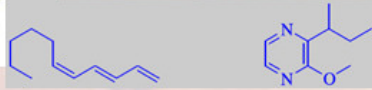
³³Whoever compounds any like it, or whoever puts any of it on an outsider, shall be cut off from his people.”’ Exodus 30:33



³⁴And the LORD said to Moses: “Take sweet spices, stacte and onycha Exodus 30:34a

Notes: The incense spices shown in this book are scholars’ best guesses, but their true identities are uncertain. Stacte may be benzoin. Benzoin gum siam has a pleasant, sweet-balsamic odour with a distinct note of vanilla, whereas benzoin gum Sumatra has a strong odour like styrene.

and onycha Exodus 30:34b
Note: Labdanum has a warm, sweet-resinous, woody-ambery odour. Other possible candidates include clove and spikenard.



and galbanum,

Notes: Galbanum smells like pea pods.

Exodus 30:34c

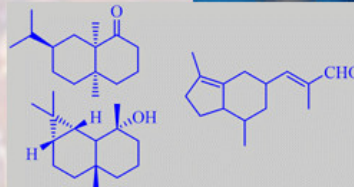
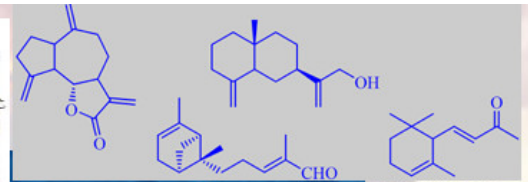
80

and pure frankincense with these sweet spices;

Exodus 30:34d

Notes: Frankincense smells like a balsamic-spicy, slightly lemon, fragrance of incense, with a conifer-like undertone.

81



there shall be equal amounts of each.

Exodus 30:34e

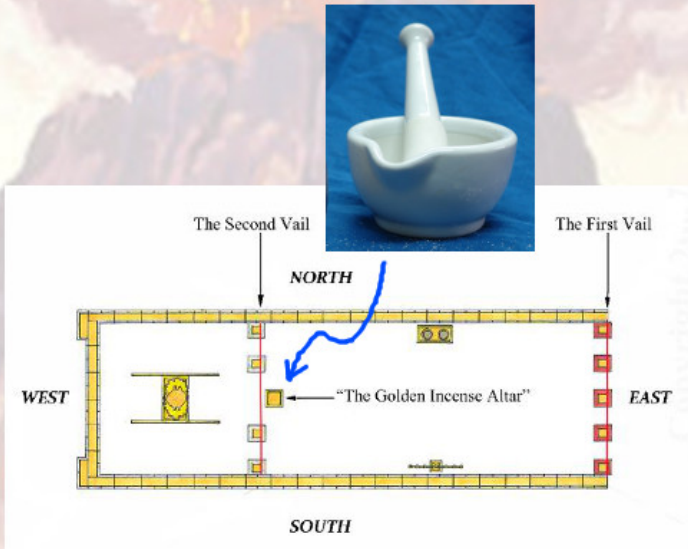
82

35 “You shall make of these an incense, a compound according to the art of the perfumer, salted, pure, and holy.

Exodus 30:35

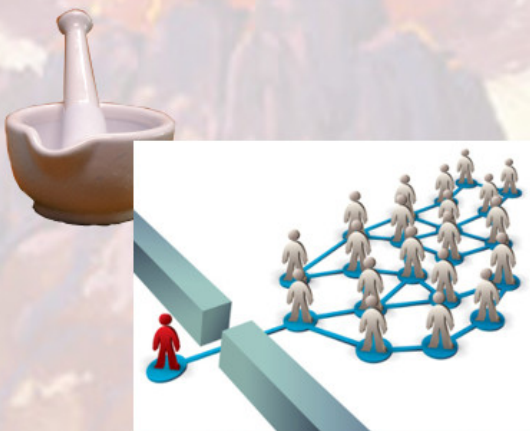
Notes: The Talmud lists several other spices and ingredients that would be necessary to extract, stabilize and preserve this incense. Some of the best guesses for these spices are listed here. Spikenard smells like stinky feet. Costus smells like wet dog.

83



36 And you shall beat some of it very fine, and put some of it before the Testimony in the tabernacle of meeting where I will meet with you. It shall be most holy to you.
Exodus 30:36

37 But as for the incense which you shall make, you shall not make any for yourselves, according to its composition. It shall be to you holy for the LORD.
Exodus 30:37



Artisans for Building the Tabernacle

38 Whoever makes any like it, to smell it, he shall be cut off from his people.”
Exodus 30:38

Chapter 31: ¹Then the LORD spoke to Moses, saying:
²“See, I have called by name Bezalel the son of Uri, the son of Hur, of the tribe of Judah. ³And I have filled him with the Spirit of God, in wisdom, in understanding, in knowledge, and in all manner of workmanship,
Exodus 31:1-3



⁴to design artistic works, to work in gold, in silver, in bronze,

Exodus 31 : 4

88

⁵in cutting jewels for setting,

Exodus 31 : 5a

89



in carving wood, and to work in all manner of workmanship.

Exodus 31 : 5b

90



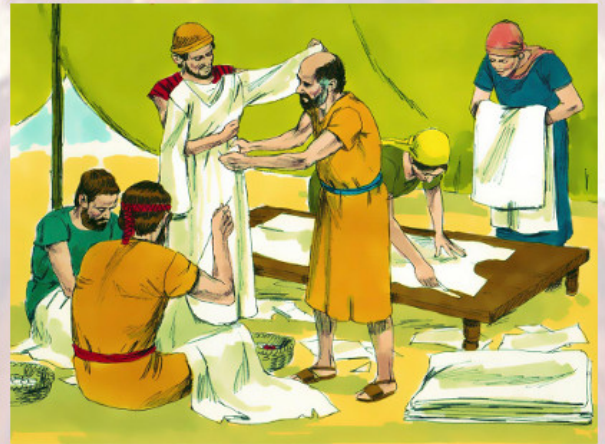
⁶“And I, indeed I, have appointed with him Aholiab the son of Ahisamach, of the tribe of Dan; and I have put wisdom in the hearts of all the gifted artisans, that they may make all that I have commanded you:

Exodus 31 : 6

91



Picture used with permission: (c)2006 www.TheGloryStory.com



⁷the tabernacle of meeting, the ark of the Testimony and the mercy seat that is on it, and all the furniture of the tabernacle— ⁸the table and its utensils, the pure gold lampstand with all its utensils, the altar of incense, ⁹the altar of burnt offering with all its utensils, and the laver and its base—
Exodus 31 : 7–9

¹⁰the garments of ministry, the holy garments for Aaron the priest and the garments of his sons, to minister as priests,
Exodus 31 : 10



¹¹and the anointing oil and sweet incense for the holy place. According to all that I have commanded you they shall do.”
Exodus 31 : 11

The Sabbath Law. “Sanctify” is Strong’s number 6942: A primitive root; to be clean.

¹²And the LORD spoke to Moses, saying, ¹³“Speak also to the children of Israel, saying: ‘Surely My Sabbaths you shall keep, for it is a sign between Me and you throughout your generations, that you may know that I am the LORD who sanctifies you.’
Exodus 31 : 12–13



¹⁴ You shall keep the Sabbath, therefore, for it is holy to you. Everyone who profanes it shall surely be put to death; Exodus 31 : 14a

for whoever does any work on it, that person shall be cut off from among his people. Exodus 31 : 14b



¹⁵ Work shall be done for six days, but the seventh is the Sabbath of rest, holy to the LORD. Exodus 31 : 15a

Whoever does any work on the Sabbath day, he shall surely be put to death. Exodus 31 : 15b



¹⁶ Therefore the children of Israel shall keep the Sabbath, to observe the Sabbath throughout their generations as a perpetual covenant.
Exodus 31 : 16

100

¹⁷ It is a sign between Me and the children of Israel forever; for in six days the LORD made the heavens and the earth, and on the seventh day He rested and was refreshed.”
Exodus 31 : 17

101



¹⁸ And when He had made an end of speaking with him on Mount Sinai, He gave Moses two tablets of the Testimony, tablets of stone, written with the finger of God.
Exodus 31 : 18

102

103

Questions and Answers

Question Set A: Chapters 29-31

There are many useful questions at <http://www.pbequizengine.com>

Exodus Chapter 29

- 1) What animals were to be used in the consecration? ([Exodus 29:1](#))
- 2) What other “food items” were to be used? ([Exodus 29:2](#))
- 3) Where did this ceremony take place? ([Exodus 29:4](#))
- 4) How was Aaron anointed in verse seven? ([Exodus 29:7](#))
- 5) What was done with the bull’s blood? ([Exodus 29:12](#))
- 6) What was done with the first ram’s blood? ([Exodus 29:16](#))
- 7) What was done with the second ram’s blood? ([Exodus 29:20](#))
- 8) What was done with the fat, inner parts, covering of the liver, and kidneys with their fat from the bull? ([Exodus 29:13](#))
- 9) What was burned outside the camp and what was it? ([Exodus 29:14](#))
- 10) What was done with the meat of the first ram and what was it? ([Exodus 29:17-18](#))
- 11) What was used as a wave offering? ([Exodus 29:22—24](#))
- 12) What was done with the wave offering after it was waved? ([Exodus 29:25](#))
- 13) What wave offering was taken as the priests’ share? ([Exodus 29:26](#))
- 14) What else did Aaron and his sons receive as their share? ([Exodus 29:27](#))
- 15) Aaron and his sons received their shares from what Israelite offering? ([Exodus 29:28](#))
- 16) How long were the sacred garments to be worn? ([Exodus 29:30](#))
- 17) Where were Aaron and his sons to eat the ram of ordination? ([Exodus 29:32](#))
- 18) Why would no one else eat this meal? ([Exodus 29:33](#))
- 19) If any meat or bread was left till morning, what was to be done to it? ([Exodus 29:34](#))
- 20) Why was the altar to have atonement made for it and be consecrated? ([Exodus 29:37](#))
- 21) What was to be sacrificed each day and for what reason? ([Exodus 29:36](#))
- 22) What was to be offered daily? ([Exodus 29:38](#))
- 23) What was offered with the lambs? ([Exodus 29:40](#))
- 24) What was the purpose of all these things? ([Exodus 29:46](#))

Exodus Chapter 30

- 1) What was the size of the altar of incense? ([Exodus 30:2](#))
- 2) Where was the altar to be put? ([Exodus 30:6](#))
- 3) When was Aaron to burn incense? ([Exodus 30:7-8](#))
- 4) What was not to be offered on this altar? ([Exodus 30:9](#))
- 5) How often was this altar to be atoned and how? ([Exodus 30:10](#))

- 6) When was a ransom to be paid and for what? ([Exodus 30:12](#))
- 7) How much was to be paid and by whom? ([Exodus 30:13](#))
- 8) What was this money used for? ([Exodus 30:16](#))
- 9) What was the bronze basin for? Who was to use it? ([Exodus 30:18-19](#))
- 10) What parts of the body were to be washed at this basin? ([Exodus 30:19](#))
- 11) When were they to wash, according to verse twenty? ([Exodus 30:20](#))
- 12) What ingredients were in the anointing oil? ([Exodus 30:23-24](#))
- 13) What was the anointing oil used to anoint? ([Exodus 30:26](#))
- 14) What would happen to anyone who broke these regulations? ([Exodus 30:33](#))
- 15) What were the ingredients in the incense? ([Exodus 30:34](#))
- 16) Where was this incense put and in what form? ([Exodus 30:36](#))

Exodus Chapter 31

- 1) Who was Bezalel, according to verse two? ([Exodus 31:2](#))
- 2) What abilities had God endowed Bezalel with? ([Exodus 31:3-5](#))
- 3) Who was to be Bezalel's helper? ([Exodus 31:6](#))
- 4) List the things these two men and their helpers would be responsible for making. ([Exodus 31:7-11](#))
- 5) Why was it important that the Israelites observe the Sabbath? ([Exodus 31:12-14](#))
- 6) What was to be done to anyone who desecrated the Sabbath? Worked on the Sabbath? ([Exodus 31:14-15](#))
- 7) How did God tie the Sabbath in with his work? ([Exodus 31:17](#))
- 8) What did God give Moses, according to verse eighteen of this book? ([Exodus 31:18](#))

Note: I pray that these questions have helped your study and understanding of Gods' word in the Bible. Please feel free to pass them on to other people if they have helped you.

Your Brother in Christ,

Frank Rose <http://my-ccm.com/old-testament-questions/questions-about-the-book-of-exodus/>

Question Set B: Exodus 30 (Questions Only)

By Erwin DeGraaff

1. 30: 1 The altar on incense was made from cypress wood. T or F?
2. 30: 1 The altar of incense was 1 cubit square and 3 cubits high. T or F?
3. 30: 3 The altar of incense was overlaid with what metal?
4. 30: 4 The poles to carry the altar of incense were made of what kind of wood?
.....
5. 30: 6 Where is the altar of incense to be placed? “Before the
that is before the of the ,
before the that is over
the
6. 30: 7 What else is Aaron doing besides burning sweet incense on the altar
every morning?
7. 30: 8 What other time of day does Aaron have to burn incense?
8. 30: 8 How long does the incense have to burn?
9. 30: 9 What four items should not be brought on the altar of incense?
.....
.....
.....
.....
10. 30:10 What is Aaron to make on the horns of the altar of incense once a year?
.....
11. 30:10 With what is Aaron to make atonement on the horns of the altar of
incense?
12. 30:10 The atonement “is most to the LORD.”
13. 30:12 What is every man to give at the time of the census?

- 14. 30:12 What would be the punishment if someone did not give a ransom?
.....
- 15. 30:13 How much is the ransom that everyone who was numbered was to give?
.....
- 16. 30:13 How much is a sanctuary shekel ?
- 17. 30:14 Who should give a half shekel for atonement of themselves? Be specific
.....
- 18. 30:16 How was the atonement money to be used?
- 19. 30:16 The atonement money would serve as a
- 20. 30:18 The laver and its base were made of
- 21. 30:18 What was to be the location of the laver?
- 22. 30:19 The laver was to be used by everyone after bringing a sacrifice. T or F?
- 23. 30:19 What was to be washed with the water from the laver?
- 24. 30:20 When are the priests supposed to wash their hands and feet?
.....
- 25. 30:20 What does the Bible mean when it says that the priests come near the altar to minister?
- 26. 30:21 What was God's punishment for not washing hands and feet?

- 27. 30: 23-25 What are the ingredients and the quantities for the holy anointing oil? Be very specific
.....
.....
.....
.....
.....

28. 30:26-29 What items and persons had to be anointed with the holy anointing oil?

.....
.....
.....
.....
.....
.....
.....
.....

29. 30:29 Only what could touch the items that were anointed with the holy oil?

.....

30. 30:30 How were Aaron and his sons to minister to the Lord?

.....

31. 30:33 What happens to the person that misuses the holy anointing oil?

.....

32. 30:34 What are the ingredients to make the holy incense?

.....
.....
.....
.....

33. 30:34 What does the Bible say about the quantities of the ingredients for incense?

34. 30:35 According to whose art was the incense to be made?

35. 30:36 What was the perfumer to do with the ingredients to make incense?

.....

36. 30:36 Where was some of the incense to be put?

37. 30:38 What is to happen to the person who makes this incense for his own use?

.....

Question Set B: Exodus 30 (Questions and Answers)

By Erwin DeGraaff

1. 30: 1 The altar on incense was made from cypress wood. T or F?(F, acacia)
2. 30: 1 The altar of incense was 1 cubit square and 3 cubits high. T or F?
(2 cubits high and 1 cubit long and wide)
3. 30: 3 The altar of incense was overlaid with what metal? (gold)
4. 30: 4 The poles to carry the altar of incense were made of what kind of wood?
..... (Acacia)
5. 30: 6 Where is the altar of incense to be placed? “Before the (veil)
that is before the (ark) of the (Testimony),
before the (mercy) (seat) that is over
the (Testimony).”
6. 30: 7 What else is Aaron doing besides burning sweet incense on the altar
every morning? (He tends the lamps)
7. 30: 8 What other time of day does Aaron have to burn incense?
(twilight)
8. 30: 8 How long does the incense have to burn?(a perpetual
incense)
9. 30: 9 What four items should not be brought on the altar of incense?
..... strange incense
..... burnt offering
..... grain offering
..... drink offering
10. 30:10 What is Aaron to make on the horns of the altar of incense once a year?
..... (atonement)
11. 30:10 With what is Aaron to make atonement on the horns of the altar of
incense? (with the blood of the sin
offering)

12. 30:10 The atonement “is most (holy) to the LORD.”
13. 30:12 What is every man to give at the time of the census?
(a ransom)
14. 30:12 What would be the punishment if someone did not give a ransom?
..... (plague among them)
15. 30:13 How much is the ransom that everyone who was numbered was to give?
..... (Half a shekel according to the sanctuary shekel)
16. 30:13 How much is a sanctuary shekel ? (twenty gerahs)
17. 30:14 Who should give a half shekel for atonement of themselves? Be specific
.....
(Everyone who was numbered 20 year old and above)
18. 30:16 How was the atonement money to be used?
(For the service of the tabernacle of meeting)
19. 30:16 The atonement money would serve as a(memorial)
20. 30:18 The laver and its base were made of (bronze)
21. 30:18 What was to be the location of the lever?
(Between the tabernacle of meeting and the altar)
22. 30:19 The lever was to be used by everyone after bringing a sacrifice. T or F?
(F, only Aaron and his sons).
23. 30:19 What was to be washed with the water from the lever?
..... (Hands and feet)
24. 30:20 When are the priests supposed to wash their hands and feet?
.....
(Before entering the tabernacle or when they came near the altar to minister)
25. 30:20 What does the Bible mean when it says that the priests come near the altar to minister?
(To burn an offering made by fire to the Lord)

26. 30:21 What was God's punishment for not washing hands and feet?
(death)
27. 30: 23-25 What are the ingredients and the quantities for the holy anointing oil? Be very specific
- 500 shekels of liquid myrrh
 - 250 shekels of sweet-smelling cinnamon
 - 50 shekels of sweet-smelling cane
 - 500 shekels of cassia
 - a hin of olive oil
28. 30:26-29 What items and persons had to be anointed with the holy anointing oil?
- The tabernacle of meeting
 - The ark of the Testimony
 - table and its utensils
 - lampstand and its utensils
 - altar of incense
 - altar of burnt offering and its utensils
 - laver and its base
 - Aaron and his sons
29. 30:29 Only what could touch the items that were anointed with the holy oil?
..... (Only what is holy)
30. 30:30 How were Aaron and his sons to minister to the Lord?
..... (As priests)
31. 30:33 What happens to the person that misuses the holy anointing oil?
..... (Cut off from his people)
32. 30:34 What are the ingredients to make the holy incense?
- stacte
 - onycha
 - galbanum
 - pure frankincense
33. 30:34 What does the Bible say about the quantities of the ingredients for incense? (equal amounts)

34. 30:35 According to whose art was the incense to be made?
(The perfumer)
35. 30:36 What was the perfumer to do with the ingredients to make incense?
.....
(Shall beat some of it very fine)
36. 30:36 Where was some of the incense to be put?
(Before the Testimony in the tabernacle of meeting)
37. 30:38 What is to happen to the person who makes this incense for his own use?
..... (Cut off from his people)

Question Set B: Exodus 31 (Questions Only)

By Erwin DeGraaff

1. 31: 1 Who did God call by name to design artistic works for the tabernacle?
Be very specific.
.....
2. 31: 1 Who was the father of Bezalel?
3. 31: 1 Who was the grandfather of Bezalel?
4. 31: 1 What tribe did the family of Bezalel belong to?
5. 31: 4 Which metals was Bezalel skilled in to work with?
6. 31: 5 What other materials that are not metals could Bezalel work with?
.....
7. 31: 5 Which words does the Bible use to describe all the skills and all the things
that Bezalel could make?
8. 31: 6 Who did God appoint with Bezalel to make items for the tabernacle?
Be very specific.
9. 31: 6 Who was the son of Ahisamach?
- 10.31: 6 Which tribe did Aholiab and Ahisamach belong to?
- 11.31: 7-11 Name 5 of the items that Bezalel, Aholiab, and the artisans were to make.
.....
.....
.....
.....
.....

- 12.31:11 How did God say all the items for the tabernacle were to be made?
.....
- 13.31:13 How did God describe His Sabbaths?
- 14.31:13 What did God want the Israelites to keep?
- 15.31:13 Why did God want the Israelites to keep the Sabbaths?
- 16.31:14 Verse 14 gives another reason for keeping the Sabbath. What is that reason?
- 17.31:14 What is the penalty for profaning the Sabbath?
- 18.31:14 What is one way to profane the Sabbath?
- 19.31:15 For how many days should we work?
- 20.31:16 Which words did God use to tell the children of Israel that they should observe the Sabbath forever?
- 21.31:17 What reason does verse 17 give for observing the Sabbath?.....
- 22.31:17 “For in days the
made the and the
and on the day He
and was
- 23.31:18 Where was Moses when he received all these instructions?
- 24.31:18 On what material were the two tablets of the Testimony made?
.....
- 25.31:18 How were the words on the two tablets of the Testimony written?
.....

Question Set B: Exodus 31 (Questions and Answers)

By Erwin DeGraaff

1. 31: 1 Who did God call by name to design artistic works for the tabernacle?
Be very specific.
.....
(Bezalel the son of Uri, the son of Hur, of the tribe of Judah)
2. 31: 1 Who was the father of Bezalel? (Uri)
3. 31: 1 Who was the grandfather of Bezalel? (Hur)
4. 31: 1 What tribe did the family of Bezalel belong to? (Judah)
5. 31: 4 Which metals was Bezalel skilled in to work with?
..... (gold, silver, bronze)
6. 31: 5 What other materials that are not metals could Bezalel work with?
.....
(Cutting jewels for setting, carving wood)
7. 31: 5 Which words does the Bible use to describe all the skills and all the things
that Bezalel could make?
(In all kinds of workmanship)
8. 31: 6 Who did God appoint with Bezalel to make items for the tabernacle?
Be very specific.
(Aholiab the son of Ahisamach, of the tribe of Dan)
9. 31: 6 Who was the son of Ahisamach?(Aholiab)
- 10.31: 6 Which tribe did Aholiab and Ahisamach belong to? (Dan)
- 11.31: 7-11 Name 5 of the items that Bezalel, Aholiab, and the artisans were to make.
.....
(tabernacle of meeting, ark of the Testimony, mercy seat
table and utensils, gold lampstand altar of incense
altar of burnt offering and the utensils laver and its base
garments of ministry garments for Aaron garments for priests
anointing oil sweet incense)

- 12.31:11 How did God say all the items for the tabernacle were to be made?
.....
(According to all that I have commanded you)
- 13.31:13 How did God describe His Sabbaths?
.....
(A sign between Me and you throughout your generations)
- 14.31:13 What did God want the Israelites to keep? (Sabbaths)
- 15.31:13 Why did God want the Israelites to keep the Sabbaths?
.....
(So they know it is the LORD who sanctifies them)
- 16.31:14 Verse 14 gives another reason for keeping the Sabbath. What is that
reason?
(For it is holy to you.)
- 17.31:14 What is the penalty for profaning the Sabbath?
(Put to death)
- 18.31:14 What is one way to profane the Sabbath?
(Doing work on the Sabbath)
- 19.31:15 For how many days should we work? (Six)
- 20.31:16 Which words did God use to tell the children of Israel that they should
observe the Sabbath forever?
(As a perpetual covenant)
- 21.31:17 What reason does verse 17 give for observing the Sabbath?.....
.....
(For in six days the LORD made the heavens and the earth and on the
seventh day He rested)
- 22.31:17 “For in (six) days the (LORD)
made the (heavens) and the
(earth) and on the (seventh) day He
(rested) and was (refreshed) .

- 23.31:18 Where was Moses when he received all these instructions?
..... (On Mount Sinai)
- 24.31:18 On what material were the two tablets of the Testimony made?
..... (stone)
- 25.31:18 How were the words on the two tablets of the Testimony written?
.....
(With the finger of God)

Additional Information

Explanation of Image Elements



This background is used when God is speaking to Moses from Mount Sinai.

Determining the Capacities of the Hin, Omer, and Ephah

William P. Houser and Rochelle A. Houser

September 6, 2015



Showing 3.4 C in a quart jar for the omer, 10 of those in large bowl for an ephah, and 1 pint for the hin of oil. Also showing the proportions of the recipe for the bread and the drink offering in Exodus 29:40, and the resulting bread one batch made. Showing another 1-quart oil with oil poured over, to show all the ways a grain offering could be brought except a roasted sheaf, according to Leviticus 2:1-7

Abstract:

We are illustrating the book of Exodus, for ease in understanding and memorizing it. There was too much variation in the published literature for the modern equivalents of the Biblical measures of hin, omer, and ephah to portray confidently their volumes. Also, the ratios between the hin and the omer

were such that a viable bread could not be made from the recipe in Exodus 29:40 that could be baked in two different thicknesses, and prepared two ways in a pan with oil, as described in Leviticus 2, and Exodus 29:2. We are proposing that these preparation methods were shallow-oil pan frying, and deep-fat-frying.

Therefore, we set out to determine the values for the hin, omer, and ephah that would comply with the various constraints set in the Bible. We determined by experimental evidence the maximum amount of olive oil that could be absorbed by modern wheat, with a minimum of water to make a viable bread prepared as described. **It was 5 parts oil to 16 parts flour, to 4 parts water.** We then evaluated the remaining constraints we could find in the Bible for these units, and used the experimentally determined ratio to set upper and lower bounds on the other units. Our calculations and analysis show:

The range for the omer is 3.2C – 2.8 C, using the highest low value and the lowest high value. The average is 3.4 C for the average mid range.

Using the Biblical equivalent of 10 omer = 1 ephah, then

The range for the ephah is 2.0 US gallons - 1.75 US Gallons, with an average of the mid range of 2.1 US gallons. (or a modern peck. Tanja Pommerening calculates the New Kingdom and Middle Kingdom hekat to be 1.26 gallons, in source 31. Another source lists a modern peck of 2.0 gallons as one of the Egyptian units, in source 11.)

The range for the hin is 4.0 C or less – 3.5 C or less, using the lowest low value and the lowest high value. The average is 4.0 C or less for the average mid range.

Since they have the same ranges and basically the same average, there is a possibility that they are the same value, of **approximately 3.5 C**. However, bread can be made without any oil at all, the values in our chart are maximums at each level. So, we could show the Egyptian value of a hin at 2.0 C, which corresponds to our modern US pint, and the omer at somewhere between 3-4 C, which corresponds to our modern quart, and the ephah as a large bowl with a capacity of close to 2 gallons. This will satisfy all the Biblical constraints, and would provide a reasonable amount of Kcal as a daily ration for the omer, and also would produce loaves of bread that would fit on the showbread table.

Introduction:

In the process of illustrating the book of Exodus, we were faced with the question of how to show the amounts of an omer, ephah, and hin. (Exodus 16, Exodus 29:40). For the grain offerings we also wanted to show the different forms that could be brought and the approximate amounts specified. A literature search of Christian Bible-study aides, Jewish sources of the Talmud, and secular unit conversion sites showed such a wide variety of values for the hin and omer and ephah (from 12 C to 40 C for the hin, and from 3/5 bushel to over a bushel for the ephah), as to render them useless in trying to show the sizes, or to try to make the bread. Even if they would make bread, we thought the sheer size of most reported omers would be too much for a person to eat in one day. After also reading that the Hebrews didn't maintain a standardized measuring system throughout history (<https://www.biblegateway.com/resources/encyclopedia-of-the-bible/Weights-Measures>), and even used the same name for different amounts of a quantity, (http://www.jewishvirtuallibrary.org/jsource/judaica/ejud_0002_0020_0_20697.html), we decided to see what the ancient Egyptian measuring system was, to see if that would give more clarity to the amounts shown in Exodus, since it is likely that Moses would have been thinking in Egyptian units.

At one time, the Egyptian hin seems to be pretty standardized at 2.02 C or 0.477 L, but the hekat and

corresponding Oipe (which could correspond to the Ephah) had some changes from the Old Kingdom to the New Kingdom, and there was too much ambiguity in the descriptions on how they changed to be definitive. The hekat used to be 10 per Khar, but later 16. (Did the khar increase, or the hekat decrease?) The corresponding Oipe, and therefore omer, would be either 8 C or 5 C, and the hin would be either 2 C, or 1.26 C), depending on which way the system changed. There was also another decree changing the i'pt (oipe) to 50 hin. It was not reported when this change occurred, to see if it would be before or after Moses was likely to be in Egypt. Even if we used a somewhat standard value of 8 C for the omer and 2 C for the hin, when we made up a batch of bread as described in Exodus 29:40, it seemed like an excessive amount of food for an adult to reasonably eat in one day.

Therefore, we set out to determine what ranges these measures would have to be, in order to comply with the known constraints that are listed in the Bible. We have primarily used the Bible sources, and what Josephus says about the size of the showbread, and what we can find about grain and human physiology on the internet.

We have done an experiment with modern wheat and olive oil to establish the maximum ratio of oil that can be absorbed into flour, with a minimum of water needed to make a viable bread which can be baked as thick cakes, baked as thin wafers, and prepared two different ways in a pan/griddle with oil, as described in Leviticus 2 and Exodus 29:2, for ways to bring a grain offering in general, and for Aaron's and his sons' consecration service. **The ratio was determined to be 5 parts oil to 16 parts flour to 4 parts water.** This then, was applied to data that was known or calculated about either the hin or the omer from a particular Biblical constraint, and the minimum and maximum values were recorded for each situation.

Based on the data collected and calculated, the hin and the omer had similar minimum to maximum ranges, and could possibly be the same size.

The range for the omer is 3.2C – 2.8 C, using the highest low value and the lowest high value. The average is 3.4 C for the average mid range.

The range for the hin is 4.0 C or less – 3.5 C or less, using the highest low value and the lowest high value. The average is 4.0 C or less for the average mid range.

This table summarizes the details in the rest of this article.

Constraint	Omer Low	Omer Mid	Omer High	Hin Low	Hin Mid	Hin High
Ratio of oil:flour to make bread	4 omer: 1 hin 1 omer \geq 4/5 hin	4 omer: 1 hin		No min. can be calculated from this ratio	No mid can be calculated from this ratio	1 hin \leq 5/4 omer
Omer's caloric value as daily ration	2 C	3.58 C	7 C	2.5 C or less From ratio of flour to oil	4.5 C or less From ratio of flour to oil	8.8 C or less From ratio of flour to oil
Hin's minimum daily water ration	2.52 C Calculated from ratio and the Hin Mid value.		11.2 C or more Calculated from ratio and the Hin		3.15 C	14 C

Constraint	Omer Low	Omer Mid	Omer High	Hin Low	Hin Mid	Hin High
			Max value			
Bath's size based on Solomon's Laver	No minimum can be calculated	0.3331 US gallons= 5.3 US C. (if hemisphere)	0.495 US gallons = 7.92 US C (if cylinder)		6.6 C or less Calculated from ratio of oil to flour and the omer mid value	9.9 C or less Calculated from ratio of oil to flour and the omer high value
Showbread table size	No minimum can be calculated	3.2 C	13.5 C ridiculously tall 9" assumption		4.0 C or less Calculated from the ratio of oil to flour and the omer mid value	16.9 C or less Calculated from the ratio of oil to flour and the omer high value
Mishna's Showbread size, and our estimate of an etzba using modern barley grain sizing.	2.16 C (barley)		2.82 C (barley)	2.7 C or less Calculated from ratio of oil to flour from the omer low value		3.5 C or less (barley) (Calculated from ratio of oil to flour from omer high value)
Mishna's Showbread size, and our estimate of etzba using finger-width, and yeast bread conversion factor:	2.22 C	2.87 C	3.65 C	2.8 C or less (Calculated from ratio of oil to flour from omer low value)	3.6C or less (Calculated from ratio of oil to flour from omer mid value)	4.6C or less (finger-width) (Calculated from ratio of oil to flour from the omer high value)
Mishna's Showbread size, and our estimate of etzba using finger-width, and unleavened bread conversion factor.	3.2 C	3.8 C	4.6 C	4.0 C or less (Calculated from ratio of oil to flour from omer low value)	4.8 C or less (Calculated from ratio of oil to flour from omer mid value)	5.8 C or less (Calculated from ratio of oil to flour from omer high value)

Constraint	Omer Low	Omer Mid	Omer High	Hin Low	Hin Mid	Hin High
Sheaf size: (Lev. 23:10-15; Ruth 2)	No minimum can be established	1.4 C	15 C		1.75 C or less Calculated from the ratio of oil to flour from the omer mid value	18.8 C or less Calculated from the ratio of oil to flour from the omer high value
Conclusion:	3.2 C (highest of low range) 2.4 C avg.	3.4 C (Avg)	2.8 C (lowest) 8.2 C avg	4.0 C or less (highest of low range) (3.0 C or less avg)	4.0 C or less (avg of mid)	3.5 C or less (lowest of high range) 10.3C or less (avg)

Biblical Conversion Factors:

The Bible provides the following conversion factors:

10 omer = 1 ephah = 1 sheaf (See Ex 16: 36, Leviticus 23:10-12)

1 etzba = 1 finger-width (Jeremiah 52:21)

1 bath = 1 ephah = 10 omers (Ezekiel 45:11, Exodus 16:36)

Observations and Conclusion:

1. The ranges for omer and hin are basically the same; so, it is possible that they are the same size. This would eliminate a need to carry two different measuring systems with them. This is similar to our modern Liter, which is the same size for both liquid and dry.
2. Solomon's Laver was probably shaped more like a cone or a trumpet flower than a hemisphere or cylinder.
3. The caloric intake establishes the range for the omer which assumes that the calories in our estimated recipe is similar to manna.
4. The Standard published values for the hin, omer, and ephah generally are too large to fit with the constraints of the caloric intake per day, and shewbread table size.
5. Since our table values establish the maximum the hin could be at the different levels of high, medium, and low, and the Egyptian hin is pretty well established at 2.02 C or 0.477 L, as is the neo-Babylonian mina, I am inclined to use this as the hin value, especially since our word for 2.0 C is pint.
6. Bread for the grain offerings will be based on the ratios of oil and flour for the morning and evening sacrifices, as listed in Exodus 29:40.
7. Having an omer be 3-4 C would fit very nicely in one of our quart jars. When I am canning items using a quart jar, I usually only fill it to be between 3.0 and 3.8 C, so that there is headroom at the top of the jar. To get 4.0 C into a quart canning jar, one must fill it to the absolute top rim, which is unusual in normal usage. Therefore, I am inclined to show the omer in a quart jar, especially since the neo-Babylonian value for 1.006 L is a qa. This makes the resulting ephah to be 1.26 gallons, which is a value matching an Egyptian hekat, according Tanja Pommerening in 2002 reported in source 31.

Further work needed:

- To refine our estimate of the etzba, we need to grow barley and sort and measure it directly, because we are using published screen sizing that may screen out the largest grains.
- We need to grow barley to test the sheaf size and yield.
- We need to try to eat simulated manna for a week, to determine how much each adult eats per day.
- We noticed so many similarities in names and amounts of the different Mid-Eastern measuring systems to the Old English/US system, that it begs for further study to standardize the systems, and see the word origins.

The Constraints:**1. Oil to Flour Ratio to Make Bread:**

Our experimental values for making the bread showed that for modern wheat flour, the maximum amount of oil to flour ratio to make bread at a ratio of 1 omer to $\frac{1}{4}$ hin, was 5 part olive oil to 16 parts flour to 4 parts water.

Therefore, the minimum omer has to be: **1 omer \geq $\frac{4}{5}$ hin. Conversely, 1 hin \leq $\frac{5}{4}$ omer.**

Discussion:

There are several recipes for bread for the grain offerings which use ratios of the ephah and hin. These recipes must be able to make a viable dough that can be baked, and prepared two different ways in a pan with oil, according to Leviticus 2, and Exodus 29:2, as the three different types of bread to be brought for Aaron's and his sons' consecration service. We are proposing these two different ways were deep-fat frying, and shallow-oil pan frying.

Meat offerings

Flour	Oil	Ratio of oil/flour or hin/ephah	Drink	Flesh	Event or Reason	Reference
0.1 deal	0.25 hin	2.5/1	0.25 hin	Daily Lamb	Daily burnt offering	Ex 29:40
0.2 deal	Not specified		0.25 hin	1 year old male lamb	Burnt offering to go with the wave sheaf.	Lev 23:13
0.1 deal	0.25 hin	2.5/1	0.25 hin	1 lamb (kid Num 15:11)	Burnt offering, or sacrifice to pay a vow, or freewill offering, or for	Num 15:4

					the solemn feasts (Numbers 15:3)	
0.2 deal	0.33 hin	1.1/1	0.33 hin	Ram	Same as for Numbers 15:4	Num 15:6
0.3 deal	0.5 hin	1.666\1	0.5 hin	Bullock	Same as for Numbers 15:4, and also as a congregational sin of ignorance offering.	Num 15:9
0.1 ephah	0.25 hin	2.5\1	0.25 hin	Daily lamb	Daily burnt offering. Should be brought as bread. Numbers 28:2	Num 28:5
0.3 deal	Not specified		0.5 hin	Bullock	New Moon offerings. Should be brought as bread. Numbers 28:2	Num 28:12-14
0.2 deals	Not specified		0.33 hin	Ram	New Moon offerings. Should be brought as bread. Numbers 28:2	Num 28:12-14
Several/10 deal	Not specified		0.25 in	Lamb	Should be brought as bread. Numbers 28:2	Num 28:12-14
1 ephah	1 hin	1/1	Not specified	Bullock	Passover grain offering.	Ezekiel 45:24
1 ephah	1 hin	1/1	Not specified	Ram	Passover grain offering.	Ezekiel 45:24
1 ephah	1 hin	1/1	Not specified	Ram	Sabbath and New Moon offerings.	Ezekiel 46:5
1 ephah	1 hin	1/1	Not specified	Bullock	Sabbath and New Moon offerings.	Ezekiel 46:7
1 ephah	1 hin	1/1	Not	Ram	New Moon	Ezekiel 46:7

			specified		offering.	
1 ephah	1 hin	1/1	Not specified	Bullock	Feasts and appointed festivals.	Ezekiel 46:11
1 ephah	1 hin	1/1	Not specified	Ram	Feasts and appointed festivals.	Ezekiel 46:11
0.166 ephah	0.33 hin	2/1	Not specified	Daily lamb	Morning offering.	Ezekiel 46:14

Conclusions from above table of bread ratios:

1. A “deal” = an “ephah”.

Where the word “deal” is, it should be understood as ephah, based on Numbers 28:5 and Exodus 29:40. These two texts describe the grain offering for the morning and evening sacrifices, and use the same ratios of flour to oil. In Exodus 29:40, the unit is left out, and the translators supplied the word “deal”. However, in Numbers 28:5, the word ephah (Strong's 374) is used. The same event would need to be the same amounts. Ezekiel 46:14 also describes the morning offering, but uses a different ratio of 2:1, instead of 2.5:1, but it also uses the Strong's 374, ephah, in the verse. Since these are similar amounts, we are going to make the conclusion that the unit implied for the flour, when giving bread recipes is the ephah.

2. The largest ratio of oil to flour is in the morning/evening sacrifices listed in Exodus 29:40, at 2.5:1. Therefore, the hin and the ephah need to be related to each other so as to make viable bread in this ratio of oil and flour.

The experiment:

How Much Oil Can Be Absorbed by Wheat Flour And Still Make Bread That Can Be Baked, Pan-fried, and Deep-fat-fried? (Leviticus 2, Exodus 29:2)

Purpose: To determine the ratio of the Biblical hin to the Biblical omer, as given in Exodus 29:40

Starting Materials:

1 small mixing bowl
 1 1-tsp syringe
 1/3 C freshly milled wheat flour, unsifted
 ¼ teaspoon salt
 150 mL olive oil to be titrated with the flour
 150 mL water to be titrated with the saturated oil/flour mixture

Method:

1/3 C freshly milled wheat flour was put into a bowl, and ¼ teaspoon of salt was added and mixed. Next, 1-mL aliquots of olive oil were added, and stirred into the flour. Observations were made, and the experiment was ended when the flour was completely saturated, and formed a thixotropic paste which had oil leaking out the sides of the paste. The paste was then subjected to baking, pan-frying, and deep-fat frying.

Results: It took 7 teaspoons of olive oil to completely saturate the 1/3 C flour and form a thixotropic paste. This mixture did not hold together as bread when pan-frying and deep-fat frying, and when baking as shallow wafers. There was marginal success in the baked thick cake, but it was very crumbly, and would not hold together enough to be able to be held and passed from one person to another, as would need to be in Exodus 29:2 for Aaron's and his sons' dedication.

The experiment was repeated and 7 teaspoons saturated the 1/3 C flour. This time, 1-mL aliquots of water were added and stirred into the paste. Observations were made, and the experiment was ended when I thought there was enough gluten development to make a viable dough that could be baked, pan fried, and deep-fat-fried.

Results: It took 4 teaspoons of water and approximately 30 minutes of kneading to get a dough that had thin strings of gluten, which I determined would be suitable for trying to cook in the various methods. During this process, I was surprised that the flour absorbed the water at the expense of 2 teaspoons of oil. The resulting maximum oil to flour ratio was then adjusted down to 5 teaspoons of oil per 1/3 C of flour to account for this loss of oil.

Another batch was scaled up using 4 C flour, 1.25 C olive oil, and 1 C water. The oil/water/salt was added first and mixed into a thick emulsion, and then the flour added to that. It became a viable dough after only about 5 minutes of kneading, and there was no observable excess of oil squeezed out of the resulting dough. It was very oily, and appeared to be at the maximum level of oil the flour/water would hold. It made viable dough for the three cooking methods, and 4 forms of bread.

Conclusion:

The final ratio to make a viable bread is 5 parts oil to 16 parts flour to 4 parts water.

Since the recipe in Exodus 29:40 relates the two as 1 omer (1/10 ephah = 1 omer) to 1/4 hin, the extrapolation of the maximum of the hin to the omer would be:

1 hin \leq (5 parts oil x 4 /16 parts flour omer) or **1 hin \leq 5/4 omer.** Conversely, **1 omer \geq 4/5 hin.**

2. Omer's caloric value as daily ration

Exodus 16:16-21

16 This is the thing which the LORD has commanded: 'Let every man gather it according to each one's need, **one omer for each person**, according to the number of persons; let every man take for *those who are* in his tent.'

17 Then the children of Israel did so and gathered, some more, some less. 18 So when they measured *it* by omers, he who gathered much had nothing left over, and he who gathered little had no lack. Every man had gathered according to each one's need. 19 And Moses said, "Let no one leave any of it till morning." 20 Notwithstanding they did not heed Moses. But some of them left part of it until morning, and it bred worms and stank. And Moses was angry with them. 21 So they gathered it every morning, every man according to his need. And when the sun became hot, it melted. 22 And so it was, on the sixth day, *that* they gathered twice as much bread, two omers for each one. And all the rulers of the congregation came and told Moses. 23 Then he said to them, "This *is what* the LORD has said: 'Tomorrow *is* a Sabbath rest, a holy Sabbath to the LORD. Bake what you will bake *today*, and boil what you will boil; and lay up for yourselves all that remains, to be kept until morning.'" 24 So they laid it up till morning, as Moses commanded; and it did not stink, nor were there any worms in it.

31 And the house of Israel called its name Manna. And it *was* like white coriander seed, and the taste of it *was* like wafers *made* with honey.

Numbers 11:7-8

7 Now the manna *was* like coriander seed, and its color like the color of bdellium. 8 The people went about and gathered *it*, ground *it* on millstones or beat *it* in the mortar, cooked *it* in pans, and made cakes of it; and its taste was like the taste of pastry prepared with oil.

Key points:

- One omer per person each day. Each man's need would have depended on the number of people in his family
- Manna was like a grain.
 - It was ground into flour (Num 11:8)
 - It was baked and boiled (Ex 16:23)
 - It was like coriander seed (Ex 16:31)
- The nutrition in Manna was complete and tasted like
 - wafers made with honey. (Ex. 16:31)
 - pastry made with oil. (Num 11:8)

The FE Reference Handbook indicates these body weight ranges for USA Civilian Body Dimensions ages 20 to 60. The caloric requirements are from ChartsGraphsDiagrams.com

	Female		Male		Average
	kg	Kcal	kg	Kcal	Kcal
5 percentile	46.2	1450 low activity 1805 mid activity 2190 high activity	56.2	1720 low activity 2150 mid activity 2580 high activity	1585 low activity
50 percentile	61.1	1610 low activity 2000 mid activity 2410 high activity	74.0	2050 low activity 2500 mid activity 3050 high activity	2250 mid activity
95 percentile	89.9	1900 low activity 2450 mid activity 2950 high activity	97.1	2410 low activity 3000 mid activity 3620 high activity	3285 high activity

Calories in wafers

Wafer	Kcal	Kcal/cup
Graham Cracker (1 cup crushed, 85g)	355	355
Saltines (1 cup crushed, 70g)	295	295

Simulated Manna:

We based our test omer as 8 C, a commonly-reported value. We then added $\frac{1}{2}$ C oil, which is based on $\frac{1}{4}$ of the Egyptian hin of 2 C. We then added honey in the ratio of oil/honey as a modern recipe for the Mideastern halvah from <http://www.thefoodmaven.com/diary/00000146.html>. As you can see, this size for the omer yields more Kcal than is what is recommended as a daily allowance. This is one reason the omer needs to be re-evaluated. We then scaled the Kcal of the whole recipe to per C, and using the daily recommended Kcal for different weights and activity levels of men and women, determined the range of the omer.

Grains	Kcal	Kcal/cup
Wheat Flour, 8 cups Olive Oil, 0.5 cups Honey, 0.375 cups Estimating total of 9 cups (using modern USA wheat)	407*8 = 3256 1910/2 = 955 1031*3/8 = 387 Total 4898 Kcal /9 cups	511 (not counting oil absorbed while cooking)
Wheat Flour (kamut), 8 cups Olive Oil, 0.5 cups Honey, 0.375 cups Estimating total of 9 cups (Ancient Egyptian wheat)	627*8 = 5016 1910/2 = 955 1031*3/8 = 387 Total 6358 Kcal /9 cups	706
Barley Flour, 8 cups Olive Oil, 0.5 cups Honey, 0.375 cups Estimating total of 9 cups	511*8 = 4088 1910/2 = 955 1031*3/8 = 387 Total 5430 Kcal /9 cups	603
Spelt Flour, 8 cups Olive Oil, 0.5 cups Honey, 0.375 cups Estimating total of 9 cups	588*8 = 4704 1910/2 = 955 1031*3/8 = 387 Total 6046 Kcal /9 cups	672
Brown Rice Flour, 8 cups Olive Oil, 0.5 cups Honey, 0.375 cups Estimating total of 9 cups	574*8 = 4592 1910/2 = 955 1031*3/8 = 387 Total 5934 Kcal /9 cups	659
Quinoa Flour, 8 cups Olive Oil, 0.5 cups Honey, 0.375 cups Estimating total of 9 cups	626*8 = 5008 1910/2 = 955 1031*3/8 = 387 Total 6350 Kcal /9 cups	706
Amaranth Flour, 8 cups Olive Oil, 0.5 cups Honey, 0.375 cups Estimating total of 9 cups	716*8 = 5728 1910/2 = 955 1031*3/8 = 387 Total 7070 Kcal /9 cups	786
Maize Flour, 8 cups Olive Oil, 0.5 cups Honey, 0.375 cups Estimating total of 9 cups	442*8 = 3536 1910/2 = 955 1031*3/8 = 387 Total 4878 Kcal /9 cups	542
Chia Seed, 8 cups	137*8*8 = 8768	1123

Olive Oil, 0.5 cups Honey, 0.375 cups Estimating total of 9 cups	1910/2 = 955 1031*3/8 = 387 Total 10110 Kcal /9 cups	
Rye Flour, 8 cups Olive Oil, 0.5 cups Honey, 0.375 cups Estimating total of 9 cups	361*8 = 2888 1910/2 = 955 1031*3/8 = 387 Total 4230 Kcal /9 cups	470

Average (excluding Chia) is 628. low = 470 and high is 786.

Range of US cups/omer	Low: 470 kcal/cup	Mid: 628 kcal/cup	High: 786 kcal/cup
Low: 1585 kcal/day	3.37 C	2.52 C	2.02 C
Mid: 2250 kcal/day	4.79 C	3.58 C	2.86 C
High: 3285 kcal/day	6.99 C	5.23 C	4.18 C

The range for an omer based on calories per day is 2 to 7 cups with a mid of 3.58 cups .

The range for an ephah based on calories per day is 20 cups (1.25 gal) to 70 cups (4.28 gal) with a mid of 35.8 cups (2.24 gal).

3. *Hin's minimum daily water ration*

Ezekiel was told in Ezekiel 4:11 to be an example to the Children of Israel, and show that dire circumstances were coming. He was told to measure out 1/6 of a hin, and drink it at set times during the day. There is some ambiguity as to whether that is the total amount of water he was to drink for the day, or if that was just the portion or aliquot of the maximum he could drink at a time, with unlimited times to drink during the day. Since water consumption need is based on many factors, such as temperature, humidity, activity, caloric intake, and water in food, it seems reasonable to us that God would not prescribe a set total amount for Ezekiel to drink each day, but rather a set amount to drink at one particular time during the day. Also, after doing an exhaustive search on the internet for an authoritative study on how much water is absolutely needed per day, we were surprised to find there is not such a document to be found. Many places presumed the standard 6-8 glasses of water per day, but provided no evidence to support the numbers. Some went as low as 1 pint, up to nearly 1 gallon per day as minimum water consumption. Most of them clearly stated this was not to be tested out, as it was not tested in humans, but only speculation. Therefore, we are only using this to be a check against other methods of computing a hin.

Most published Christian Bible-study, Jewish, and secular unit conversion site values for the hin (12-40 C), would have Ezekiel measuring out a pint (2.0 US C or .477 L) minimum, to a quart and a half (6.7 US C or 1578 mL) to drink at a time. Based on Shelley's own water consumption patterns, we think this amount of water would not particularly show that there was a dire famine and drought coming, and think this makes the hin value too high.

There is a pretty well-established value for the Egyptian hin, however, based on tomb paintings, that puts the Egyptian hin at 2.02 US Cups, or 0.477 L. This would make Ezekiel measuring out 1/3 US C (79.5 mL) at a time, and drinking it several times per day to get in his daily need of water. This seems more likely to be showing a famine and dire circumstances coming.

Modern Water Emergency Rations:

We did a search to see if there was any standard in modern emergency rations for water. We found two sizes of rations, a 4.2 oz pouch, and a 22-fl oz can. The 4.2 oz pouch was much more common, and we only found one source for the 22-fl. Oz can.

1. **4.2 ounce pouches** are the industry standard emergency water ration. One seller,

<http://www.nitro-pak.com/emergency-water-pouch-case-of-64> , states: “When determining how many cases you wish to purchase, we suggest planning on using at least 4 and as many as 8 pouches per day, per person. (Just a quick side note— a daily 'lifeboat' ration is 2 pouches of water per day. Yep, that's only 8.4 oz! Just pray you're found fast). - See more at: <http://www.nitro-pak.com/emergency-water-pouch-case-of-64#sthash.4krZlQaE.dpuf>”

This suggests that 1/6 of a hin is equal to 4.2 ounces. = a little more than ½ C with each drink, with up to 8 drinks per day. This seems very reasonable. If this is true, then

1 hin = 25.2 ounces = 3.15 cups. (if Ezekiel could drink up to 8 times per day)

2. **The 22-fl. Oz can:** [Http://www.beprepared.com](http://www.beprepared.com) has canned water at 22 fl. Oz per pack, and 3 per day as a ration.

22 fl. Oz x 3 = 66 oz per day/8 oz = 8.25 C water per day per person.

This suggests that 1/6 hin could be equal to 22 fl oz. = 18.9 dry oz = 2.3 C or a little more than a pint with each drink, and only 3 drinks per day.

1 hin = 132 fl oz / 1.1636 fluid oz/dry oz / 8 dry oz / C = **14 C maximum** (if Ezekiel could drink only 3 times per day.)

Conclusion:

I think the first situation is the most likely situation. Ezekiel would be measuring out a smaller volume of water for each drink (½ C) , to show more of a dire situation, than in the second scenario, where he would be measuring out more than a pint. A pint seems to be a “normal” to even excessive amount of water to drink at a time. That opinion is based on Shelley's own pattern of water consumption.

4. Bath's size according to Solomon's Temple's Laver

I Kings 7:23-25 describe the brasen sea or laver that Solomon built for the temple. It is described as being circular, and 10 cubits across from rim to rim. It is also 30 cubits around, measured linear length, and 5 cubits high. It's rim, at least, is described as being like a lily, or the edge of a cup. It also held 2000 baths.

Calculating the maximum volume of a bath according to these dimensions:

If we assume it is mostly a cylinder, with just a flare out at the top rim, that will give us the maximum volume. Volume of a cylinder is $\pi r^2 h$. We can see that their circumference is close to being pi times the diameter, which was measured at 30 cubits. If it were an exact circle, it would be 31.4 cubits around. Therefore, we will be erring on the side of being more than less.

$$V = 3.14 \times 5 \times 5 \times 5 = 392.5 \text{ cubic cubits.}$$

$$(392.5 \text{ cubic cubits})(18 \text{ inches / cubit})(18 \text{ inches /cubit})(18 \text{ inches)/cubit} = 2,289,060 \text{ cubic inches.}$$

$$2289060 \text{ cubic inches} \setminus 231 \text{ cubic inches/ gallon} = 9,909 \text{ gallons.}$$

If 2,000 baths = 9,909 gallons, then within the error of the dimensions of the brass sea, we can conclude that 2000 baths = 10,000 gallons, or

1 bath = 4.95 gallons Max.

If the sea was a hemisphere: then the volume would be $\frac{1}{2}$ of $\frac{4}{3} \pi r^3 = \frac{4}{6} \times 3.14 \times 5 \times 5 \times 5 =$ or $\frac{2}{3}$ of 5 gallons, which is **3.31 gallons per bath. Mid range**

If it were a cone, then the volume would be $\frac{1}{3}$ Area of base x height. $= \frac{1}{3} \times \pi \times 5 \times 5 \times 5 =$ or then it would be **$\frac{1}{3}$ of 5 gallons or 1.6677 gallons per bath. There is no minimum value.**

How this related to an omer:

Ezekiel 45:11 states that the bath is equal to the ephah. Since the ephah = 10 omers, then the bath = 10 omers.. Conversely, the omer = 0.1 bath. The values for the omer stated in the chart at the beginning of the paper are based on this Biblical equivalency.

I have found no Biblical equivalent of the bath to the hin. There are some equivlency sites on the web that state that 6 hin = a bath, but no references are given for that statement. I have found no primary source for that equivalent statement, so we are not using that in our constraints, or Biblical equivalency charts.

5. Table of Shewbread Size :

There is no description of when God told Moses how to make the table of shewbread for anything like racks to be placed above the table to hold the bread. Therefore, the 12 loaves of bread, made with 2 omers each, must be able to be placed in an array of 6 x 2 on the top of the table.

The table is specified to be 1 cubit x 2 cubits on the top. There needed to be 2 rows of 6; so each would be 0.5 cubit x 0.33 cubit. **If 1 cubit = 18 inches, then the surface area of the base including the space between loaves would be 9" x 6" = 54 square inches maximum.**

Our first fruits bread was made with 16 cups and became a loaf 20" x 4" x 3.5" = 280 in³. This means there are 17.5 in³ per cup of flour.

The maximum height seems like it would be 1.5 * width = 9" tall. → 27 cups/ 2 omers → 13.5 cups / omer

Typical traditional US loaf size is 9" x 5" x 2.5" = 6.428 cups/2 omers = 3.2 cups / omer

6. Mishnah's Showbread Size ((With Finger width and Barley Seed Size):

One source says the loaves of the shewbread were : “The Mishnah describes the loaves as being 10 Etzba long, and 5 Etzba wide, with rims/*horns* that were 7 Etzba long;”
(<https://en.wikipedia.org/wiki/Showbread>) [

Another source states that 1 etzba = 7 barley corns laid side by side.
(https://en.wikipedia.org/wiki/Biblical_and_Talmudic_units_of_measurement)

A. Deriving the Etzba from barley seed:

The modern barley seeds can be sized according to this source:

“Six-row and two-row barley seed lots can be sized with 5 1/2 /64 to 6/64 x 3/4 inch slotted screens. Air settings need to be determined by the operator for individual air-screen cleaners. Six-row barley with 11,000 to 14,000 and two-row barley with 9,000-12,000 seeds/lb are considered good quality.” <http://wintercereals.us/Documents/Growing%20WW/Production%20Articles/General%20Seeding%20Issues/Small%20Grains%20Seed%20Size.pdf>

From this data, the etzba can be calculated as follows:

Assuming the barley corns were to be lined up side by side, meaning all the long ends were parallel, and the etzba was a measure of their combined widths, not their successive lengths: Then:

1 etzba = 7 barley kernel widths.

1 barley kernel width can fit through a 5 1/2 /64-inch screen = 0.0859 inches (low)

$0.0859 \times 7 = \mathbf{0.60 \text{ inches (15.3 mm) = etzba (low estimate)}}$

1 ertzba = 7 barley kernel widths

1 barley kernel width can fit through a 6/64-inch screen = 0.09375 inches (high)

$0.09375 \times 7 = \mathbf{0.656 \text{ inches (16.6 mm) = etzba (high estimate).}}$

Therefore: The loaf size reported is in this range:

Low: = $10 \times 5 \times 7 = 10 \times 0.6 = 6 \text{ inches long} \times$

$5 \times 0.60 = 3 \text{ inches wide} \times 7(0.60) = 4.2 \text{ inches high.}$

Recap; $6'' \times 3'' \times 4.2'' = 75.6 \text{ cubic inches.}$

This probably was not a perfect rectangular solid, since the description makes it sound like the tops were domed, and not flat.

High: = $10 \times 5 \times 7 = 10 \times 0.656 = 6.56'' \times 5(0.656) = 3.28'' \times 7(0.656) = 4.59'' \text{ high}$

Recap: $6.56'' \times 3.28'' \times 4.59'' = 98.76 \text{ cubic inches}$

These loaves would fit on the table. This would explain why there are no racks needed to display them,

and why no racks are described either in the Bible, or on the Titus arch when talking about or showing the Table of Shewbread.

B. Deriving the Etzba from Finger-width:

Since the word “etzba” seems to be translated “finger” most often, but is used as a measurement in Jeremiah 52:11, I looked for a standardized “man's hand”.

https://en.wikipedia.org/wiki/Hand_%28unit%29 says one finger-width is $\frac{3}{4}$ inch.

Therefore: an etzba = 0.75 inches.

This matches at least one source for the etzba, according to the *Rambam*, is 1.9–1.92 cm (0.748–0.756 in). (Source 23)

Converted Showbread measurements: $10(0.75) \times 5(0.75) \times 7(0.75) = 7.5 \text{ in} \times 3.75 \text{ in} \times 5.25 \text{ in}$. **This would fit on the table.**

August 21, 2015

Calculating density of yeast wheat bread, with 9.5 C flour per loaf.

Procedure: Yeast bread was made with 9.5 C flour, approx.

Parameter	Loaf 1	Loaf 2	Average
Weight of finished bread, g	1922 g	1861 g	1891 g
Dimensions, L W H, inches	7.25 x 7.25 x 4.375max. 7.25 x 7.25 x 4.125 avg	7.125 x 7.25 x 4.625 max. 7.125 x 7.25 x 4.375 avg	7.19 x 7.25 x 4.25
Cubic inches, by average dimension calculation.	217 Cubic inches	226 Cubic inches	222. Cubic inches
Cu. in. bread/C flour, by dimensions:	22.8 cu. in. /C	23.8 cu. in. /C	23.4 cu. in. / C
Water displaced,g 68 deg.	3808 g	3626 g	3717 g
Water displaced, mL 68 deg	3814.8 mL	3632.5 mL	3724 mL
Water displaced, cubic inch	232.8 Cubic in.	221.7 Cubic in.	227.3 Cubic inches
Cu. in. bread/C flour, by water displacement	24.5 Cu. in./C	23.3 cu. in. / C	23.9 cu. in. / C
Finished bread, g/mL by water displacement	0.504 g/mL	0.513 g/mL	0.508 g/mL
Average of method calculations:	23.7 cu. in. / C	23.6 cu. in. / C	23.7 cu. in. / C

Range for the Etzba, Based on the NCEES Reference Handbook:

Per NCEES FE Reference Handbook, 9.3 Version for Computer-Based Testing.
ISBN 978-1-932613-67-4 p. 225

Digit 2 (Pointer finger) width for Men, ages 20-60: This matches for Digit 3 as well.
Breadth, distal joint: 5th percentile = 1.7 cm 50th percentile = 1.85 cm 95th percentile = 2.0 cm

Calculating the range for the etzba:
Low = $1.7/2.54 = 0.67$ inches/etzba
Mid = $1.85/2.54 = 0.73$ inches/etzba
High = $2.0/2.54 = 0.79$ inches /etzba

Calculating the range for the showbread:

Josephus states the showbread was unleavened, and The Mishnah describes the loaves as being 10 Etzba long, and 5 Etzba wide, with rims/*horns* that were 7 Etzba long;
<https://en.wikipedia.org/wiki/Showbread>

Calculating Omer Based on NCEES Etzba Ranges

	Dimensions 10 etzba x 5 etzba x 7 etzba	Would this fit on the table?	Cubic inches	Estimated C/omer Using yeast bread average of 23.7 cubic inches / C flour
Low 0.67 inches	6.7 x 3.35 x 4.69	yes	105.3	2.22 C per omer,
Med 0.74 inches	7.3 x 3.65 x 5.11	yes	136.2	2.87 C per omer
High, 0.79 inches	7.9 x 3.95 x 5.53	yes	172.6	3.65 C per omer

Comparing modern loaf bread baking pans:

<u>Loaf</u>		<u>Loaf</u>	
8 x 4 x 2 1/2 in.	4 cups	20 x 10 x 6 cm	948 ml
8 1/2x4 1/2x2 1/2	6 cups	21 x 11 x 6 cm	1.4 liters
9 x 5 x 3 inches	8 cups	23 x 13 x 8 cm	1.9 liters

Read more: <http://www.joyofbaking.com/PanSizes.html#ixzz3jUrzApHO>

Since there were 2 omers per loaf of bread, then the modern range for the loaf sizes put the omer at 2C to 4 C.

Note: Shelley has a bread pan that might be what the Mishna is describing. The depth is 2 ½ inches from bottom to top. However, at the very base, making the bottom flat, it is 6 inches x 3 inches. It has rounded corner, and sloped sides. At the extreme part of the “bottom”, it is 7.5 inches x 4 5/8 inches. At the top of the pan, the flare on the width 5 5/8 inches, instead of only 4 inches. Perhaps this is what the person describing the loaves was trying to convey, in saying that the width was 5 etzba, with 7

etzba horns/rims.

This loaf pan states it has a capacity of 1.5 Quarts, which would make the omer $6C/2 = 3 C$.

C. Relating this to the Omer:

1. By Barley size:

Using our dense yeast bread as an example to calculate the number of cups in this 2-omer representation:

Low range bread: $75.6 \text{ cubic inches} / 17.5 \text{ cubic inches of yeast bread/C of flour} = 4.32 \text{ C per 2 omer}$
= 2.16 C per omer.

High range bread: $98.76 \text{ cubic inches} / 17.5 \text{ cubic inches of yeast bread/C of flour} = 5.6 \text{ C per 2 omer}$
= 2.82 C per omer.

2. Calculating the Etzba by Fingerwidth:

Finger-width loaf cubic inches = $147.7 \text{ cubic inches} / 17.5 \text{ cubic inches /C flour} = 8.4 \text{ C per 2 omer}$
= 4.2 C per omer.

This needs to be repeated with unleavened bread, because most-likely the showbread would have been unleavened, to be able to be on the tables during Passover and Feast of Unleavened Bread. Josephus states they were unleavened bread. (<https://en.wikipedia.org/wiki/Showbread>)

Experimental Showbread:

Since Leviticus 24:5 does not mention any oil with the recipe for the bread, I had the first trial to be with just flour, salt and water to make a dough that would form into bread. Subsequent trials will use 0.33 hin oil, which would correspond to the amount of oil prescribed for a grain offering with 0.2 deal of flour.

8 C whole wheat flour
 1 Tbs salt
 43 Tbs water

Method: Put flour and salt in bowl and mix well. Add 40-45 Tbs water to make a moderately-stiff dough. Knead in bowl a few times, until the dough forms a ball. Shape into a loaf and bake at 350 F until top of loaf is nicely browned, and the top sounds hollow when tapped, approximately minutes.

Notes: Dough made a ball that was well under the maximum size it would need to be to still fit on the table. I formed it into a loaf that was approximately **6.5 inches x 4 inches x 4.5 inches high** to bake. Compare to the recorded value of the showbread range above: (Smallest: 6.7 inch x 3.35 inch x 4.69 inch Largest: 7.9 inches x 3.95 inches x 5.53 inches, max)

The density of the resulting dough was $1286 \text{ g water} = 6 \text{ C} + 3 \text{ Tbs water at } 70 \text{ F}$. Density of water =

1.000 at 70 F, (68F reference). So, the dough weighs 2.83 US pounds, and takes up the volume of 1,286 mL, or 1.286 L.

The finished bread weighs 1499 grams. Density of bread to Cups of flour: $6.5 \text{ inches} \times 4 \times 4.5/8 = 117/8 = 14.62$ cubic inches per Cup of flour.

Subsequent loaves were made with commercially available wheat flour, and white flour. The table below summarizes the loaves.

Loaf #	Type of flour	Cups of flour	Dimensions (in inches)	Weight of Loaf, g	Cubic inches (by finished loaf size) Formula: $L \times W \times 3 \text{ inches for base} + (1/3 L \times W \times (H-3)) = \text{total}$	Cubic inches per C of flour:
1	local	8	6.5 x 4 x 4.5	1499 g	$78 + 13 = 91$	11.38
2	Com. Whole wheat (CWW)	8	6.5 x 4.5 x 4.25	1670 g	$87.8 + 12.2 = 100$	12.5
3	Com. White	8	6.5 x 4.5 x 4.25	1643 g	$87.8 + 12.2 = 100$	12.5
4	CWW	6	I forgot to test	1178 g		
4	C WW British quart	9.66	$7 \frac{1}{8} \times 5 \frac{5}{8} \times 5.5$	1929 g	$120 + 33.4 = 153.4$	15.9
5	CWW	6	I forgot to test	1015 g		
Avg.						13.0 cu.in/C

Comparing with Josephus' loaf sizes:

Etzba estimate	Resulting loaf size	Will it fit on table?	Cubic Inches Formula: $L \times W \times 3 \text{ (to 3 inches)} + (1/3 L \times W \times (H-3))$	Estimated Cups of flour in bread from unleavened factor 13 cu in/C	Estimated Cups of flour in omer
Low 0.67 inches	6.7 x 3.35 x 4.69	yes	$67 + 15 = 82$	6.3 C	3.2 C
Med 0.74 inches	7.3 x 3.65 x 5.11	yes	$79.9 + 18.7 = 98.6$	7.6 C	3.8 C/omer
High, 0.79 inches	7.9 x 3.95 x 5.53	yes	$93.6 + 26.3 = 119.9$	9.2 C	4.61 C/omer

7. Sheaf size

How big of a sheaf is needed to get an Omer? In 2011 and 2012, the sheaf needed to be 28 to 31 inches in circumference to get 3.6 liters of grain. This sheaf now can be smaller, but we don't have any calculations for that yet, as of 2015. A web site providing the "International Guild of Knot Tyers Forum" includes a post from Derek Smith on October 18, 2009 which says the he remembers when wheat was harvested with a Sail Reaper drawn by 2 horses. The men would bind the sheaves using the straw. So, the size of the sheaf was limited by the height of the wheat. He says that the old wheat was taller than it is today. It was often 3 feet long.

A YouTube video of hand harvesting barley in the Atlas Mountains, <http://thedeserttabernacle.blogspot.com/search/label/Value%20of%20an%20Omer>, shows sheaves with about 3 inch diameters.

In 2012:

I counted 393 kernels in 1 Tablespoon. (using a previous year's wheat)

I counted 38 kernels in 1 head (this year). This is about $\frac{1}{4}$ teaspoon.

I counted 111 heads between thumb and middle finger = small canning jar ring. = 6 inch circumference = an area of 3 in^2 .

Based on this, we want to estimate the grain volume produced from a 3 inch diameter sheaf:

3 inch diameter \rightarrow area of $1.5^2 * 3.14 = 7.06 \text{ in}^2$.

Heads of wheat = $7.06/3 * 111 = 261.4$ heads of wheat

kernal of wheat: (2012 harvest yield) = $261.4 * 38 = 9,933$ kernal of wheat = or $261.4 * 0.25 = 65.4$ tsp.

Cups of wheat: $65.4 \text{ tsp}/48 \text{ tsp} = 1.36 \text{ C}$ of wheat. = omer

8. The Quatern and the Quaternloaf:

While searching for the size of a British quart vrs a US quart, I found the following unit:

The Quatern =

quartern [2]

a traditional English unit of weight equal to $\frac{1}{4}$ [stone](#), 3.5 [pounds](#), or about 1.5876 kilogram. See also quartern-loaf, below.

quartern [3]

a traditional unit of volume for dry goods equal to $\frac{1}{4}$ [peck](#) or 2 quarts. This corresponds to 2.2731 liters in the British Imperial system or 2.2025 liters in the U.S. system. The unit is much more common in Britain.

And the Quaternloaf:

quartern-loaf

a traditional English unit of weight for bread. A quartern-loaf is made from a quartern [2] of flour. The finished loaf usually weighs somewhere between 4 and 5 pounds (very roughly 2 kilograms).

This seems to validate the omer as being 1 quart, and the showbread, and the loaves of bread brought for firstfruits to be made with 2 omers, or 2 quarts of flour.

Appendix A: Pictures of the Experiment of Flour to Oil Ratio and the Resulting Bread:

Seven teaspoons of oil in 1/3 C of flour.



After 4 teaspoons of water was added, 2 teaspoons of oil was squeezed back out.



It took 4 teaspoons of water and 1/2 hour of kneading to get gluten development.



Dough passed all tests for (L to R) pan-fried, deep-fat fried, and baked in 4 different thicknesses.



I was evenly pleasantly surprised that most of the deep-fat-fried specimens puffed, in a repeated experiment using white flour. This description of “cakes mingled with oil” for how the consecration bread was to be brought for Aaron and his sons in Exodus 29:1-2 , and also in the description in how a grain offering can be brought in Leviticus 2:1-7. I think the additional water added to the dough contributed to the puffing, as well as the lighter density white flour. The steam is probably what has raised this unleavened bread.



Ways a grain offering can be brought: 1. Sheaf of roasted ears 2. Pile of flour with oil poured over (not mixed) 3. Baked as thicker cakes, or thinner wafers 4. Pan fried two ways with oil (shallow-oil shown in middle bottom picture and deep-fat-fried shown in bottom right picture.) Leviticus 2:1-7



Appendix B: Recipe for the Grain Offering for the Morning and Evening Sacrifice (Based on 4 C per Omer)

4 C wheat flour, sifted

½ C olive oil

1 1/2 tsp salt

1 ½ C water, to make a moderately soft dough (20-22 TBS)

Method: Put the olive oil, water, and salt in a bowl, and mix until a thick emulsion forms. Add the flour and stir until a moderately soft dough forms. Adjust with small amounts of water or flour, if necessary. Form into 1-2 small balls. Cover with damp cloth until ready to roll out.

For baking: Either make 1-inch balls and place them on a greased cookie sheet. Flatten slightly with hand or a fork, if desired. Or, roll out on well-floured surface to the thickness of pie dough. Transfer to greased cookie sheet and cut into strips or squares in desired size for eating. Poke with a fork, and bake in 350 deg. Oven for approximately 10-14 minutes, or until golden brown. Transfer to cooling rack and sprinkle lightly with salt.

For pan frying: Take a 1-inch ball of dough, and flatten in the palms of your hands, until the patty is about 1/4-inch thick. Or, roll out on well-floured surface to the thickness of pie dough, about 1/4-1/8 inch. Cut into strips or squares in desired size for eating. Place in a hot pan with about 1-2 tsp oil. Fry until golden brown on one side, about 1-2 minutes. Flip and fry on other side until brown, about another 20-30 seconds. Drain on paper towels. Sprinkle lightly with salt.

For deep-fat-frying: Take a 1-inch ball of dough, and flatten in the palms of your hands, until the patty is about 1/4-inch thick. Or, roll out on well-floured surface to the thickness of pie dough, about 1/4-1/8 inch. Cut into strips or squares in desired size for eating. Place in pan which has about 1-2 inches

of oil in the bottom, which has been heated, but is not at the smoking point. Carefully place the dough in the hot oil. Fry for 30 seconds to one minute on one side. Dough will rise to the top of the oil, and may puff slightly, depending on oil temperature, and amount of water in the dough. Flip carefully to the other side, and fry another 10-20 seconds. Take out with tongs or slotted spoon, and drain on paper towels to cool. Sprinkle lightly with salt.



Puffing even seen with whole wheat flour, in one specimen.

Appendix C: The Showbread Loaf:

A trial to determine if 8 C of flour will make a loaf that will fit on the Table of Showbread.

Since Leviticus 24:5 does not mention any oil in the recipe for the showbread, I left it out of the first trial.

8 Cups of whole wheat flour
 1 Tablespoon (15 mL) salt
 42-45 Tablespoons (630-675 mL) or 2.5-2.66 Cups water.

Put flour and salt in bowl and mix. Add water to make a moderately stiff dough, approximately 2.5 Cups. Add small amounts of water at a time, so you don't get it too wet and sticky. When the dough comes together as a ball, knead it a few times in the bowl, or on a greased surface. Form into a small loaf, approximately 6.5 inches by 4 inches. Place in greased and floured loaf pan, and bake at 350 F until the top is golden brown, and sounds hollow when tapped lightly, approximately 45 minutes. You may need to turn down the heat to 325 F the last 15 minutes, to prevent the top from burning. Take out of oven and cool on cooling rack.

Specification: Dough volume: It was equivalent to 1286 g of water at 70 F, or 1.286 L, or 6 C plus 2 Tablespoons of water. The dough ball shrank in size from 8 C flour to a little over 6 C total.

After baking: The finished loaf weighs 1499 g, or is 3.3 pounds.

Size: At the very bottom of the loaf, it is 3.5 inches wide. At the maximum width, a little further up (perhaps the "horns" talked about in the Jewish literature for the loaf?) it is 4.5 inches. It is 6.5 inches long, and 4 inches tall. So: **3.5 inches wide (with a max of 4.5 inches) x 6.5 inches long x 4 inches tall.**



Twelve of them will fit, with the utensils, on a table that is 18 inches x 36 inches.





The experiment was repeated, using different amounts of flour as the omer, with the British quart being the highest amount used as the base. I did not use the lowest amount of flour (2 C), because if the higher amounts of flour per loaf would fit on the table, then the lower amounts would, too.

As you can see, the British loaf (Bottom picture, First row, second to last loaf , largest loaf on table), seems that it is at the limit of what can fit on the table, barring special pans that would force the dough up taller. **The British loaf measured: 7.18 inch long x 5 5/8 inch wide x 5.5 inch tall.**

Compare to the **Maximum value for the loaf, using the Etzba: 7.9 inch x 3.95 inch x 5.53 inch.**



The experiment was repeated as follows: From Left to Right, top row to bottom row:

1. Loaf 1: My home-milled wheat locally grown in Evansville, IN. 4 C per omer. 8 C. total
2. Loaf 2: Commercially available whole wheat flour, 4 C per omer. 8 C total.
3. Loaf 3: Commercially available white flour, 4 C per omer. 8 C total.
4. Gap
5. Loaf 4: Commercially available wheat flour, 4.8 per omer (The British quart), 9.66 C total.
6. Loaf 4: Commercially available wheat flour, 3 C per omer, 6 C total.
7. Second row: Basing a 6-ounce C (Roman pound), then 4 C per omer. (3 US C), 6 C total.

Discussion:

Since there is no practical minimum for the loaf, I focused on the maximum value. The maximum seems to be using the amount of flour in a British quart, or approximately 4.8 C per omer. The recipe needs to be refined, however, because the the showbread baked up to little hard bricks, if baked long enough to not be doughy in the middle. The last loaf in row one was not baked long enough, and upon cooling, the doughy middle started to break out of the thinner baked crust edges. When we tried to slice these loaves, they were almost impossibly hard to cut. We tried using a saw, and a hammer with Bill's full force on it. One blow with the hammer made no dent in the top of the crust. After my son Alex pounded on it for about 20 minutes, he was able to get a dent in the top of the crust. So, unless these really were mostly for show, I think the loaves need to be made with some oil. That would be the next experiment to try. For now, though, I think we can cap the top of the omer at 4.8 C, or the British quart.

Appendix D: The First-Fruits Yeast Bread:

Discussion: Every household was commanded to bring two loaves of yeast bread out of their houses for part of the celebration of the first fruits. The loaves of bread were to be made with two omers of flour each. (Exodus 23:16, Exodus 34:26, Leviticus 23: 17)

By using a 4-C omer, the size of the loaves for the first-fruits bread becomes much more managable, than if one uses the 8-C omer commonly reported. No unusual pans are needed to bake the loaves, and two can fit in our modern ovens easily. This in itself may not be a “proof” that the omer is smaller than 8 C, but it is definitely a consideration, in how big the Israelites' ovens would need to be, in order to bake such large loaves with the larger omer.



Here is a picture of the loaves of bread which are made from an 8-C omer, or 16 C of flour per loaf: They do not both fit into the oven at once, and Bill had to make a special pan in which to bake the loaves.

So, then, here is a recipe, and pictures that would show the size of the loaves of bread that would be made from a 4-C per omer loaf, or 8 C of flour total per loaf.

Appendix D2: Recipe for the Two Loaves of Bread Like was Brought for First-Fruits, or Pentecost

(Exodus 23:19, Exodus 34:22, Leviticus 23:17)

(Based on a modern recipe for yeast bread, but using the amount of flour listed in Lev. 23:17, based on 4 C per omer of flour, 8 oz per Cup)

Recipe for one loaf of bread:

3 tsp yeast

1 C warm water

2.5-3 C water

1 TBS salt

2/3 C olive oil (try ½ C, also)

8 C sifted wheat flour More flour than the 8 C will be needed for kneading, up to 4-5 C more, so have extra on hand already prepared.

Method:

Soften yeast in 1 C warm water. Let sit until bubbly. While you are waiting, put flour and salt in bowl and mix well. Add the oil, and mix until there are pea-sized globs uniformly distributed in the flour. Add the yeast, and rinse the yeast bowl with another cup of warm water. Add the rinsing to the flour. Add 1/2C more warm water, and stir to mix. If it is still too crumbly to make a moderately-stiff loaf, then add more water in 1/4C increments, or so, until you can start to knead the dough. If you make it too thin and sticky, then add more flour until the dough is suitable for kneading.

Turn out onto either a well-floured, or well-oiled surface for kneading. Knead by folding and turning, adding more oil, or more flour on your kneading surface, until you get a smooth, satiny dough. This could be from 15 minutes to 2 hours, depending on the gluten content of your dough, and whether it was sifted or includes the bran.

You are finished when a small piece of dough can be stretched out thin, like pizza dough, without breaking. This is also called the window-pane test, if you can stretch it enough to see some light come through the dough when holding it up to a light source. If you can't get it to this point after two hours of kneading, then go ahead and proceed with the rising and baking.

Put dough in a well-greased and floured pan. If you don't have a large loaf pan for French bread, then use a 3-quart square casserole dish or 10-12-inch round pizza pan. Cover and let rise in a warm place until doubled, or about 45-60 minutes. Bake at 325 degrees F for about 45 minutes, or until top is well-browned and hollow-sounding when tapped. If necessary, turn the oven temperature down the last 15 minutes, to ensure the middle of the bread is baked, without burning the top of the loaf.

Take out and cool on cooling racks.

Repeat for second loaf of bread, or, if you have room in your oven to make the second loaf at the same time, then just use the recipe for the larger amount below.

Recipe for the two loaves of bread:

6 tsp yeast

1 C water

hot water, 5-6 C

1/4 C salt

1 1/3C olive oil (Try 1 C also)

16 C flour, plus more for kneading. Plan an extra 4-6 C more.

Soften yeast in 1 C of warm water. Let sit until bubbly. Combine flour, salt, and oil. Put in the softened yeast into the flour, and add 3 more C of water. Stir to mix. Add more water, or flour, until it makes a moderately stiff dough. Turn out on a well-oiled or well-floured table, if it is sticky. Knead until smooth and satiny, about 15 minutes, for well-sifted flour, or up to 2 hours for unsifted flour. It is finished being kneaded when a small ball of dough can be stretched thin enough to see some light through it, like pizza dough. This is called the window-pane test. If you can't get it to this stage after 2 hours of hand kneading, then just start letting it rise anyway. I have the best raised bread if I let it rise only once, so at this point I shape into two round loaves and put in 2- 3- quart greased and floured

casserole dishes, or on 2 greased and floured 12" cookie sheets or pizza pans that have a small rim on them. Let rise until double, about an hour. Bake in a 325 degree F oven until golden brown, and top sounds hollow when you tap on it., about 45 minutes. If necessary, turn down the heat after about a half hour, to make sure the inside of the loaf gets done before the outside gets too dark.

Note: This bread was quite crumbly, and did not slice well until it was at least 1 day old. I may not have kneaded it enough, or else there is too much oil in with this recipe. Since the oil added was based on the unleavened bread recipe for the amount of oil, you may experiment around with adding less oil.

Rochelle A. Houser

1. Sifting and Measuring: Sift and Measure 8 C per loaf of bread. Make sure you have about 22C total, for kneading, and flouring pans.



2. **Measure out yeast and water:** 3 teaspoons yeast for 1 loaf, Softened in 1 C warm water. Let it get foamy before adding to flour mixture. Do step 3 while waiting. (Showing 1 loaf batch).
3. **Measure out flour, salt, and oil:** Measure out 8 C flour, $\frac{3}{4}$ C oil, and 1 tablespoon salt.



4. **Mix flour, salt and oil until small dough balls appear uniformly throughout.**



5. Add yeast to flour mixture.

6. Add 2 C water, or until you get a moderately stiff dough. Add more water, or flour to get to where you can knead the dough.



7. Knead on well-oiled, or lightly floured surface until sponge is smooth and satiny, and passes the “window pane test”. This is what the “window pane test” looks like



The window-pane test results will depend on how much gluten is in your flour, and how long you knead it. These are all acceptable results to stop kneading. Left bottom one is with very finely sifted whole wheat flour, until it was almost white, higher gluten flour. The other two are with unsifted, stone-ground wheat flour with a low gluten content.

8. **Cover and let rest 5-10 minutes. Grease and flour your pan while you are waiting.**
9. **Transfer dough to pan. Cover, and let rise until double. (About 45 minutes). Wash dishes and clean off the table while you are waiting for it to rise. Preheat oven to 325 degrees F.**



10. **Bake at 325 degrees F for about 45 minutes, or until golden brown, and loaves are hollow-sounding when tapped.**
11. **Remove from oven, and cool on cooling racks. Enjoy!**



Conclusion:

Most commonly reported values for the omer and the hin are too large. Based on experimental evidence of the amount of oil that wheat flour can absorb and still make unleavened bread that can be baked and prepared two ways with oil, a reasonable estimate of the size of a sheaf of barley, an estimate of caloric value of a simulated manna, the size of the unleavened bread that would need to fit on the showbread, and the sizes of the leavened bread that needed to be brought for first-fruits, we have shown that the minimum amount an omer can be is 2 US Cups. The maximum it can be is 4.8 C, and still fit on the table, and may be less than that, based on the actual yield of a sheaf of barley. The corresponding hin would be 2.5 C or less, up to We will show 2 C of oil for the hin, and 3.5 C of flour or grain for the omer.

Rochelle A. and William P. Houser, September 6, 2015

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21. <http://www.thefreedictionary.com/epha> (on this page is a reference to the Thesaurus, wordnet 3.0, Farlex clipart collection, (c) 2003-2012 Princeton University, Farlex Inc. that states the kor, homer = 10 baths, or 10 ephas. The word, “kor”, is translated “homer”. I think this could be the ancient Egyptian khar. More study is needed on this.)
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28. https://en.wikipedia.org/wiki/Finger_%28unit%29
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30. <https://en.wikipedia.org/wiki/Peck> This could show that the hekat = peck, if the conversions to the New Kingdom were 1 hin = 0.477 L, then 16 hin = hekat and 10 hekat = 1 khar. = 160 hin.
31. https://en.wikipedia.org/wiki/Hekat_%28unit%29 (Tanya Pommerang states the hekat in the MK and NK is 1.26 US gallons.)
32. The quatern and quaternloaf: <http://www.unc.edu/~rowlett/units/dictQ.html>
33. <http://jewishencyclopedia.com/articles/14821-weights-and-measures#anchor8> probably where the term “gallon” comes from. 300 qa = 60 gin = 1 gur = 303L = 80 US gallons. From this, 60 gin = 80 US gallon, which makes each gin = 1.33 US gallons. This matches pretty closely to the hekat in the NK as being 1.26 US gallons. It also could also explain why the British gallon is about 20% larger than the US gallon (1 British Imperial gallon = 1.2 US gallons). Their term for gallon is stated as being unknown. The Jewish encyclopedia article here, makes the gin = hin, but it is a larger unit than the qa, and roughly corresponds with the Egyptian hekat. I think this is where the discrepancy lies! Also, in this article, they quote the qa = 99-102 mL, but also equal to the weight of water equal to 1 great mina. They say the great mina = 1010 grams. Therefore, the two statements cannot both be true. If the qa is ten times greater than the stated number, or 990-1002 mL, then it is closer to being possible for it to equal the great mina of 1010 grams. This then would show a specific gravity of water to be 1010 g/1002 mL = 1.0079 g/mL This is only possible, if the reference temperature for the specific gravity of water is at the boiling point, and the capacity was measured when the water was at 172.5 degrees F. This might be possible, but only if the water was boiling, and then cooled down to 172.5 degrees F during the measuring process. I think this article is not a reliable source of information.
34. Sugar is sold by the OK system: 1 pound, 2 pounds, 4 pounds, 10 pounds, 20 pounds, 40 pounds. See <http://www.bulkfoods.com/sweeteners-distributor/1140-Maple-Sugar-20-pounds.html> for 20 pounds, and <http://www.amazon.com/Mansfield-Maple-Granulated-Maple-Sugar/dp/B00XIO1YFA> for 40 pounds. From their website, they also sell 120 lbs, and 1200 lbs. http://www.maplesyrupwholesale.com/buy_wholesale_maple_sugar.htm http://vermontpuremaple.com/buy_maple_sugar.htm sells maple sugar in some strange sizes: 3.4 oz jar, 6 oz jar, 11.5 oz jar, 23 oz jar, 5 lb tub, 5 lb bulk bag, 10 lb tub, 10 lb bulk bag, 20 lb bulk, 40 lb bulk. <http://www.welchsmapple.com/granulatedsugar.htm> sells maple sugar in 6 oz,

12 oz, and 24 oz jars, and then 10 lb bag. Maple sugar history: “Using maple products as sweetener started with the aboriginal Americans before the arrival of English settlers in the continent. It was their staple and only condiment and they used to add flavor to almost all of their food.” <http://maplecommunity.com/maple-sugar/>

35. http://www.celticnz.co.nz/Weights_Measures_Volumes/Weights_Measures.htm This is just weird. Relating ancient units of measure to the size of the earth, etc.
36. The “great mina” and the mina : <http://www.britannica.com/science/mina-unit-of-weight> This source says that the great mina was 978 g, and the mina was 640 g. The Hebraic mina was 499 g.
37. The qa was set to be the volume of a great mina. Or a cube measuring a handbreadth. (They estimate 3.9-4 inches) <http://www.britannica.com/science/qa> This would say that the qa was $3.9 \times 3.9 \times 3.9 = 59.31$ cubic inches. This is $59.31/231$ cubic inches per gallon = 0.2567 gallon, or a little over a quart. Or, $4.0 \times 4.0 \times 4.0 = 64$ cubic inches. This is $64/231 = 0.277$ gallons. Metric: $9.9 \text{ cm} \times 9.9 \text{ cm} \times 9.9 \text{ cm} = 970$ cubic cm, or 970 mL. Or, $10.2 \times 10.2 \times 10.2 = 1061$ cubic cm, or mL.

Why is this so close to our modern quart, but not exact? The size of the hand could have been bigger when this was set up, the atmospheric pressure could have been higher, to squish it down more, or

$978 \text{ g} / 970 \text{ mL}$ (low estimate for handbreadth) = 1.008 g/mL for water. That's pretty heavy!

$978 \text{ g} / 1071 \text{ mL}$ (high estimate for handbreadth) = 0.913 g/mL for water. That's the specific gravity of water at 310 degrees F. That is an impossible standard to have set up, in my opinion.

What would the atmospheric pressure have had to be for water to be 1.008 g/mL at 80 degrees F? (Assuming it was hot over there in Babylon, and a typical day would be about 80 degrees?)

Low: $PV = nRT$

$P(0.970 \text{ L}) = (978 \text{ g}/18.015\text{g/mole}) \times 0.08206 \text{ L atm/mol} \times 299.816667\text{K} = 1,316 \text{ atm Pressure!}$

High: $PV = nRT$

$P(1.071 \text{ L}) = (978\text{g}/18.015 \text{ g/mole}) \times 0.08206 \text{ L atm/mol} \times 299.816667\text{K} = 1,247.103 \text{ atm pressure!}$

Wow that's a lot of pressure.

However, if the system really was set up for 4,000 mL (the ideal gallon, instead of 3785 mL per gallon now, was to equal 1000 g (instead of the 978 g), then at STP

38. <http://jewishencyclopedia.com/articles/13536-shekel> This source states that Ezekiel 45:12 proports 50 shekels /mina. (Odd, because the text states 60 shekels per mina, but it works out to 50 “sanctuary” shekels per mina, if the sanctuary shekel is 10.0 g, instead of 8.33 g, like the Babylonian shekel was at the time.)

Estimating the Sanctuary Shekel At the Time of Moses in Building the Tabernacle

Abstract: In trying to determine how to show the amount of silver and gold that was brought for the construction of the tabernacle in Exodus 38:25-26, calculations were made using the conversions implied in the immediate texts. Then, the total was compared with Ezekiel's description of setting up the new Temple measuring system, and using the Babylonian mina which is presumably the measuring system with which Ezekiel would have been familiar. It is also reasonable that he was re-establishing the original temple/tabernacle/sanctuary shekel's weight, since his conversion between shekels and mina do not match the reported Babylonian conversion factor. By substitution, then, the Sanctuary Shekel as described in Exodus 38:25-26 is very likely 10.0 g. A literature search confirms this conclusion in at least 2 sources. The conclusion that there were therefore only 50 shekels per mina in the Hebraic system is confirmed in at least one source.

Introduction: How much silver was brought for the construction of the tabernacle? In trying to show the amount of silver brought as listed in Exodus 38:25-26, I did the following calculations:

1. Exodus 38:25 “And the silver from those who were numbered of the congregation was one hundred talents and one thousand seven hundred and seventy-five shekels, according to the shekel of the sanctuary: a bekah for each man (that is, half a shekel, according to the shekel of the sanctuary), for everyone included in the numbering from twenty years old and above, for six hundred and three thousand, five hundred and fifty men.” NKJV
2. One observation is that it is likely there were at least two different values for something called a shekel, since this verse specifies the shekel of the sanctuary. Therefore, we should be able to find two “standard” shekels in the Egyptian system, and one of them was going to be used for the sanctuary system, as opposed to a regular trading system.
3. Calculating the number of shekels total brought:
 $603,550 \text{ men} \times 0.5 \text{ shekel/man} = 301,775 \text{ shekels}$

Subtracting out the remainder of shekels listed gives the number of shekels per talent.

$301,775 \text{ shekels total} - 1,775 \text{ shekels} = 300,000 \text{ shekels}$, which is 100 talents.

Therefore, there are 300,000 shekels per 100 talents or

3,000 sanctuary shekels per talent.

4. Ezekiel was contemporary with Daniel, who was taken away captive to Babylon. The Babylonians had taken over the rulership of the Jews, and were the significant power over most of the world. It is therefore a reasonable assumption that Ezekiel would be familiar with the Babylonian system of weights and measures. Ezekiel was given the vision about the new temple that has yet to be built. He was given a set of equivalents in capacities and weights to use in the new temple. I am making two assumptions with this data.
 1. Ezekiel is re-establishing the original values God set up with the first tabernacle in Exodus.
 2. Ezekiel's measurements are different in some respects from the Babylonian system, or else he may not have needed to restate them with such detail.

“ And the shekel *shall be* twenty gerahs: twenty shekels, five and twenty shekels, fifteen shekels, shall be your maneh.” Ezekiel 45:12

3. **Case I:** Assuming the “maneh” in Ezekiel 45:12 is the same thing as the Babylonian mina (Strong's Hebrew 4488, “maneh, mina (a measure of weight or money)”), and the Babylonian mina had the following conversions, according to this source:
<http://www.livius.org/w/weights/weights.html>
1. 1 mina = 499.8 g = 1.100 US pounds (original seems to be 500.0 g)
 2. Now, substituting the equivalents that Ezekiel set up:
 1. 1 mina = (20 shekels + 25 shekels + 15 shekels) = 60 shekels.
 2. 60 shekels = 499.8 g. (substitute 1 and 2)
 3. 1 shekel = $499.8 \text{ g} / 60 = 8.33 \text{ g}$ (Using Babylonian equivalents)

Using the mina as the same standard as the Babylonians, but using the 3000 shekels/talent, then we have a possibility of

$301,775 \text{ shekels} \times 8.33 \text{ g/shekel} = \mathbf{2,513,785 \text{ g silver brought.}}$

However, this would make a sanctuary shekel to be exactly the same weight as the “normal” shekel in Babylon, according to the source above. The difference seems to be in the number of shekels per talent.

So, case II:

Case II. Using the Babylonian talent weight, and adjusting the sanctuary shekel:

If we use the Babylonian talent weight of 1 talent = 60 mina = 3600 shekels = 30.00 kg, then

1 talent = 30,000 g

Leftovers: $1775 \text{ shekels} / 3,000 \text{ shekels per talent} = 0.591 \text{ talents leftover}$

Add 100 talents = 100.59 talents brought.

$100.59 \text{ talents} \times 30,000 \text{ g/talent} = \mathbf{3,017,700 \text{ g silver brought.}}$

$3,017,700 \text{ g} / 301,775 \text{ shekels} = 9.9998 \text{ g/shekel}$, which is effectively 10.000 g/shekels

Or **10.0 g/sanctuary shekel**, which would denote a different standard for the sanctuary shekel than the prevailing “regular” shekel of 8.333 g.

If the standard 1000 troy ounce silver bar = talent, then

1 Troy ounce = 31.1034768 g,

Therefore, a 1000- troy ounce silver bar = 31,103.47 g.

This seems to match the weight of a talent in the Mosaic era. It is 31,103.47 g vrs 30,000 g. This is only a 3.6% difference. From this, we can make a guess as to where the Troy system of measuring gold and silver came from.

Discussion

Based on the mina = 500 g, and the shekel = 10 g, and the talent = 30.00 kg, and the shekels/talent = 3000, then we have a perfectly even conversion system.

1 gerah = 0.5 g

20 gerah = 1 shekel = 10 g

There would be 50 “sanctuary” shekels of 10 g each in a 500 g mina. There would be 3000 sanctuary shekels in a sanctuary talent, and then 60 minas per sanctuary tabernacle talent.

This consequence of a 10.0 g sanctuary shekel to match the prevailing weight of the Babylonian mina then resulting in 50 sanctuary shekels, seems to be borne out by this article:

They are stating that because of Ezekiel 45:12, there were 50 shekels per mina. This matches my calculations, but does not match the literal number of shekels per mina stated in Ezekiel 45:12 (60 shekels per mina). Therefore, I suspect my case II is correct, and the people started using the 50 “sanctuary” shekels per mina.

“It may possibly be inferred from Ezek. xlv. 12 that in the exilic period and the time which immediately preceded it the division of the mina into 50 shekels became customary among the Jews, and that this was simultaneous with the division of the shekel into 20 gerahs **גרה**, since this coin is mentioned only in Ezekiel and in the Pentateuch (Ex. xxx. 13; Lev. xxvii. 25; Num. Iii. 47).”

<http://jewishencyclopedia.com/articles/13536-shekel>

This also matches a value for a **kite** in Egypt, from this source: It is stated as being used to measure money. This would be consistent with the application of the shekel.

“After the [12th Dynasty](#), a smaller unit known as a **kite (qedet)** with a weight of 9 to **10 grams** was used and the deben itself was increased to ten kite. In reality, while the deben was a general measure of copper, [silver](#) and [gold](#), the **kite was only used for measuring silver and gold, but mostly only silver.**”

Read more: <http://www.touregypt.net/featurestories/measures.htm#ixzz3kJPBt8P0>

Another source also confirms the Egyptian kite at 10 g, and that the Jewish people used a similar-value coin later, called the NECEF. Both of these coins meant “half”, matching Exodus 30:13, and Exodus 28:25-26. Exodus 30:13 says that the half-shekel was to be brought as the offering, and that 20 gerahs was a whole shekel. So, in the source below, we can be pretty sure, then, that the NECEF was 10 grams, and that it was half of an original Egyptian shekel, which was by Exodus 30:13, 20 gerah. This means that the gerah was 1 gram.

The oldest extant weights bearing Hebrew inscriptions date from the period of the Kingdom of Judah (tenth–sixth centuries BC). They are normally of limestone, dome-shaped with a flat bottom; a few bronze specimens exist. There are several types, all rare. The total number of known specimens of all groups is a few dozen. They are:

- **NECEF**. Average mass about 9.8 g. The *necef* is not mentioned in the Bible. The name means “half”: it may have originally been half of some more ancient unit. Scholars today identify the *necef* with the Canaanite/Syrian/Aegean unit already described. It is also equivalent to one Egyptian *qedet* and to four-fifths of the royal *shekel* of Judah (see below).
- **BEKA**. This word also means “half” (Genesis 24: 22 – see above). The mean mass of this group is about 6 g. The *beka* is one-half of the “shekel of the king” first mentioned in II Samuel 14:26.

There is evidence of two “standard” units of shekels in use in Egypt, from the source above, and also This source lists a fairly standardized Egyptian shekel as 12.4 g (https://books.google.com/books?id=raKRY3KQspsC&pg=PA1013&lpg=PA1013&dq=an+Egyptian+hin&source=bl&ots=lUSQu562kd&sig=hARbB9Z1d19blcQQG6w1J6aeOlc&hl=en&sa=X&ved=0CB8Q6AEwAGoVChMIlaif3ImDxw1VQ6keCh0_YQA9#v=onepage&q=an%20Egyptian%20hin&f=false)

Therefore, there would have been at least two different shekels in use during the time of Moses, (all seeming to be larger than the “sanctuary” shekel of 10.0 g. This satisfies the observation #2 above.

This also would show that the “sanctuary” shekel would be different from the prevailing Babylonian shekel, which was 8.33 g, which was smaller than the “sanctuary shekel”, at 10.0 g. This satisfies the observation 4.1 and 4.2 above.

Therefore, relating only to weights:

1 gerah = 0.5 g (see <https://en.wikipedia.org/wiki/Gerah>.)

20 gerah = 1 shekel = 10 g (Ezekiel 45:12)

50 shekel = 1 mina = 500 g (Ezekiel 45:12, using the original mina = 500 g)

3000 shekel = 1 talent = 30,000 g = 60 mina (Using 3000 shekels/talent, Exodus 38:25-26)

This satisfies the constraints and observations above.

Rochelle A. Houser, 8/30/2015.

More somewhat-related topics follow.

A side discussion that is somewhat related to this topic:

“The Pint's a Pound the World Around:”

This has been a saying in the English-speaking world a very long time. I am not certain how long, but it probably dates to the time when the British Empire was ruling the world.

<http://www.livius.org/w/weights/weights.html> The Solonian system Ptolomaic equivalents is the “pint's a pound the world around.”

Does 1 mna (mina) = 457.8 g = ? 1 hin = = 477 mL

If we use the specific gravity of water at 212 F, 0.958 g/mL, then

$457.8 \text{ g water} / 477 \text{ mL water} = 0.959 \text{ g/mL}$ Then divide by the specific gravity of water at 212 F = $0.9589/0.958 = 1.0009 \text{ mina/hin} = 1.00 \text{ mina/hin}$ to 3 sig figs.

hin/mina (Ptolomaic)

1 pound = 1 pint. (at 212 F)

Today's pint = 474 mL

Today's pound = 454.5 g

Pint/Pound =

$454.5 \text{ g}/474 \text{ mL} = 0.9589$ Then repeat the process above. Divide by the specific gravity of water at 212F = $0.959/0.958 = 1.009 \text{ pound/pint} = 1.00 \text{ pound/pint}$ to 3 significant figures.

These are the **same ratios, but smaller actual values!**

It looks as if we have kept the Ptolomaic values for the pound, in our United States pound, and revised our pint down a bit from the ancient Egyptian hin to match our pound. This is just too strange to be coincidental. May it be explained by changing atmospheric pressure? That will be left to another day.

Rochelle A. Houser, Chemist. 8/30/2015

Appendix I Calculation of Estimated Value of Money Brought for the Tabernacle:

Range of value of the silver brought:

$8.33 \text{ g/shekel} \times 301,775 \text{ shekels} = 2,513,785.75 \text{ g silver} = 80,820 \text{ troy ounces}$. Today's rate of \$14.25 per troy ounce silver = **\$1,151,685.00**

$10 \text{ g/shekel} \times 301,775 \text{ shekels} = 3,017,750.00 \text{ g silver} = 97,022 \text{ troy ounces}$. Today's rate of \$14.25 per troy ounce silver = **\$1,382,563.50**

12.4 g/shekel x 301,775 shekels = 3,742,010 g silver = 120,308 troy ounces. Today's rate of \$14.25 per troy ounce silver = **\$1,714,389.50**

Or, somewhere between **\$1.2-\$1.7 million US dollars.**

Estimated value of Gold Brought:

Exodus 38:24 says the gold that was brought was 29 talents, and 730 shekels, after the shekel of the sanctuary.

If, as above, the talent was 3000 shekels, and the sanctuary shekel was 10 g then:

$(29 \times 30,000 \text{ g}) + (730 \times 10\text{g}) = 870,000\text{g} + 7300\text{g} = 877,300 \text{ g. total gold}$

877,300 g/31.1034768g/Troy ounces

Today's value: 28,205.85 Troy ounces x \$1109/Troy ounce gold = **\$31,280,287.61**

Estimated value of Bronze (As Copper spot)

Exodus 38:29 says the bronze that was brought was 70 talents, and 2400 shekels.

If, as above, the talent was 3000 shekels, and the sanctuary shekel was 10 g, then:

$(70 \times 30,000\text{g}) + (2400 \times 10 \text{ g}) = 2,100,000 \text{ g} + 24000 \text{ g} = 2,124,000 \text{ g total bronze}$

2,124,000 g bronze/ 31.1034768 Grams = 68,288.18 Troy ounces copper

Today's value (9/14/2015): 68,288.18 ounces/\$0.99 per ounce = **\$68,977.97 USD.**

Total estimated value of the gold, silver, and bronze: (using 10.0 g/ sanctuary shekel)

Gold: **\$31,280,287.61**

Silver: **\$1,382,563.50**

Copper: **\$68,977.97**

Total: \$32,731,828.58 on September 14, 2015

Estimated gift per person: \$32,731,828.28/603,550 men in the census: = \$54.23 avg.

Recipe for the Grain Offering for the Morning and Evening Sacrifice (Based on 4 C per Omer)

4 C wheat flour, sifted

½ C olive oil

1 Tbs salt

1 ½ C water, to make a moderately soft dough (20-22 TBS)

Method: Put the flour and salt in bowl. Mix well. Add the olive oil, and mix until pebbly globs of oil are coated with the flour. Add the water in small amounts, and toss with fork. Add water until you can make a moderately soft dough ball. Adjust with small amounts of water or flour, if necessary. Form into 1-2 small balls. Cover with damp cloth until ready to roll out.

For baking: Either make 1-inch balls and place them on a greased cookie sheet. Flatten slightly with hand or a fork, if desired. Or, roll out on well-floured surface to the thickness of pie dough. Transfer to greased cookie sheet and cut into strips or squares in desired size for eating. Poke with a fork, and bake in 350 deg. Oven for approximately 10-14 minutes, or until golden brown. Transfer to cooling rack and sprinkle lightly with salt.

For pan frying: Take a 1-inch ball of dough, and flatten in the palms of your hands, until the patty is about 1/4-inch thick. Or, roll out on well-floured surface to the thickness of pie dough, about 1/4-1/8 inch. Cut into strips or squares in desired size for eating. Place in a hot pan with about 1-2 tsp oil. Fry until golden brown on one side, about 1-2 minutes. Flip and fry on other side until brown, about another 20-30 seconds. Drain on paper towels. Sprinkle lightly with salt.

For deep-fat-frying: Take a 1-inch ball of dough, and flatten in the palms of your hands, until the patty is about 1/4-inch thick. Or, roll out on well-floured surface to the thickness of pie dough, about 1/4-1/8 inch. Cut into strips or squares in desired size for eating. Place in pan which has about 1-2 inches of oil in the bottom, which has been heated, but is not at the smoking point. Carefully place the dough in the hot oil. Fry for 30 seconds to one minute on one side. Dough will rise to the top of the oil, and may puff slightly, depending on oil temperature, and amount of water in the dough. Flip carefully to the other side, and fry another 10-20 seconds. Take out with tongs or slotted spoon, and drain on paper towels to cool. Sprinkle lightly with salt.

The study booklet shows the results with whole wheat flour. This recipe shows the results with white flour.



Above: Starting with 4 C flour, and ½ C oil. Add salt to flour, and mix well. Add oil and stir until pebbly. Below: Add water until soft dough forms. Gluten development shows it will work for bread.



Below: Form into one or two balls. Cover until ready to roll or pat out. Ready for baking or frying.



I. Baked in an oven:

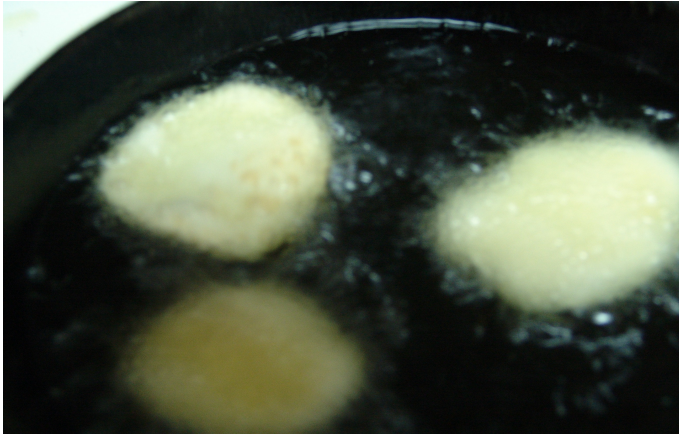


For baking: Either roll or pat out thin discs, or make 1-inch balls, and flatten them slightly. Put on greased pan and bake in 350 F oven for 5-7 minutes, for thin discs, or 6-10 minutes for thicker cookies. Below: Finished bread baked in the oven. Some of the thin discs puffed into hard, hollow shells.



II. Deep-fat-Fried:

For the deep-fat-fried bread: Roll out dough on table, and cut into squares or strips for frying, or take 1-inch balls of dough and flatten them with your hand. Preheat the oil, and carefully drop the dough into the fat. Allow it to cook 1-2 minutes, until it begins to float, and turn over carefully with spatula or tongs. Fry another 30 seconds or so, remove from oil, and drain on paper towels. Sprinkle lightly with salt. Notice how they look like “unleavened cakes mixed with oil,” while they are frying. Almost every piece of dough puffed into a flaky, hollow shell. These are softer than the baked shells, and more like pie-dough. Even one sample of dough made with whole wheat flour puffed. See pictures below.





III. Shallow-Oil Frying:

For shallow-oil frying: Take the dough and put in a preheated skillet that has a minimum amount of oil in it (1 tsp or less). Let them cook 1-2 minutes on one side. When spotty brown, turn over and cook another 1-2 minutes. Take out of pan and cool on paper towels. These are the most flexible of the three types. They remind me a bit of Naan, but they are not leavened, and they do not have the sour taste of Naan.





IV. Other ways one could bring a grain offering:

Leviticus 2:1-8 describes how one could bring a grain offering. The morning and evening sacrifices listed in Exodus 29:40 needed to be brought as bread (Numbers 28:1-3), but if you were going to bring a grain offering for other types of offerings, you could choose from the ways shown above, or else just raw flour with the prescribed amount of oil poured over it. (There was a different amount of oil prescribed for different types of sacrifices.). Or, for a first-fruits offering, you could bring a sheaf of wheat or barley heads that were roasted in the fire.



My Recipe for First-Fruits Bread

(Exodus 23:19, Exodus 34:22, Leviticus 23:17)

(Based on a modern recipe for yeast bread scaled to use the amount of flour listed in Lev. 23:17, assuming 4 US Cups is 1 omer of flour)

Recipe for one loaf of bread:

3 tsp yeast

1 C warm water

2.5-3 C water

1 TBS salt

2/3 C olive oil (try ½ C, also)

8 C sifted wheat flour More flour than the 8 C will be needed for kneading, up to 4-5 C more, so have extra on hand already prepared.

Method:

Soften yeast in 1 C warm water. Let sit until bubbly. While you are waiting, put flour and salt in bowl and mix well. Add the oil, and mix until there are pea-sized globs uniformly distributed in the flour. Add the yeast, and rinse the yeast bowl with another cup of warm water. Add the rinsing to the flour. Add 1/2C more warm water, and stir to mix. If it is still too crumbly to make a moderately-stiff loaf, then add more water in 1/4C increments, or so, until you can start to knead the dough. If you make it too thin and sticky, then add more flour until the dough is suitable for kneading.

Turn out onto either a well-floured, or well-oiled surface for kneading. Knead by folding and turning, adding more oil, or more flour on your kneading surface, until you get a smooth, satiny dough. This could be from 15 minutes to 2 hours, depending on the gluten content of your dough, and whether it was sifted or includes the bran.

You are finished when a small piece of dough can be stretched out thin, like pizza dough, without breaking. This is also called the window-pane test, if you can stretch it enough to see some light come through the dough when holding it up to a light source. If you can't get it to this point after two hours of kneading, then go ahead and proceed with the rising and baking.

Put dough in a well-greased and floured pan. If you don't have a large loaf pan for French bread, then use a 3-quart square casserole dish or 10-12-inch round pizza pan. Cover and let rise in a warm place until doubled, or about 45-60 minutes. Bake at 325 degrees F for about 45 minutes, or until top is well-browned and hollow-sounding when tapped. If necessary, turn the oven temperature down the last 15 minutes, to ensure the middle of the bread is baked, without burning the top of the loaf.

Take out and cool on cooling racks.

Repeat for second loaf of bread, or, if you have room in your oven to make the second loaf at the same time, then just use the recipe for the larger amount below.

Recipe for the two loaves of bread:

6 tsp yeast
1 C water

hot water, 5-6 C
¼ C salt
1 1/3C olive oil (Try 1 C also)
16 C flour, plus more for kneading. Plan an extra 4-6 C more.

Soften yeast in 1 C of warm water. Let sit until bubbly. Combine flour, salt, and oil. Put in the softened yeast into the flour, and add 3 more C of water. Stir to mix. Add more water, or flour, until it makes a moderately stiff dough. Turn out on a well-oiled or well-floured table, if it is sticky. Knead until smooth and satiny, about 15 minutes, for well-sifted flour, or up to 2 hours for unsifted flour. It is finished being kneaded when a small ball of dough can be stretched thin enough to see some light through it, like pizza dough. This is called the window-pane test. If you can't get it to this stage after 2 hours of hand kneading, then just start letting it rise anyway. I have the best raised bread if I let it rise only once, so at this point I shape into two round loaves and put in 2- 3- quart greased and floured casserole dishes, or on 2 greased and floured 12" cookie sheets or pizza pans that have a small rim on them. Let rise until double, about an hour. Bake in a 325 degree F oven until golden brown, and top sounds hollow when you tap on it., about 45 minutes. If necessary, turn down the heat after about a half hour, to make sure the inside of the loaf gets done before the outside gets too dark.

Note: This bread was quite crumbly, and did not slice well until it was at least 1 day old. I may not have kneaded it enough, or else there is too much oil in with this recipe. Since the oil added was based on the unleavened bread recipe for the amount of oil, you may experiment around with adding less oil.

Rochelle A. Houser

1. Sifting and Measuring: Sift and Measure 8 C per loaf of bread. Make sure you have about 22C total, for kneading, and flouring pans.



2. **Measure out yeast and water:** 3 teaspoons yeast for 1 loaf, Softened in 1 C warm water. Let it get foamy before adding to flour mixture. Do step 3 while waiting. (Showing 1 loaf batch).
3. **Measure out flour, salt, and oil:** Measure out 8 C flour, ¾ C oil, and 1 tablespoon salt.



4. Mix flour, salt and oil until small dough balls appear uniformly throughout.
5. Add yeast to flour mixture.



6. Add 2 C water, or until you get a moderately stiff dough. Add more water, or flour to get to where you can knead the dough.



7. Knead on well-oiled, or lightly floured surface until sponge is smooth and satiny, and passes the “window pane test”. This is what the “window pane test” looks like



The window-pane test results will depend on how much gluten is in your flour, and how long you knead it. These are all acceptable results to stop kneading. Left bottom one is with very finely sifted whole wheat flour, until it was almost white, higher gluten flour. The other two are with unsifted, stone-ground wheat flour with a low gluten content.

8. Cover and let rest 5-10 minutes. Grease and flour your pan while you are waiting.

9. Transfer dough to pan. Cover, and let rise until double. (About 45 minutes). Wash dishes and clean off the table while you are waiting for it to rise. Preheat oven to 325 degrees F.



10. Bake at 325 degrees F for about 45 minutes, or until golden brown, and loaves are hollow-sounding when tapped.

11. Remove from oven, and cool on cooling racks. Enjoy!

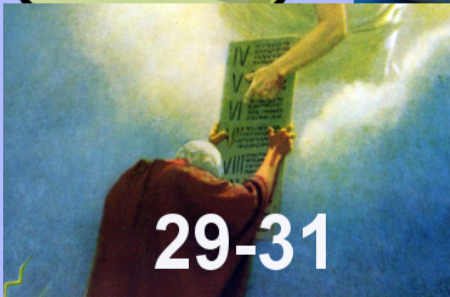
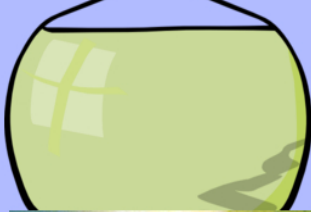
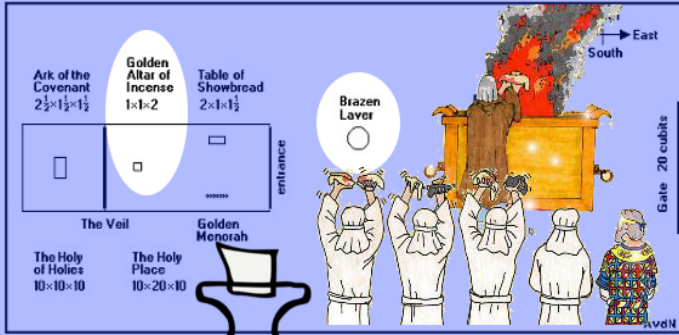




Unit EI

Exodus 29-31

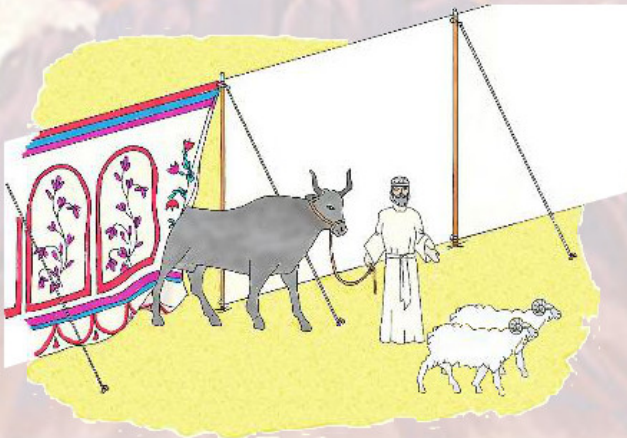
Bill and Shelley Houser
<http://www.ReadyAnswers.org>



Scripture taken from the Reina-Valera 1995 version.

Reina-Valera 95 © Sociedades Biblicas Unidas, 1995. Used by permission.

1



Consagración de Aarón y de sus hijos



Best guess at an interpretation of this is oven-baked unleavened bread.

Capítulo 29: ¹>>Esto es lo que les harás para consagrarlos, para que sean mis sacerdotes: Toma un becerro de la vacada y dos carneros sin defecto; Éxodo 29 : 1

²panes sin levadura,

Éxodo 29 : 2a



Best guess at an interpretation of this is deep-fat fried unleavened bread, like unleavened donuts,

Best guess at an interpretation of this is pan shallow-oil fried unleavened bread, like unleavened pancakes or tortillas.

tortas sin levadura amasadas con aceite Éxodo 29:2b

y hojaldres sin levadura untadas con aceite; Éxodo 29:2c

4

5



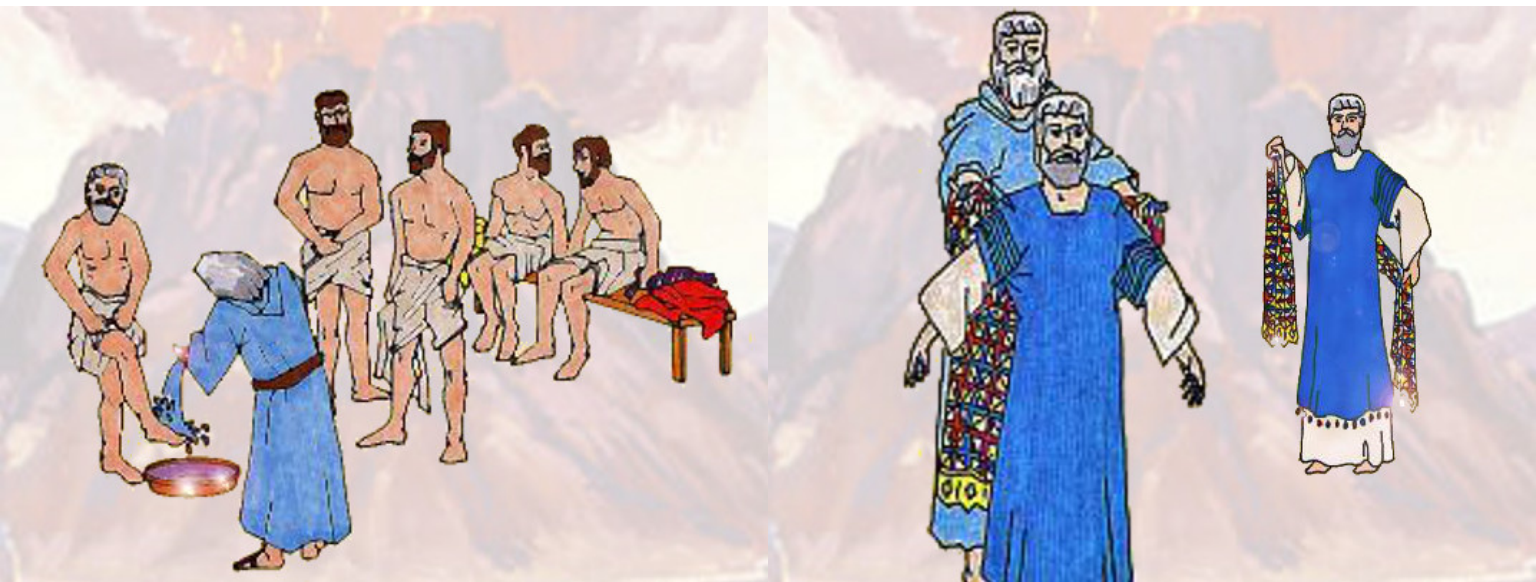
las harás de flor de harina de trigo. Éxodo 29:2d

³Las pondrás en un canastillo y en el canastillo las ofrecerás, con el becerro y los dos carneros.

Éxodo 29:3

6

7



⁴Llevarás a Aarón y a sus hijos a la puerta del Tabernáculo de reunión, donde los lavarás con agua. Éxodo 29 : 4

⁵Tomarás las vestiduras y vestirás a Aarón con la túnica, el manto del efod, el efod y el pectoral, y lo ceñirás con el cinto del efod; Éxodo 29 : 5

8

9



⁶pondrás la mitra sobre su cabeza, y sobre la mitra pondrás la diadema santa. ⁷Luego tomarás el aceite de la unción, lo derramarás sobre su cabeza y lo ungirás. Éxodo 29 : 6-7

⁸También harás que se acerquen sus hijos y los vestirás con las túnicas. ⁹Les ceñirás el cinto a Aarón y a sus hijos y les atarás las tias. Así consagrarás a Aarón y a sus hijos, y tendrán el sacerdocio por derecho perpetuo. Éxodo 29 : 8-9

10

11



¹⁰>>Después llevarás el becerro delante del Tabernáculo de reunión, y Aarón y sus hijos pondrán sus manos sobre la cabeza del becerro. ¹¹Luego matarás el becerro delante de Jehová, a la puerta del Tabernáculo de reunión.
Éxodo 29: 10-11

12



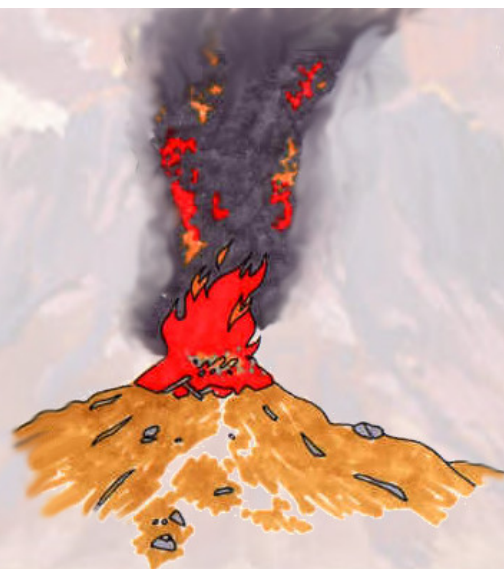
¹²Tomarás de la sangre del becerro, la pondrás sobre los cuernos del altar con tu dedo, y derramarás todo el resto de la sangre al pie del altar.
Éxodo 29: 12

13



¹³Tomarás también toda la grasa que cubre los intestinos, la grasa que está sobre el hígado, los dos riñones y la grasa que está sobre ellos, y lo quemarás sobre el altar.
Éxodo 29: 13

14



¹⁴Pero la carne del becerro, su piel y su estiércol, los quemarás al fuego fuera del campamento, pues es ofrenda por el pecado.
Éxodo 29: 14

15



15 >> Asimismo tomarás uno de los carneros, y Aarón y sus hijos pondrán sus manos sobre la cabeza del carnero.
Éxodo 29 : 15

16

16 Matarás el carnero, y rociarás su sangre en el altar, por todos sus lados.
Éxodo 29 : 16

17



17 Cortarás el carnero en pedazos, lavarás sus intestinos y sus piernas, y las pondrás sobre sus trozos y sobre su cabeza.
Éxodo 29 : 17

18

18 Después quemarás todo el carnero sobre el altar. Es holocausto de olor grato para Jehová; es ofrenda quemada a Jehová.
Éxodo 29 : 18

19



19 >> Tomarás luego el otro carnero, y Aarón y sus hijos pondrán sus manos sobre la cabeza del carnero.

Éxodo 29 : 19

20

20 Matarás el carnero, tomarás de su sangre y la pondrás sobre el lóbulo de la oreja derecha de Aarón, sobre el lóbulo de la oreja de sus hijos, sobre el dedo pulgar de sus manos derechas y sobre el dedo pulgar de sus pies derechos, y rociarás la sangre en el altar, por todos sus lados.

Éxodo 29 : 20

21



21 Con la sangre que estará sobre el altar, y el aceite de la unción, rociarás a Aarón, sus vestiduras, sus hijos y las vestiduras de estos. Así quedará santificado él y sus vestiduras, y con él sus hijos y las vestiduras de sus hijos.

Éxodo 29 : 21

22

22 >> Luego tomarás del carnero la grasa, la cola, la grasa que cubre los intestinos, la grasa del hígado, los dos riñones con la grasa que está sobre ellos, y la pierna derecha, porque es carnero de consagración.

Éxodo 29 : 22

23



²³ También una torta grande de pan, una torta de pan de aceite y una hojaldre del canastillo de los panes sin levadura presentado a Jehová. Éxodo 29 : 23

²⁴ Lo pondrás todo en las manos de Aarón y en las manos de sus hijos, y lo mecerás como ofrenda mecida delante de Jehová. Éxodo 29 : 24

24

25



²⁵ Después lo tomarás de sus manos y lo harás arder en el altar, junto con el holocausto, como olor grato delante de Jehová. Es ofrenda quemada a Jehová. Éxodo 29 : 25

²⁶ >> Tomarás el pecho del carnero de las consagraciones, que es de Aarón, y lo mecerás como ofrenda mecida delante de Jehová. Ésta será tu porción. ²⁷ Apartarás el pecho de la ofrenda mecida y la pierna de la ofrenda reservada, lo que fue mecido y lo que fue reservado del carnero de las consagraciones de Aarón y de sus hijos,

Éxodo 29 : 26-27

26

27



²⁸ pues será para Aarón y para sus hijos, según estatuto perpetuo dado a los hijos de Israel, porque es ofrenda reservada. Será una ofrenda reservada por los hijos de Israel de sus sacrificios de paz, una porción de ellos reservada como ofrenda a Jehová. Éxodo 29:28

28

²⁹ >>Las vestiduras santas de Aarón serán después de él para sus hijos, para que sean ungidos con ellas y consagrados con ellas. ³⁰ Durante siete días las vestirá aquel de sus hijos que tome su lugar como sacerdote, cuando venga al Tabernáculo de reunión para servir en el santuario. Éxodo 29:29-30

29



³¹ >>Tomarás el carnero de las consagraciones y cocerás su carne en un lugar santo. Éxodo 29:31

30

³² Aarón y sus hijos comerán la carne del carnero, y el pan que estará en el canastillo, a la puerta del Tabernáculo de reunión. ³³ Comerán aquellas cosas con las cuales se hizo expiación para ordenarlos y consagrarlos; pero el extraño no las comerá, porque son santas. Éxodo 29:32-33

31



34 Si sobra hasta la mañana algo de la carne de las consagraciones y del pan, quemarás al fuego lo que haya sobrado; no se comerá, porque es cosa santa.

Éxodo 29:34

35 >> Así, pues, harás a Aarón y a sus hijos conforme a todo lo que yo te he mandado; por siete días los consagrarás.

Éxodo 29:35

32

33



36 Cada día ofrecerás el becerro del sacrificio de expiación por el pecado; purificarás el altar cuando hagas expiación por él, y lo ungirás para santificarlo.

Éxodo 29:36

37 Durante siete días harás expiación por el altar y lo santificarás; será un altar santísimo: cualquier cosa que toque el altar quedará santificada.

Éxodo 29:37

34

35



Las ofrendas diarias



38 >> Esto es lo que ofrecerás sobre el altar: dos corderos de un año cada día, perpetuamente. Éxodo 29 : 38

39 Ofrecerás uno de los corderos por la mañana, y el otro cordero lo ofrecerás a la caída de la tarde. Éxodo 29 : 39



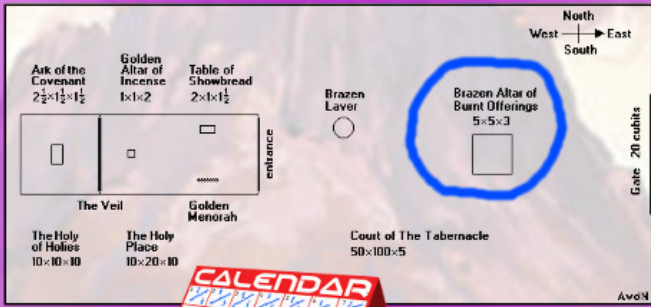
We think one-tenth of an ephah is about 1 US quart, and one-fourth of an Egyptian hin is 0.5 US Cup (see picture source).

40 Además, con cada cordero ofrecerás la décima parte de un efa de flor de harina amasada con la cuarta parte de un hin de aceite de olivas machacadas y, como libación, la cuarta parte de un hin de vino. Éxodo 29 : 40



41 A la caída de la tarde ofrecerás el otro cordero; harás conforme a la ofrenda de la mañana, y conforme a su libación, como olor grato de ofrenda quemada a Jehová. Éxodo 29 : 41

Notes: The bowl has 1 quart flour and 0.5 cup olive oil. When made into bread, it makes the amount shown for a morning or evening lamb (Numbers 28 : 1-5). It may be baked as unleavened bread or wafers, or cooked two different ways in oil: possibly either shallow-oil pan fried or deep-fat fried (Leviticus 2 : 1-7).



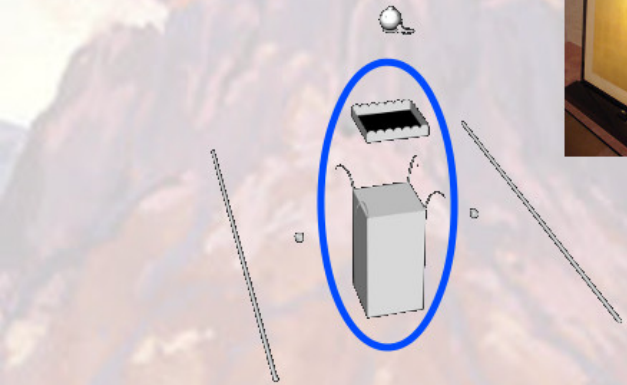
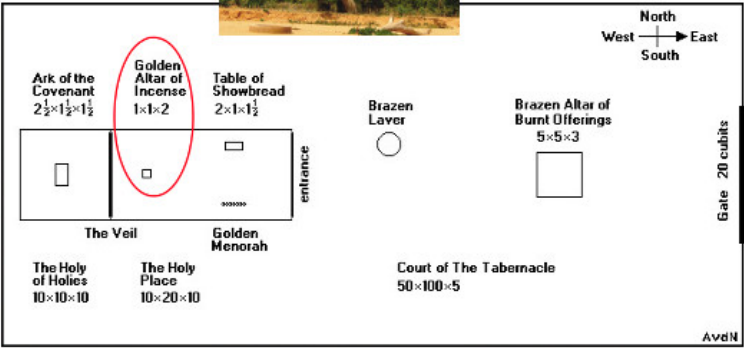
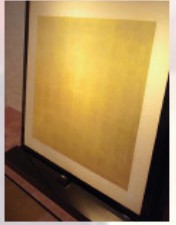
⁴² Esto será el holocausto perpetuo que todas vuestras generaciones ofrecerán a la puerta del Tabernáculo de reunión, delante de Jehová, en el cual me reuniré con vosotros, para hablaros allí. Éxodo 29 : 42

⁴³ Allí me reuniré con los hijos de Israel, y el lugar será santificado con mi gloria. ⁴⁴ Santificaré el Tabernáculo de reunión y el altar. Éxodo 29 : 43-44a



También santificaré a Aarón y a sus hijos, para que sean mis sacerdotes. Éxodo 29 : 44b

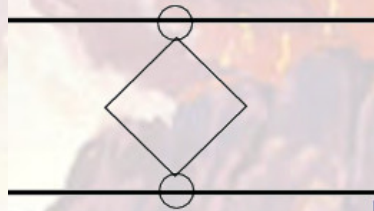
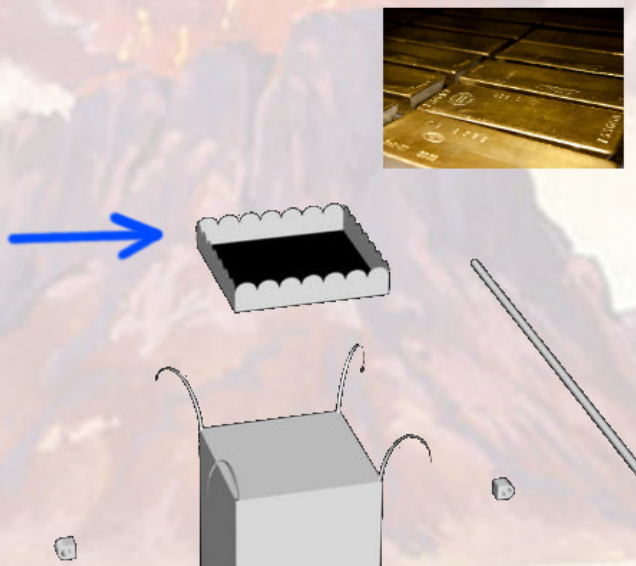
⁴⁵ Yo habitaré entre los hijos de Israel y seré su Dios. ⁴⁶ Así conocerán que yo soy Jehová, su Dios, que los saqué de la tierra de Egipto para habitar en medio de ellos. Yo, Jehová, su Dios. Éxodo 29 : 45-46



El altar del incienso

Capítulo 30: ¹>>Harás asimismo un altar para quemar el incienso; de madera de acacia lo harás. ²Su longitud será de un codo y su anchura de un codo; será cuadrado, y su altura de dos codos; Éxodo 30 : 1-2a

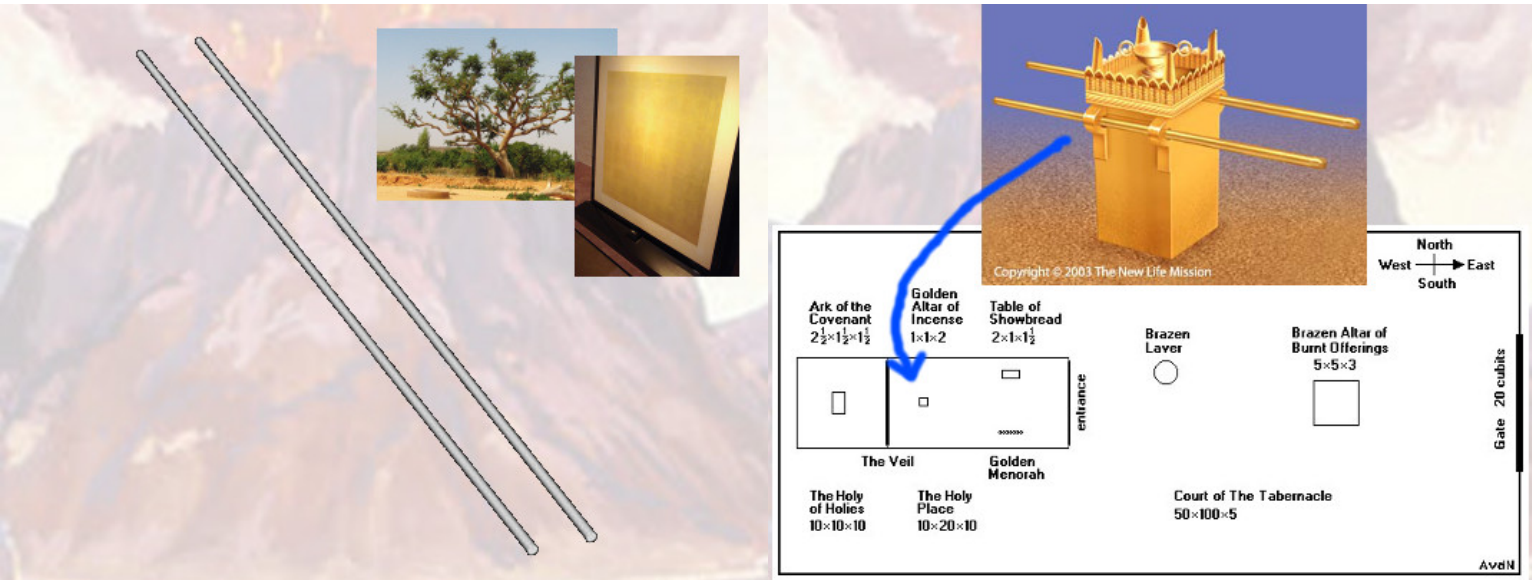
sus cuernos serán parte del mismo. ³Lo recubrirás de oro puro, su cubierta, sus costados y sus cuernos. Éxodo 30 : 2b-3a



Some artists depict two total rings for the alter. Some depict two on each side.

Le harás una cornisa de oro alrededor. Éxodo 30 : 3b

⁴Le harás también dos argollas de oro debajo de la cornisa, a sus dos esquinas y a ambos lados, para meter las varas con que será llevado. Éxodo 30 : 4



⁵Harás las varas de madera de acacia y las recubrirás de oro. Éxodo 30 : 5

⁶Después lo pondrás delante del velo que está junto al Arca del testimonio, delante del propiciatorio que está sobre el Testimonio, donde me encontraré contigo. Éxodo 30 : 6



⁷Cada mañana, al preparar las lámparas, Aarón quemará incienso aromático sobre él. Éxodo 30 : 7

⁸Cuando Aarón encienda las lámparas al anoecer, quemará también el incienso; y será rito perpetuo delante de Jehová para vuestras generaciones. Éxodo 30 : 8



⁹No ofreceréis sobre él incienso extraño ni holocausto ni ofrenda, ni tampoco derramaréis sobre él libación.

Éxodo 30:9

52

¹⁰Aarón hará expiación una vez al año sobre los cuernos del altar con la sangre del sacrificio, como expiación por el pecado; una vez al año hará expiación sobre él en vuestras sucesivas generaciones. Muy santo será a Jehová.>>

Éxodo 30:10

53



El dinero del rescate

¹¹Habló también Jehová a Moisés y le dijo: ¹²<<Cuando hagas un censo de los hijos de Israel conforme a su número, cada uno dará a Jehová el rescate de su persona al ser empadronado, para que no haya entre ellos mortandad a causa del censo.

Éxodo 30:11-12

54



Ancient and modern Israelite coins. Gerah is upper right. The sanctuary shekel may have been equal to the Egyptian *qedet* or “kite” (not shown) weighing 10.0g.

¹³Esto dará todo aquel que sea censado: medio siclo, conforme al siclo del santuario. El siclo es de veinte geras. La mitad de un siclo será la ofrenda reservada a Jehová.

Éxodo 30:13

55



Curtesy of Muzeum Lubelskie w Lublinie



14 Todo el que sea censado, de veinte años para arriba, dará la ofrenda a Jehová. Éxodo 30:14

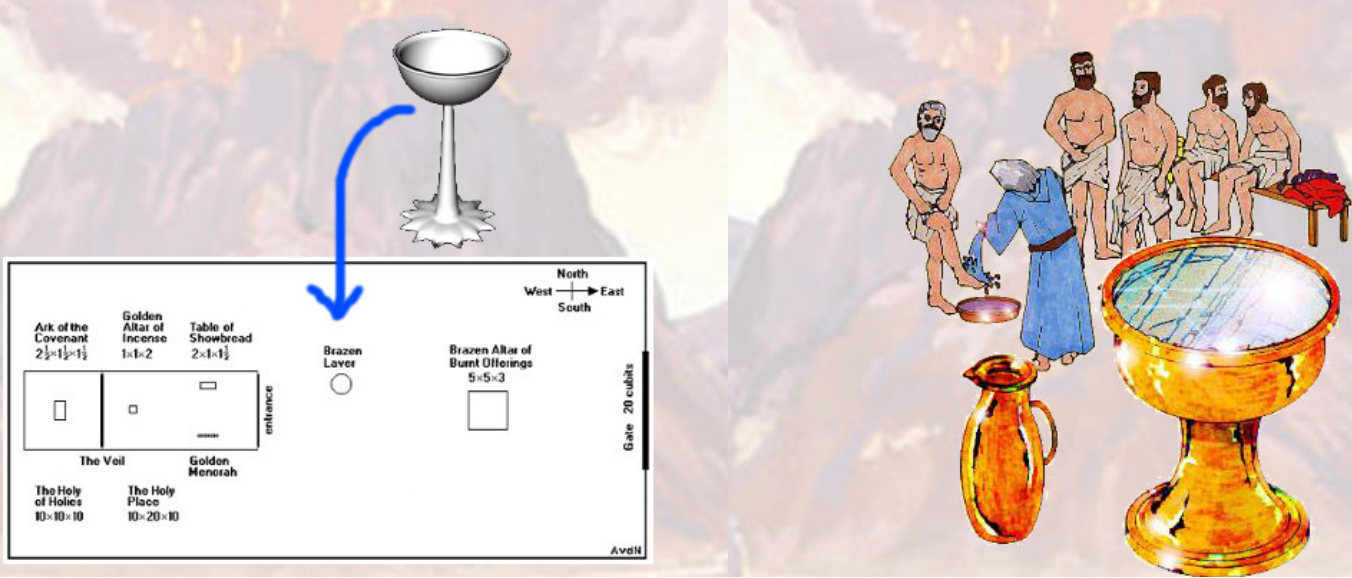
15 Ni el rico dará más ni el pobre dará menos del medio siclo, cuando den la ofrenda a Jehová para hacer expiación por vuestras personas. Éxodo 30:15



La fuente de bronce

16 Tomarás de los hijos de Israel el dinero de las expiaciones y lo darás para el servicio del Tabernáculo de reunión; y será como un memorial para los hijos de Israel delante de Jehová, para hacer expiación por vuestras personas. >> Éxodo 30:16

17 Continuó hablando Jehová a Moisés, y le dijo: 18 <<Harás también una fuente de bronce, con su base de bronce, para lavarse. Éxodo 30:17-18a



La colocarás entre el Tabernáculo de reunión y el altar,
Éxodo 30 : 18b

y pondrás en ella agua. ¹⁹En ella se lavarán Aarón y sus hijos las manos y los pies. Éxodo 30 : 18c-19

60

61



²⁰ Cuando entren en el Tabernáculo de reunión, se lavarán con agua, para que no mueran, y cuando se acerquen al altar para ministrar y presentar la ofrenda quemada para Jehová, Éxodo 30 : 20

Before the Last Supper, Jesus washed his disciples' feet and commanded them to do likewise. See John 13 : 14. When they followed this instruction, their hands would have also been washed.

²¹ se lavarán las manos y los pies, para que no mueran. Y lo tendrán por estatuto perpetuo él y su descendencia a través de las generaciones.>> Éxodo 30 : 21

62

63



El aceite y el incienso sagrados

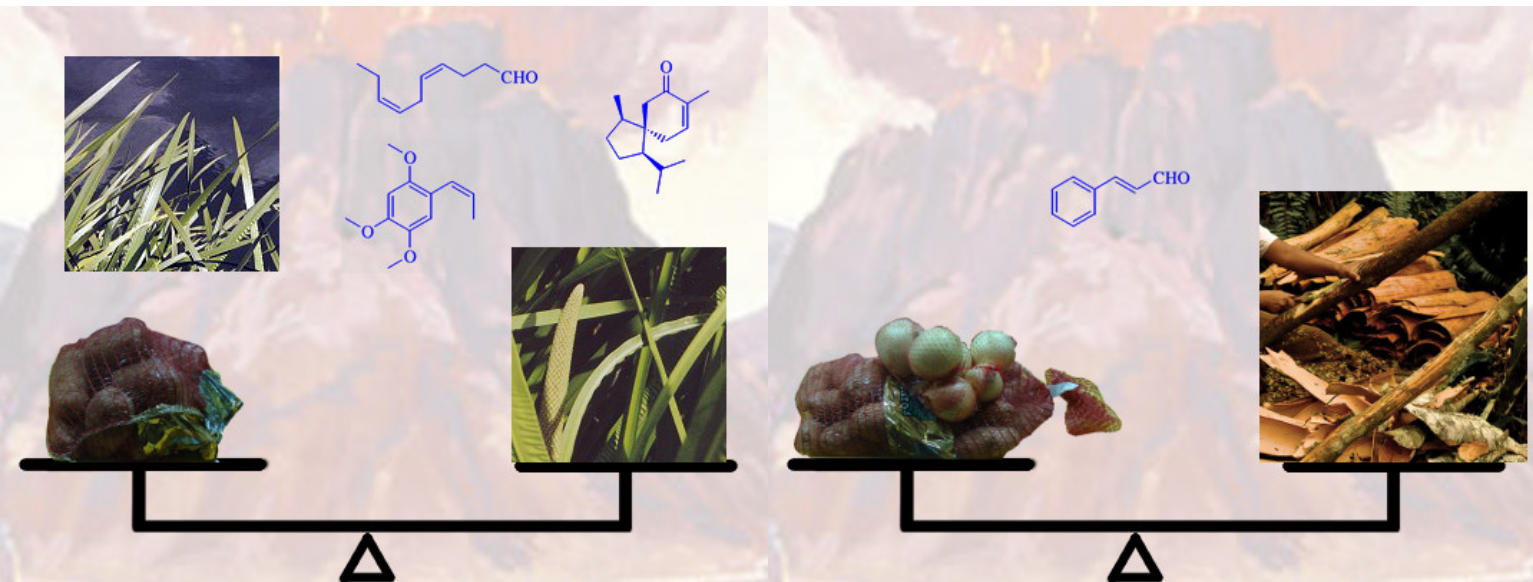
22 Continuó hablando Jehová a Moisés, y le dijo:
 23 <<Tomarás especias finas: de mirra excelente,
 quinientos siclos, Éxodo 30 : 22-23a

Notes: Myrrh has a sweet-woody odour. Convertme.com estimates 500 shekels to be 12.5 pounds or 5.6 kg. This is about the weight of a 10-pound bag of potatoes plus the weight of a 2.5 pound bag of onions. The incense and anointing oil components in this book are based on wikipedia-estimated definitions.

de canela aromática, la mitad, esto es, doscientos cincuenta;

Éxodo 30 : 23b

Notes: True cinnamon can smell like cinnamon, or clove, or camphor. Convertme.com estimates 250 shekels to be 6.25 pounds or 2.8 kg



Other translations say "calamus". Calmus is pictured here.

de cálamo aromático, doscientos cincuenta; Éxodo 30 : 23c

Notes: Calmus has an attractive, spicy-aromatic character and has been used in perfumes of the so-called Chypre type.

An Egyptian hin during both the old kingdom and new kingdom was 2 USA cups or 1 USA pint.

24 de casia, quinientos, según el siclo del santuario, Éxodo 30 : 24a

Notes: Cassia is what is normally sold as ground cinnamon in the US. Five hundred shekels is about 12.5 pounds or 5.6 kg. It smells like the cinnamon that is sold in the United States. Cinnamaldehyde is the main component, which is one of the components of true cinnamon.



An Egyptian hin is 2 US Cups or 1 US pint.

y de aceite de olivas, un hin.

Éxodo 30:24b

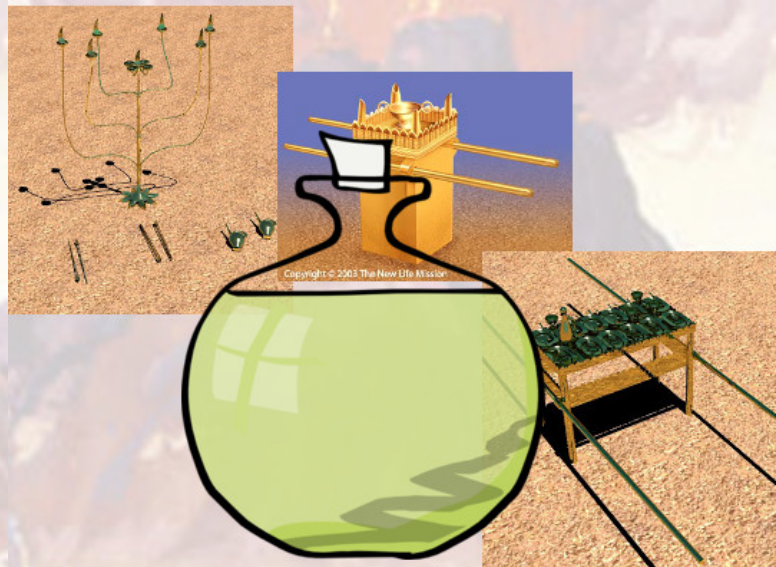


Reliefs on the walls of the tomb of Petosiris, who lived during the early Ptolemaic period, depict some of the aspects of perfume making. Some forms of mechanical and chemical extraction are shown here.

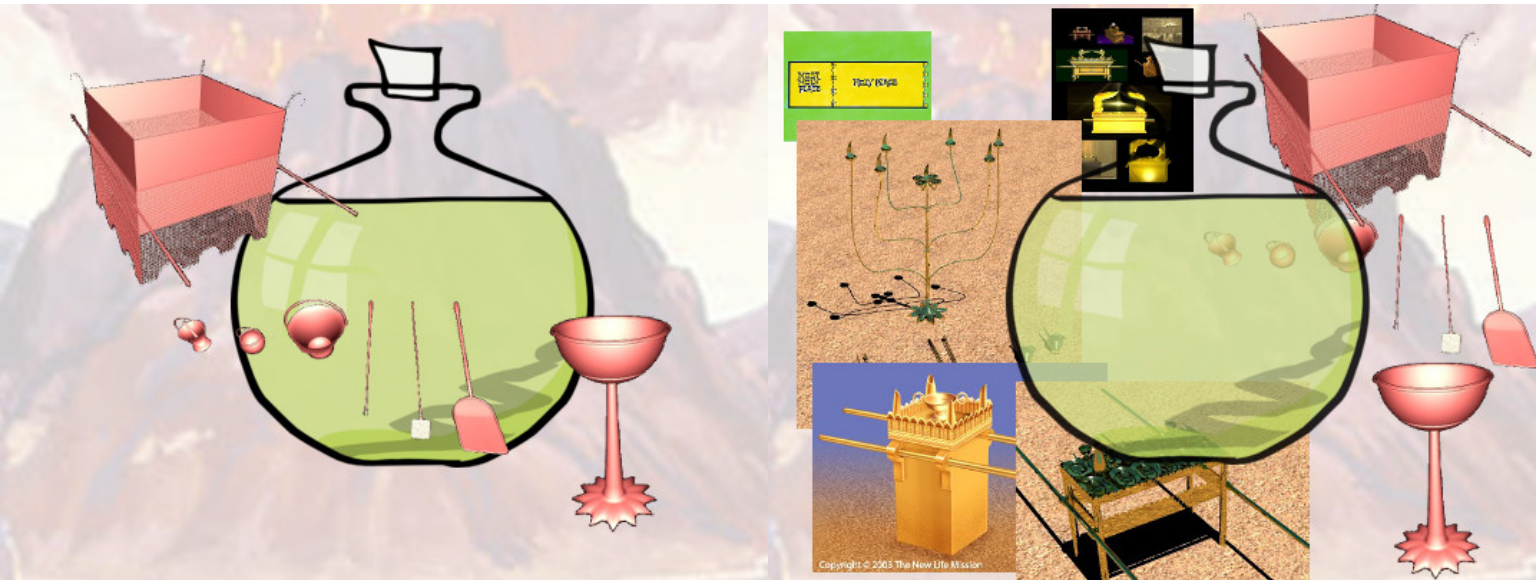
25 Prepararás con ello el aceite de la santa unción, un unguento superior, preparado según el arte del perfumista. Éste será el aceite de la unción santa. Éxodo 30:25



26 Con él ungrás el Tabernáculo de reunión, el Arca del testimonio, Éxodo 30:26



27 la mesa con todos sus utensilios, el candelabro con todos sus utensilios, el altar del incienso, Éxodo 30:27



28 el altar del holocausto con todos sus utensilios, y la fuente con su base. Éxodo 30:28

29 Así los consagrarás, y serán cosas santísimas; todo aquello que los toque será santificado. Éxodo 30:29

72

73

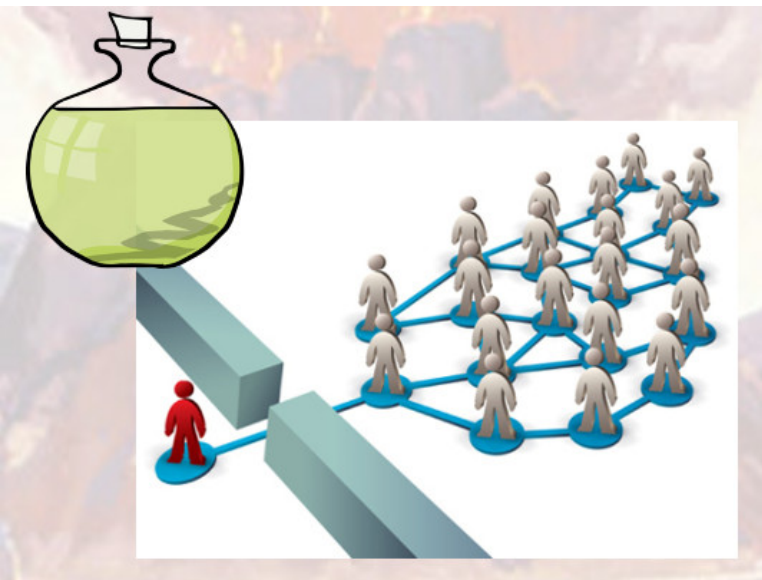


30 >>Ungirás también a Aarón y a sus hijos, y los consagrarás para que sean mis sacerdotes. Éxodo 30:30

31 Hablarás a los hijos de Israel, y les dirás: “Éste será el aceite de la santa unción para vuestras generaciones. Éxodo 30:31

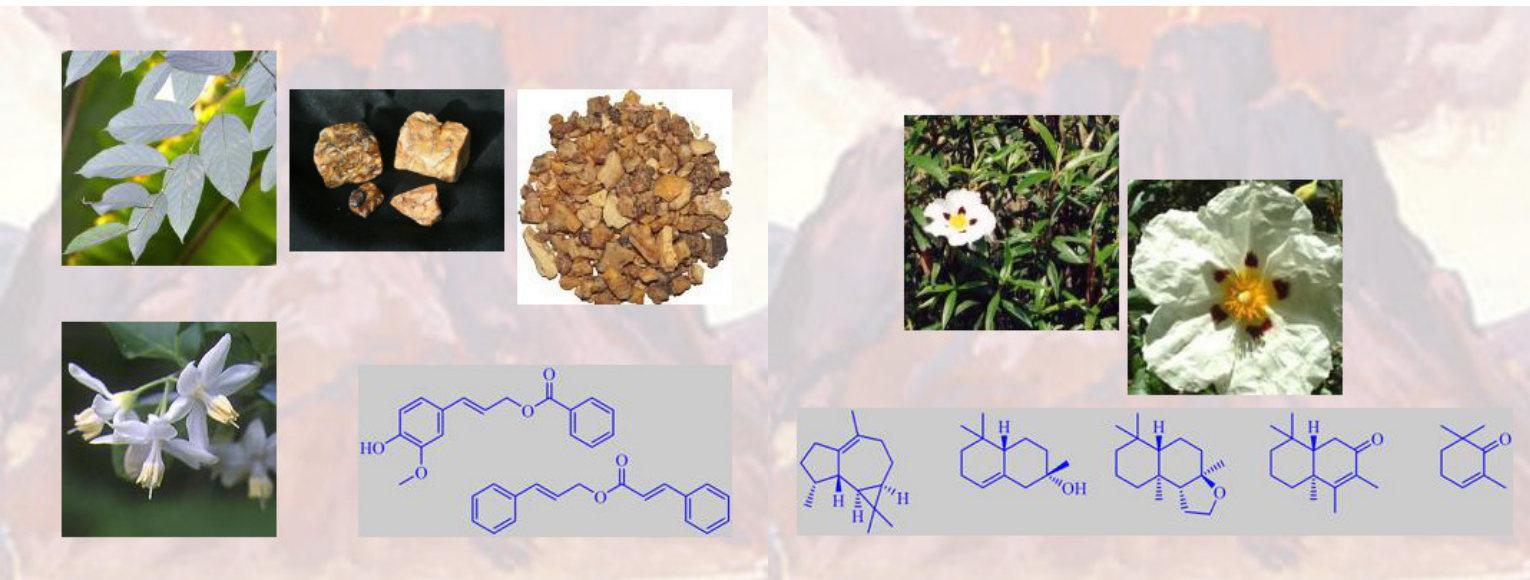
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75



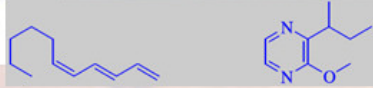
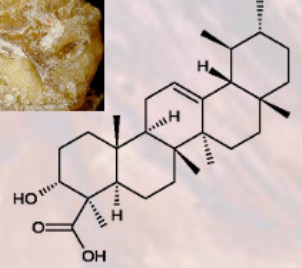
32 Sobre carne de hombre no será derramado, ni haréis otro semejante conforme a su composición; santo es, y por santo lo tendréis vosotros. Éxodo 30:32

33 Cualquiera que componga un unguento semejante o ponga de él sobre algún extraño, será eliminado de su pueblo.”>> Éxodo 30:33



34 Dijo además Jehová a Moisés: <<Toma especias aromáticas, estacte Éxodo 30:34a Notes: The incense spices shown in this book are scholars’ best guesses, but their true identities are uncertain. Stacte may be benzoin. Benzoin gum siam has a pleasant, sweet-balsamic odour with a distinct note of vanilla, whereas benzoin gum Sumatra has a strong odour like styrene.

y uña aromática, Éxodo 30:34b Note: Labdanum has a warm, sweet-resinous, woody-ambery odour. Other possible candidates include clove and spikenard.



gálbano aromático

Notes: Galbanum smells like pea pods.

Éxodo 30 : 34c

e incienso puro;

Notes: Frankincense smells like a balsamic-spicy, slightly lemon, fragrance of incense, with a conifer-like undertone.

Éxodo 30 : 34d



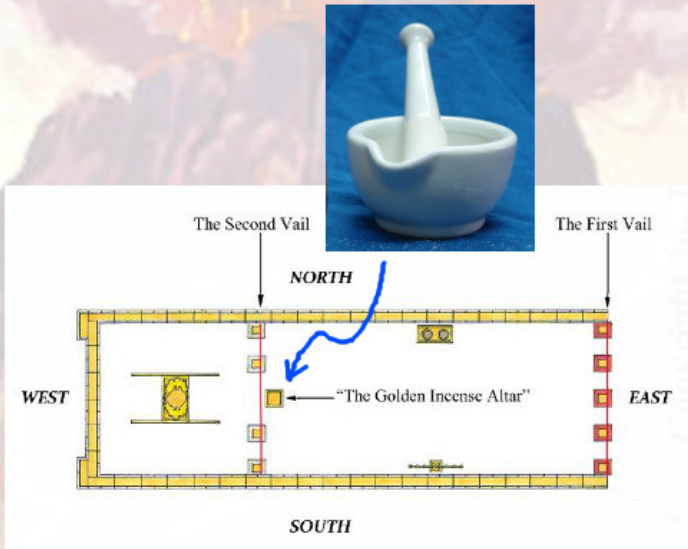
todo en cantidades iguales,

Éxodo 30 : 34e

³⁵y harás con ello, según el arte del perfumador, un incienso perfumado, bien mezclado, puro y santo.

Éxodo 30 : 35

Notes: The Talmud lists several other spices and ingredients that would be necessary to extract, stabilize and preserve this incense. Some of the best guesses for these spices are listed here. Spikenard smells like stinky feet. Costus smells like wet dog.



³⁶ Molerás parte de él en polvo fino y lo pondrás delante del Testimonio en el Tabernáculo de reunión, donde yo me mostraré a ti. Os será cosa santísima. Éxodo 30:36

³⁷ Como este incienso que harás, no os haréis otro según su composición; te será cosa sagrada para Jehová. Éxodo 30:37



Llamamiento de Bezaleel y de Aholiab

³⁸ Cualquiera que haga otro como éste para olerlo, será eliminado de su pueblo.>> Éxodo 30:38

Capítulo 31: ¹ Habló Jehová a Moisés y le dijo: ² <<Mira, yo he llamado por su nombre a Bezaleel hijo de Uri hijo de Hur, de la tribu de Judá, ³ y lo he llenado del espíritu de Dios, en sabiduría y en inteligencia, en ciencia y en todo arte, Éxodo 31:1-3



⁴para inventar diseños, para trabajar en oro, en plata y en bronce,
Éxodo 31 : 4



⁵para labrar piedras y engastarlas,
Éxodo 31 : 5a



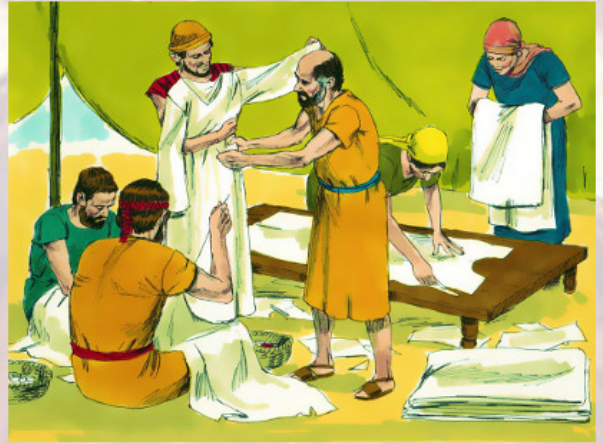
tallar madera y trabajar en toda clase de labor.
Éxodo 31 : 5b



⁶He puesto junto a él a Aholiab hijo de Ahisamac, de la tribu de Dan, y he puesto sabiduría en el ánimo de todo sabio de corazón, para que hagan todo lo que te he mandado:
Éxodo 31 : 6



Picture used with permission: (c)2006 www.TheGloryStory.com



⁷el Tabernáculo de reunión, el Arca del testimonio, el propiciatorio que está sobre ella y todos los utensilios del Tabernáculo; ⁸la mesa y sus utensilios, el candelabro de oro puro con todos sus utensilios, el altar del incienso, ⁹el altar del holocausto y todos sus utensilios, la fuente y su base,
 Éxodo 31:7-9

¹⁰los vestidos del servicio, las vestiduras santas para Aarón, el sacerdote, las vestiduras de sus hijos para que ejerzan el sacerdocio,
 Éxodo 31:10



St.Takla.org



¹¹el aceite de la unción y el incienso aromático para el santuario. Ellos harán conforme a todo lo que te he mandado.>>
 Éxodo 31:11

La celebración del sábado. “Sanctify” is Strong’s number 6942: A primitive root; to be clean.

¹²Continuó hablando Jehová a Moisés, y le dijo: ¹³<<Tú hablarás a los hijos de Israel y les dirás: “En verdad vosotros guardaréis mis sábados, porque es una señal entre mí y vosotros por vuestras generaciones, para que sepáis que yo soy Jehová que os santifico. Éxodo 31:12-13



14 Así que guardaréis el sábado, porque santo es para vosotros; el que lo profane, de cierto morirá.
Éxodo 31 : 14a

Cualquier persona que haga alguna obra en él, será eliminada de su pueblo.
Éxodo 31 : 14b



15 Seis días se trabajará, pero el día séptimo es día de descanso consagrado a Jehová.
Éxodo 31 : 15a

Cualquiera que trabaje en sábado, ciertamente morirá.”
Éxodo 31 : 15b



¹⁶ Guardarán, pues, el sábado los hijos de Israel, celebrándolo a lo largo de sus generaciones como un pacto perpetuo. Éxodo 31 : 16

100

¹⁷ Para siempre será una señal entre mí y los hijos de Israel, porque en seis días hizo Jehová los cielos y la tierra, y en el séptimo día cesó y descansó.>> Éxodo 31 : 17

101

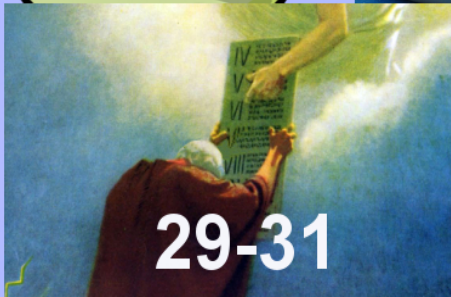
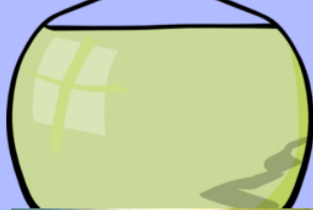
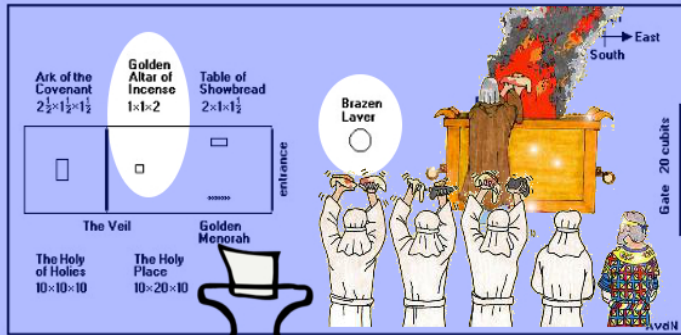


El becerro de oro

¹⁸ Y dio a Moisés, cuando acabó de hablar con él en el monte Sinaí, dos tablas del Testimonio, tablas de piedra escritas por el dedo de Dios. Éxodo 31 : 18

102

103



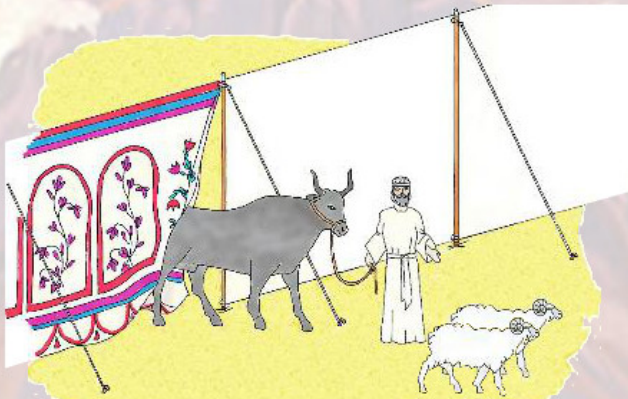
Unit EI

Exodus 29-31

Bill and Shelley Houser
<http://www.ReadyAnswers.org>

Scripture taken from the Louis Segond (LSG) translation.

1



Aaron and His Sons Consecrated



Chapitre 29: ¹ Voici ce que tu feras pour les sanctifier, afin qu'ils soient à mon service dans le sacerdoce. Prends un jeune taureau et deux béliers sans défaut. Exode 29 : 1

² Fais, avec de la fleur de farine de froment, Exode 29 : 2a



Best guess at an interpretation of this is oven-baked unleavened bread.

des pains sans levain,

Exode 29 : 2b

4



Best guess at an interpretation of this is deep-fat fried unleavened bread, like unleavened donuts,

des gâteaux sans levain pétris à l'huile,

Exode 29 : 2c

5



Best guess at an interpretation of this is pan shallow-oil fried unleavened bread, like unleavened pancakes or tortillas.

et des galettes sans levain arrosées d'huile.

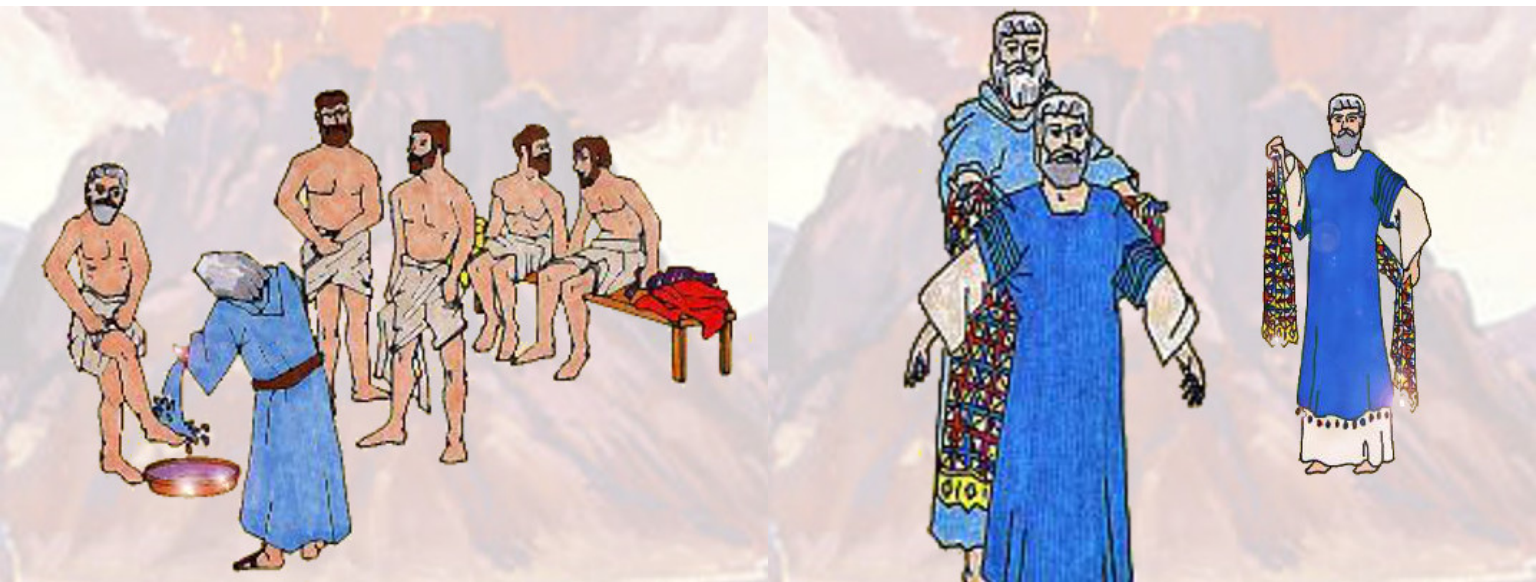
Exode 29 : 2d

6



³Tu les mettras dans une corbeille, en offrant le jeune taureau et les deux béliers. Exode 29 : 3

7



⁴Tu feras avancer Aaron et ses fils vers l'entrée de la tente d'assignation, et tu les laveras avec de l'eau.

Exode 29 : 4

8

⁵Tu prendras les vêtements; tu revêtiras Aaron de la tunique, de la robe de l'éphod, de l'éphod et du pectoral, et tu mettras sur lui la ceinture de l'éphod.

Exode 29 : 5

9



⁶Tu poseras la tiare sur sa tête, et tu placeras le diadème de sainteté sur la tiare. ⁷Tu prendras l'huile d'onction, tu en répandras sur sa tête, et tu l'oindras.

Exode 29 : 6-7

10

⁸Tu feras approcher ses fils, et tu les revêtiras des tuniques.

⁹Tu mettras une ceinture à Aaron et à ses fils, et tu attacheras des bonnets aux fils d'Aaron. Le sacerdoce leur appartiendra par une loi perpétuelle. Tu consacreras donc Aaron et ses fils.

Exode 29 : 8-9

11



¹⁰Tu amèneras le taureau devant la tente d'assignation, et Aaron et ses fils poseront leurs mains sur la tête du taureau. ¹¹Tu égorgeras le taureau devant l'Éternel, à l'entrée de la tente d'assignation. Exode 29 : 10-11

12



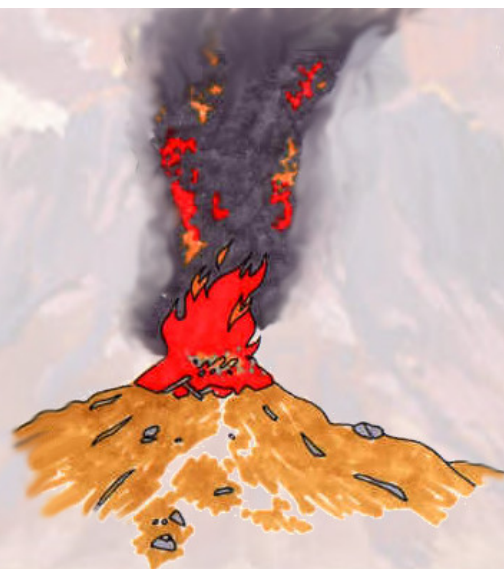
¹²Tu prendras du sang du taureau, tu en mettras avec ton doigt sur les cornes de l'autel, et tu répandras tout le sang au pied de l'autel. Exode 29 : 12

13



¹³Tu prendras toute la graisse qui couvre les entrailles, le grand lobe du foie, les deux rognons et la graisse qui les entoure, et tu brûleras cela sur l'autel. Exode 29 : 13

14



¹⁴Mais tu brûleras au feu hors du camp la chair du taureau, sa peau et ses excréments: c'est un sacrifice pour le péché. Exode 29 : 14

15



¹⁵Tu prendras l'un des béliers, et Aaron et ses fils poseront leurs mains sur la tête du bœlier. Exode 29 : 15

16

¹⁶Tu égorgeras le bœlier; tu en prendras le sang, et tu le répandras sur l'autel tout autour. Exode 29 : 16

17



¹⁷Tu couperas le bœlier par morceaux, et tu laveras les entrailles et les jambes, que tu mettras sur les morceaux et sur sa tête. Exode 29 : 17

18

¹⁸Tu brûleras tout le bœlier sur l'autel; c'est un holocauste à l'Éternel, c'est un sacrifice consumé par le feu, d'une agréable odeur à l'Éternel. Exode 29 : 18

19



¹⁹Tu prendras l'autre bélier, et Aaron et ses fils poseront leurs mains sur la tête du bélier. Exode 29 : 19

20



²⁰Tu égorgeras le bélier; tu prendras de son sang, tu en mettras sur le lobe de l'oreille droite d'Aaron et sur le lobe de l'oreille droite de ses fils, sur le pouce de leur main droite et sur le gros orteil de leur pied droit, et tu répandras le sang sur l'autel tout autour. Exode 29 : 20

21



²¹Tu prendras du sang qui sera sur l'autel et de l'huile d'onction, et tu en feras l'aspersion sur Aaron et sur ses vêtements, sur ses fils et sur leurs vêtements. Ainsi seront consacrés Aaron et ses vêtements, ses fils et leurs vêtements. Exode 29 : 21

22



²²Tu prendras la graisse du bélier, la queue, la graisse qui couvre les entrailles, le grand lobe du foie, les deux rognons et la graisse qui les entoure, et l'épaule droite, car c'est un bélier de consécration; Exode 29 : 22

23



²³ tu prendras aussi dans la corbeille de pains sans levain, placée devant l'Éternel, un gâteau de pain, un gâteau à l'huile et une galette. Exode 29 : 23

24



²⁴ Tu mettras toutes ces choses sur les mains d'Aaron et sur les mains de ses fils, et tu les agiteras de côté et d'autre devant l'Éternel. Exode 29 : 24

25



²⁵ Tu les ôteras ensuite de leurs mains, et tu les brûleras sur l'autel, par-dessus l'holocauste; c'est un sacrifice consommé par le feu devant l'Éternel, d'une agréable odeur à l'Éternel. Exode 29 : 25

26



²⁶ Tu prendras la poitrine du bœuf qui aura servi à la consécration d'Aaron, et tu l'agiteras de côté et d'autre devant l'Éternel: ce sera ta portion. ²⁷ Tu sanctifieras la poitrine et l'épaule du bœuf qui aura servi à la consécration d'Aaron et de ses fils, la poitrine en l'agitant de côté et d'autre, l'épaule en la présentant par élévation. Exode 29 : 26-27

27



²⁸ Elles appartiendront à Aaron et à ses fils, par une loi perpétuelle qu'observeront les enfants d'Israël, car c'est une offrande par élévation; et, dans les sacrifices d'actions de grâces des enfants d'Israël, l'offrande par élévation sera pour l'Éternel.

Exode 29 : 28

28



²⁹ Les vêtements sacrés d'Aaron seront après lui pour ses fils, qui les mettront lorsqu'on les oindra et qu'on les consacrera. ³⁰ Ils seront portés pendant sept jours par celui de ses fils qui lui succédera dans le sacerdoce, et qui entrera dans la tente d'assignation, pour faire le service dans le sanctuaire.

Exode 29 : 29–30

29



³¹ Tu prendras le bélier de consécration, et tu en feras cuire la chair dans un lieu saint.

Exode 29 : 31

30



³² Aaron et ses fils mangeront, à l'entrée de la tente d'assignation, la chair du bélier et le pain qui sera dans la corbeille. ³³ Ils mangeront ainsi ce qui aura servi d'expiation afin qu'ils fussent consacrés et sanctifiés; nul étranger n'en mangera, car ce sont des choses saintes.

Exode 29 : 32–33

31



The Daily Offerings



38 Voici ce que tu offriras sur l'autel: deux agneaux d'un an, chaque jour, à perpétuité.

Exode 29 : 38

36

39 Tu offriras l'un des agneaux le matin, et l'autre agneau entre les deux soirs.

Exode 29 : 39

37



We think one-tenth of an ephah is about 1 US quart, and one-fourth of an Egyptian hin is 0.5 US Cup (see picture source).

40 Tu offriras, avec le premier agneau, un dixième d'épha de fleur de farine pétrie dans un quart de hin d'huile d'olives concassées, et une libation d'un quart de hin de vin.

Exode 29 : 40

38

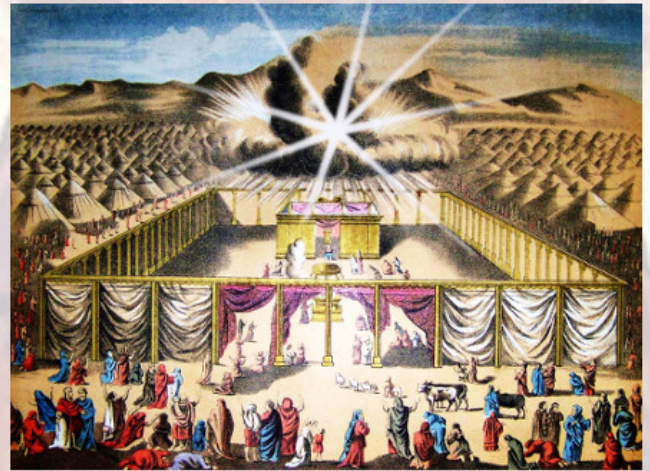
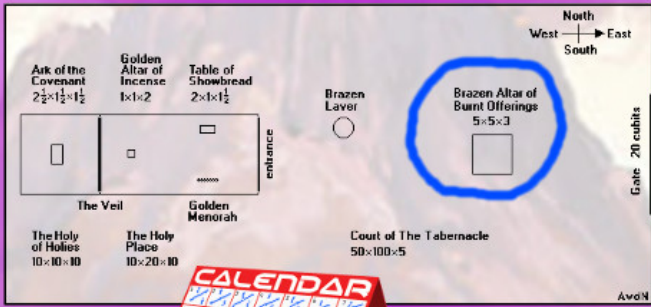


41 Tu offriras le second agneau entre les deux soirs, avec une offrande et une libation semblables à celles du matin; c'est un sacrifice consommé par le feu, d'une agréable odeur à l'Éternel.

Exode 29 : 41

Notes: The bowl has 1 quart flour and 0.5 cup olive oil. When made into bread, it makes the amount shown for a morning or evening lamb (Numbers 28: 1-5), it may be baked as unleavened bread or wafers, or cooked two different ways in oil: possibly either shallow-oil pan fried or deep-fat fried (Leviticus 2: 1-7).

39



⁴² Voilà l'holocauste perpétuel qui sera offert par vos descendants, à l'entrée de la tente d'assignation, devant l'Éternel: c'est là que je me rencontrerai avec vous, et que je te parlerai. Exode 29 : 42

⁴³ Je me rencontrerai là avec les enfants d'Israël, et ce lieu sera sanctifié par ma gloire. ⁴⁴ Je sanctifierai la tente d'assignation et l'autel; Exode 29 : 43-44a

40

41

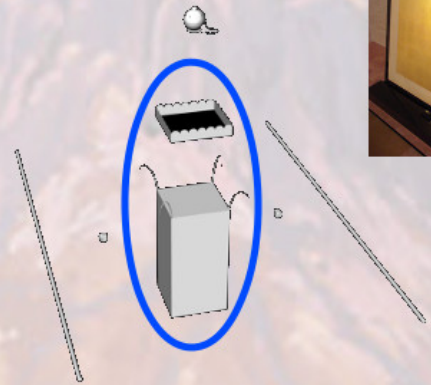
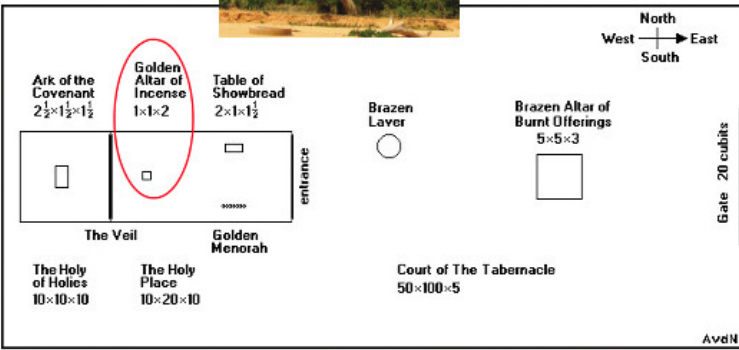
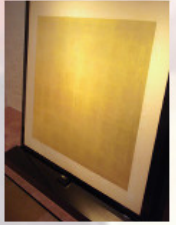


je sanctifierai Aaron et ses fils, pour qu'ils soient à mon service dans le sacerdoce. Exode 29 : 44b

⁴⁵ J'habiterai au milieu des enfants d'Israël, et je serai leur Dieu. ⁴⁶ Ils connaîtront que je suis l'Éternel, leur Dieu, qui les ai fait sortir du pays d'Égypte, pour habiter au milieu d'eux. Je suis l'Éternel, leur Dieu. Exode 29 : 45-46

42

43



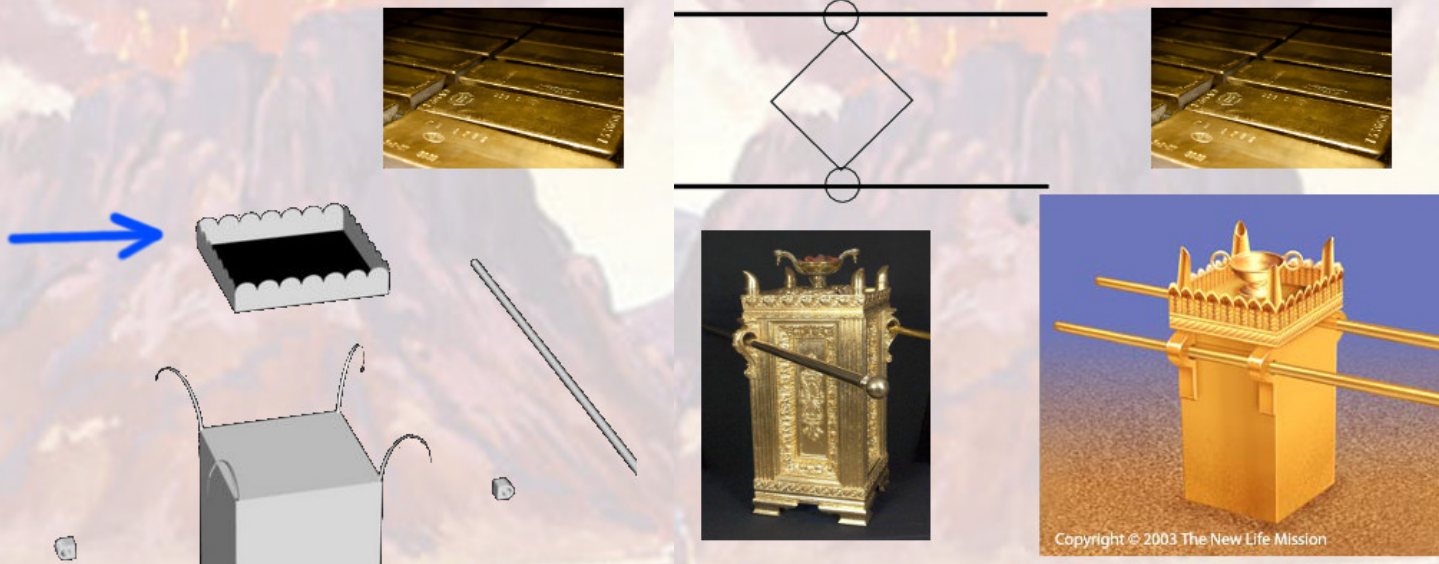
The Altar of Incense

Chapitre 30: ¹Tu feras un autel pour brûler des parfums, tu le feras de bois d'acacia; ²sa longueur sera d'une coudée, et sa largeur d'une coudée; il sera carré, et sa hauteur sera de deux coudées. Exode 30 : 1-2a

Tu feras des cornes qui sortiront de l'autel. ³Tu le couvriras d'or pur, le dessus, les côtés tout autour et les cornes, Exode 30 : 2b-3a

44

45



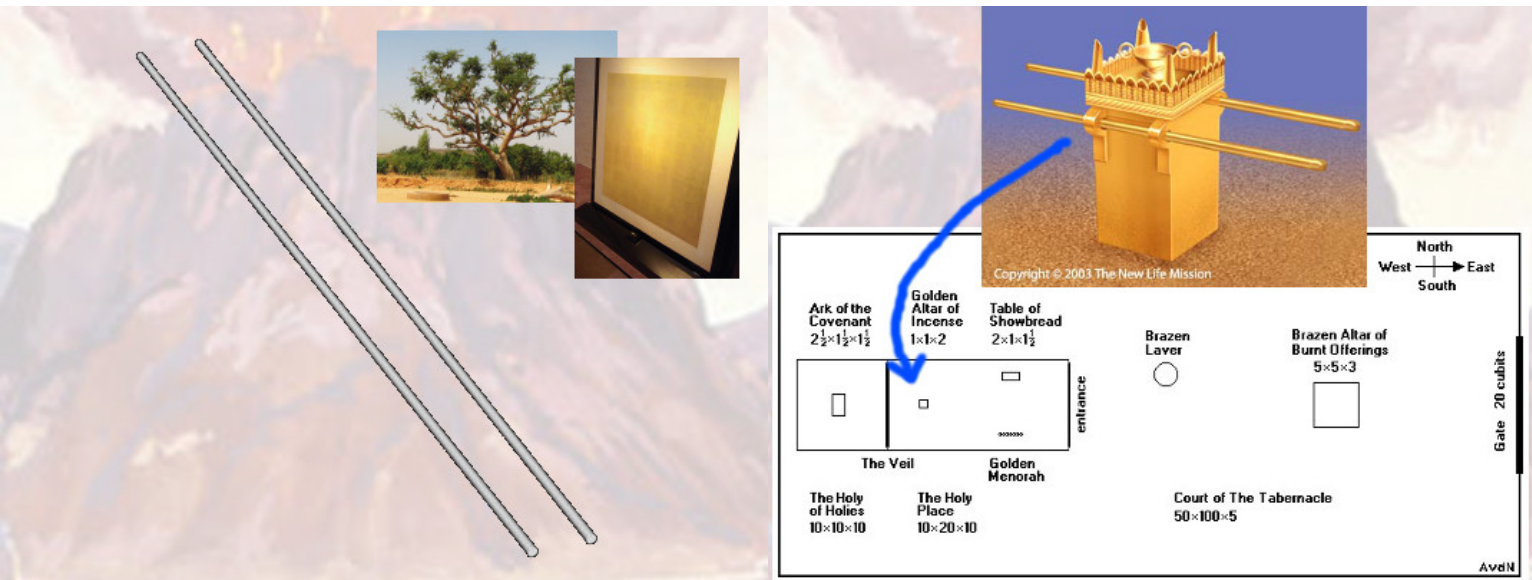
Some artists depict two total rings for the alter. Some depict two on each side.

et tu y feras une bordure d'or tout autour. Exode 30 : 3b

⁴Tu feras au-dessous de la bordure deux anneaux d'or aux deux côtés; tu en mettras aux deux côtés, pour recevoir les barres qui serviront à le porter. Exode 30 : 4

46

47



⁵Tu feras les barres de bois d'acacia, et tu les couvriras d'or.
Exode 30 : 5

48

⁶Tu placeras l'autel en face du voile qui est devant l'arche du témoignage, en face du propitiatoire qui est sur le témoignage, et où je me rencontrerai avec toi.
Exode 30 : 6

Exode 30 : 6

49



⁷Aaron y fera brûler du parfum odoriférant; il en fera brûler chaque matin, lorsqu'il préparera les lampes;
Exode 30 : 7

50

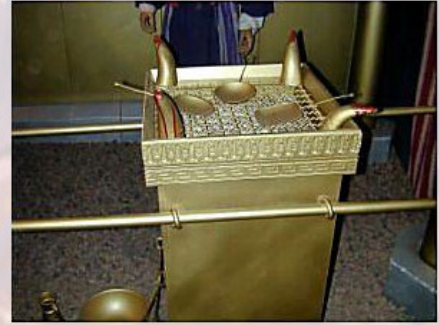
⁸il en fera brûler aussi entre les deux soirs, lorsqu'il arrangera les lampes. C'est ainsi que l'on brûlera à perpétuité du parfum devant l'Éternel parmi vos descendants.
Exode 30 : 8

51



⁹ Vous n’offrirez sur l’autel ni parfum étranger, ni holocauste, ni offrande, et vous n’y répandrez aucune libation.
Exode 30 : 9

52



¹⁰ Une fois chaque année, Aaron fera des expiations sur les cornes de l’autel; avec le sang de la victime expiatoire, il y sera fait des expiations une fois chaque année parmi vos descendants. Ce sera une chose très sainte devant l’Éternel.
Exode 30 : 10

53



The Ransom Money

¹¹ L’Éternel parla à Moïse, et dit: ¹² Lorsque tu compteras les enfants d’Israël pour en faire le dénombrement, chacun d’eux paiera à l’Éternel le rachat de sa personne, afin qu’ils ne soient frappés d’aucune plaie lors de ce dénombrement.
Exode 30 : 11–12

54



Ancient and modern Israelite coins. Gerah is upper right. The sanctuary shekel may have been equal to the Egyptian *qedet* or “kite” (not shown) weighing 10.0g.

¹³ Voici ce que donneront tous ceux qui seront compris dans le dénombrement: un demi-sicle, selon le sicle du sanctuaire, qui est de vingt guéras; un demi-sicle sera le don prélevé pour l’Éternel.
Exode 30 : 13

55



Courtesy of Muzeum Lubelskie w Lublinie



¹⁴Tout homme compris dans le dénombrement, depuis l'âge de vingt ans et au-dessus, paiera le don prélevé pour l'Éternel.

Exode 30 : 14

56

¹⁵Le riche ne paiera pas plus, et le pauvre ne paiera pas moins d'un demi-sicle, comme don prélevé pour l'Éternel, afin de racheter leurs personnes.

Exode 30 : 15

57



The Bronze Laver

¹⁶Tu recevras des enfants d'Israël l'argent du rachat, et tu l'appliqueras au travail de la tente d'assignation; ce sera pour les enfants d'Israël un souvenir devant l'Éternel pour le rachat de leurs personnes.

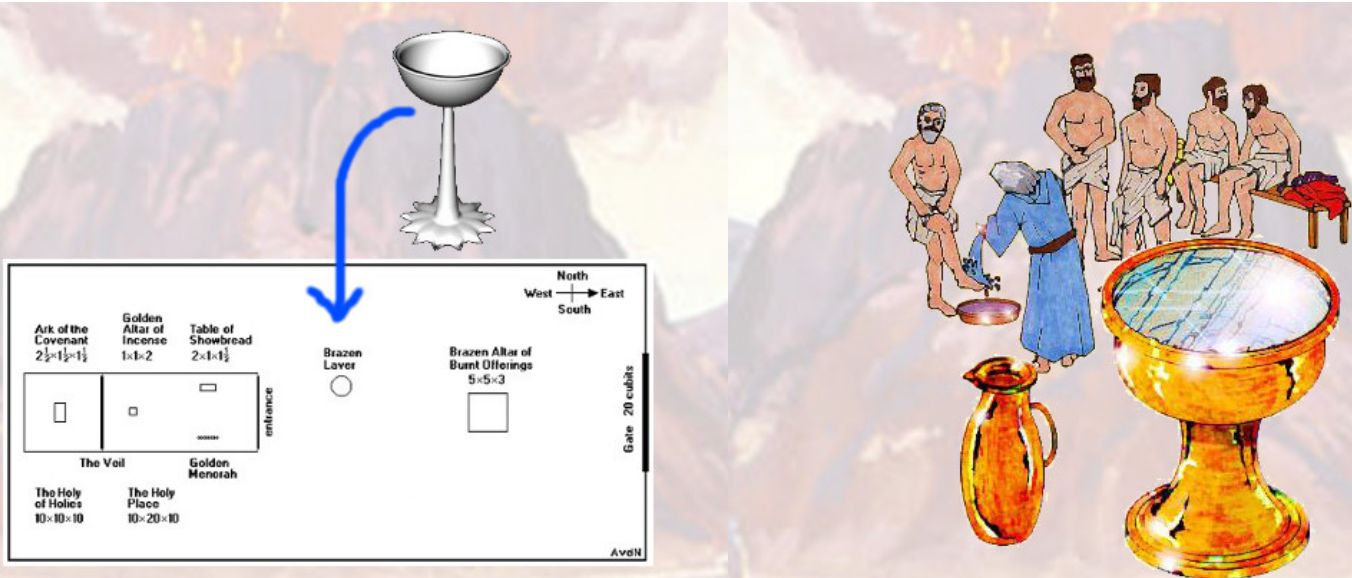
Exode 30 : 16

58

¹⁷L'Éternel parla à Moïse, et dit: ¹⁸Tu feras une cuve d'airain, avec sa base d'airain, pour les ablutions;

Exode 30 : 17-18a

59



tu la placeras entre la tente d'assignation et l'autel,
Exode 30 : 18b

et tu y mettras de l'eau, ¹⁹avec laquelle Aaron et ses fils
se laveront les mains et les pieds. Exode 30 : 18c-19

60

61



²⁰Lorsqu'ils entreront dans la tente d'assignation, ils se
laveront avec cette eau, afin qu'ils ne meurent point; et
aussi lorsqu'ils s'approcheront de l'autel, pour faire le
service et pour offrir des sacrifices à l'Éternel.

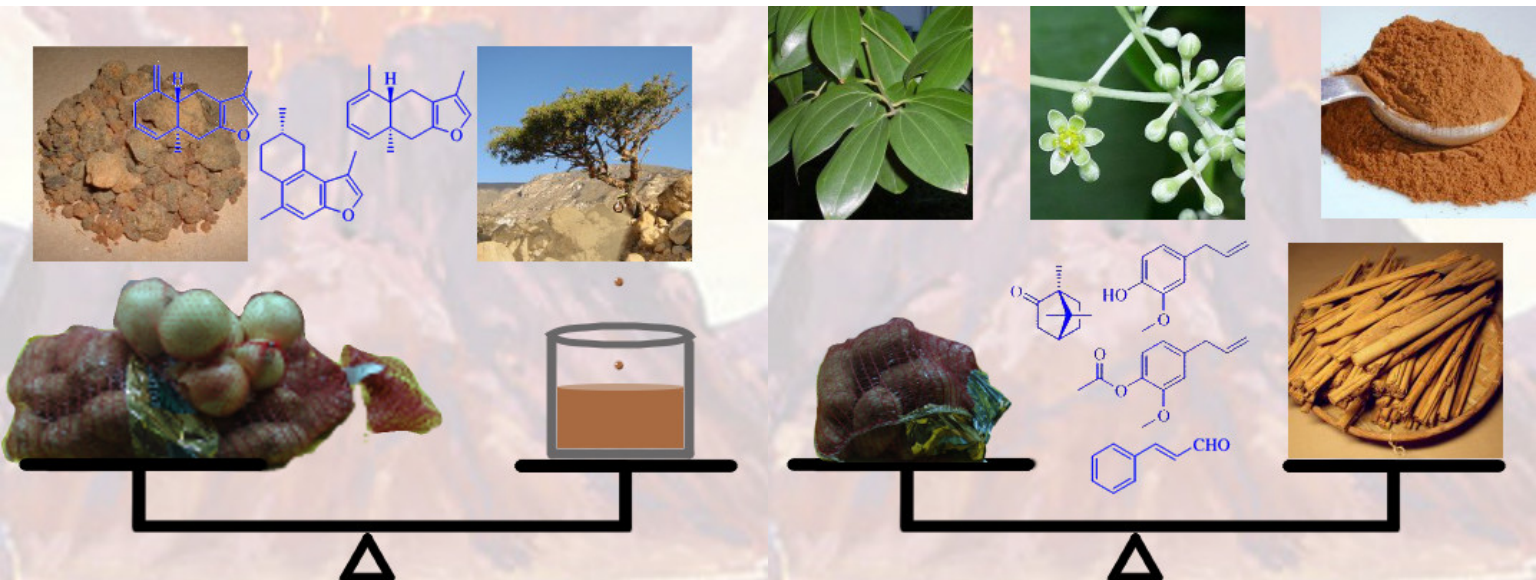
Exode 30 : 20

Before the Last Supper, Jesus washed his disciples'
feet and commanded them to do likewise. See
John 13 : 14. When they followed this instruction,
their hands would have also been washed.

²¹Ils se laveront les mains et les pieds, afin qu'ils ne
meurent point. Ce sera une loi perpétuelle pour Aaron,
pour ses fils et pour leurs descendants. Exode 30 : 21

62

63



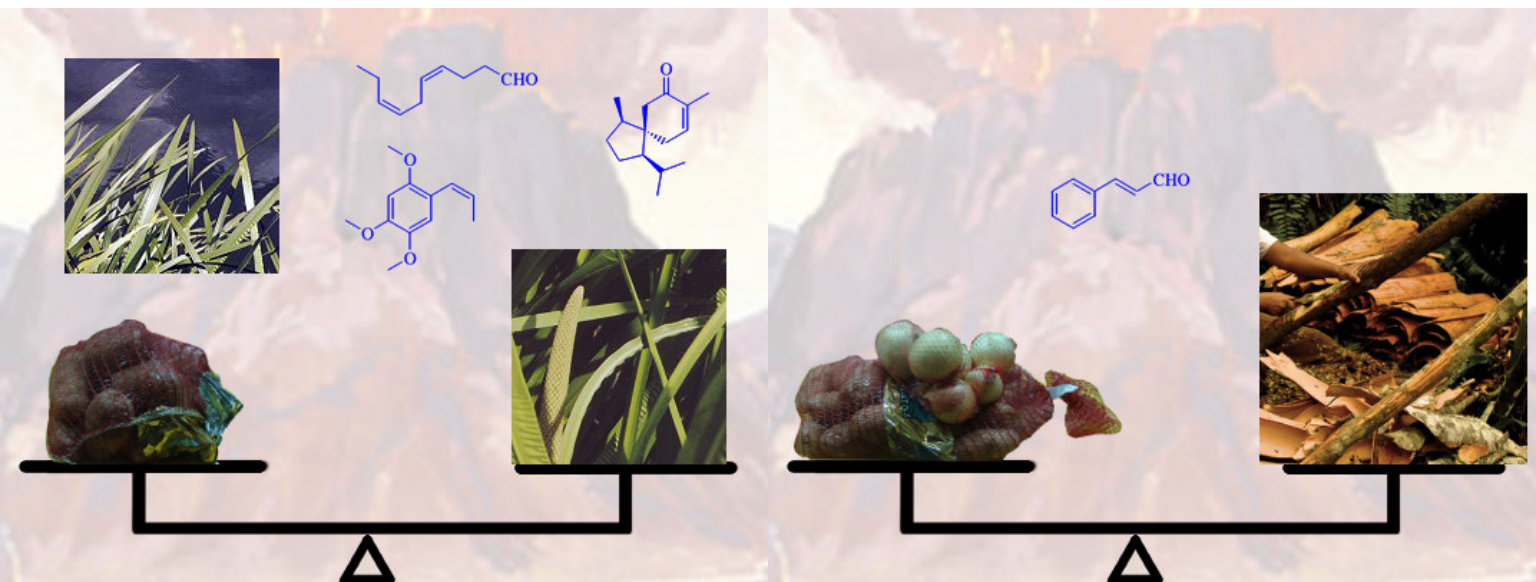
The Holy Anointing Oil

²²L'Éternel parla à Moïse, et dit: ²³Prends des meilleurs aromates, cinq cents sicles de myrrhe, de celle qui coule d'elle-même; Exode 30 : 22-23a

Notes: Myrrh has a sweet-woody odour. Convertme.com estimates 500 shekels to be 12.5 pounds or 5.6 kg. This is about the weight of a 10-pound bag of potatoes plus the weight of a 2.5 pound bag of onions. The incense and anointing oil components in this book are based on wikipedia-estimated definitions.

la moitié, soit deux cent cinquante sicles, de cinnamome aromatique, Exode 30 : 23b

Notes: True cinnamon can smell like cinnamon, or clove, or camphor. Convertme.com estimates 250 shekels to be 6.25 pounds or 2.8 kg



Other translations say "calamus". Calmus is pictured here.

deux cent cinquante sicles de roseau aromatique, Exode 30 : 23c

Notes: Calmus has an attractive, spicy-aromatic character and has been used in perfumes of the so-called Chypre type.

An Egyptian hin during both the old kingdom and new kingdom was 2 USA cups or 1 USA pint.

²⁴cinq cents sicles de casse, selon le sicle du sanctuaire, Exode 30 : 24a

Notes: Cassia is what is normally sold as ground cinnamon in the US. Five hundred shekels is about 12.5 pounds or 5.6 kg. It smells like the cinnamon that is sold in the United States. Cinnamaldehyde is the main component, which is one of the components of true cinnamon.



An Egyptian hin is 2 US Cups or 1 US pint.

et un hin d'huile d'olive.

Exode 30 : 24b



Reliefs on the walls of the tomb of Petosiris, who lived during the early Ptolemaic period, depict some of the aspects of perfume making. Some forms of mechanical and chemical extraction are shown here.

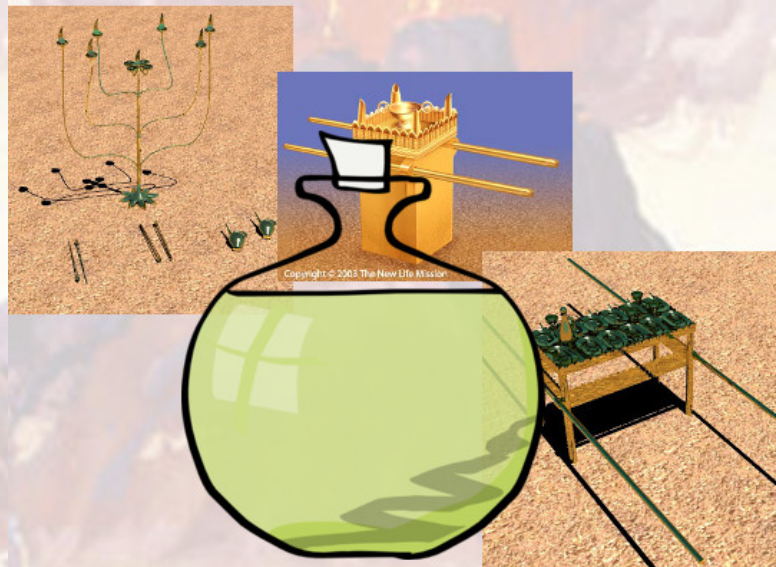
²⁵Tu feras avec cela une huile pour l'onction sainte, composition de parfums selon l'art du parfumeur; ce sera l'huile pour l'onction sainte.

Exode 30 : 25



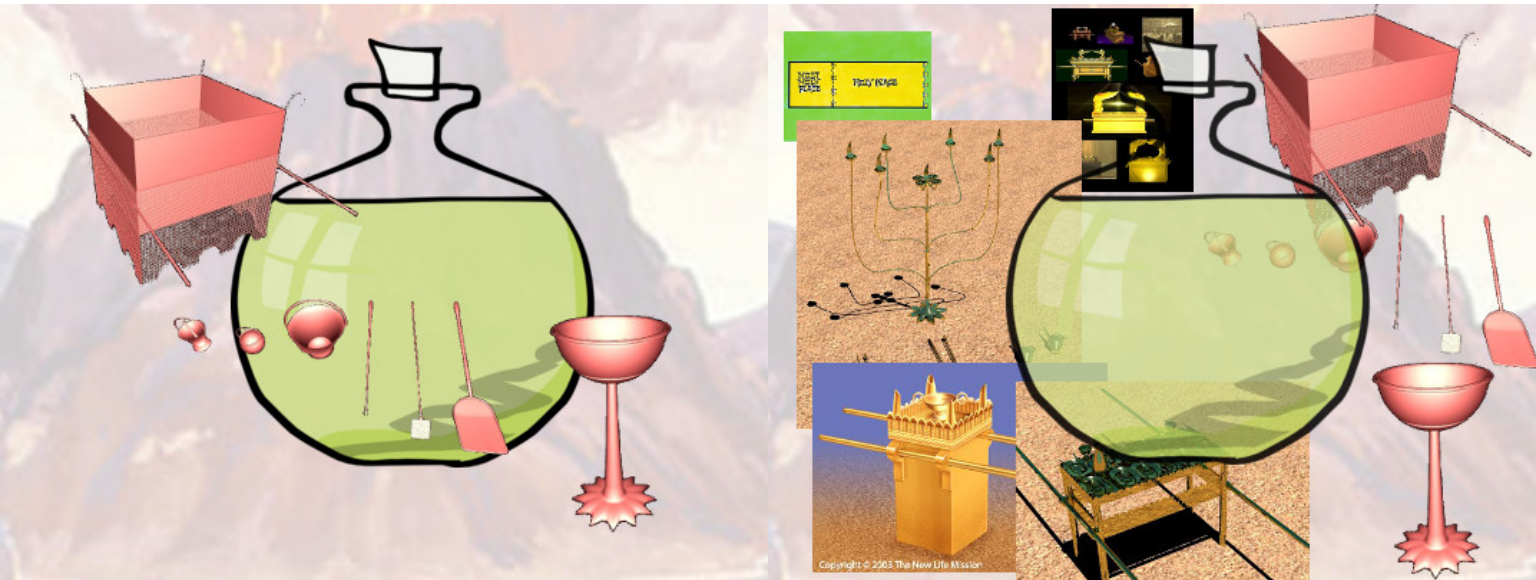
²⁶Tu en oindras la tente d'assignation et l'arche du témoignage,

Exode 30 : 26



²⁷la table et tous ses ustensiles, le chandelier et ses ustensiles, l'autel des parfums,

Exode 30 : 27



28 l'autel des holocaustes et tous ses ustensiles, la cuve avec sa base. Exode 30 : 28

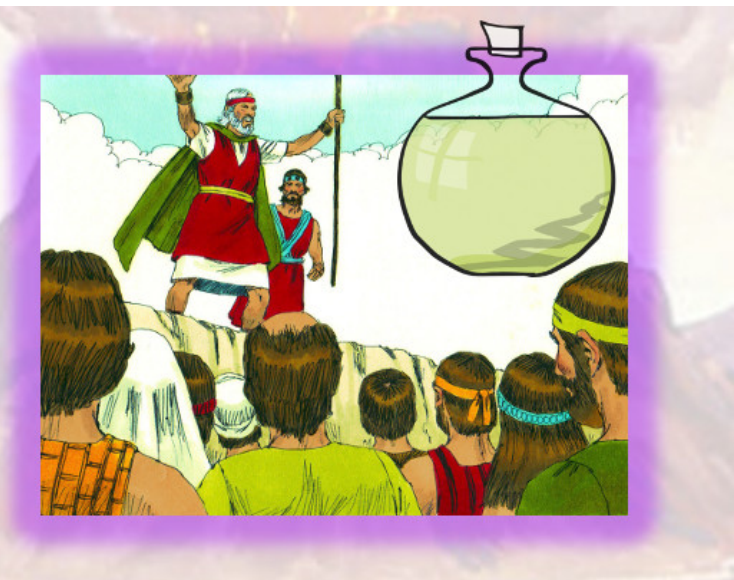
29 Tu sanctifieras ces choses, et elles seront très saintes, tout ce qui les touchera sera sanctifié. Exode 30 : 29

72

73



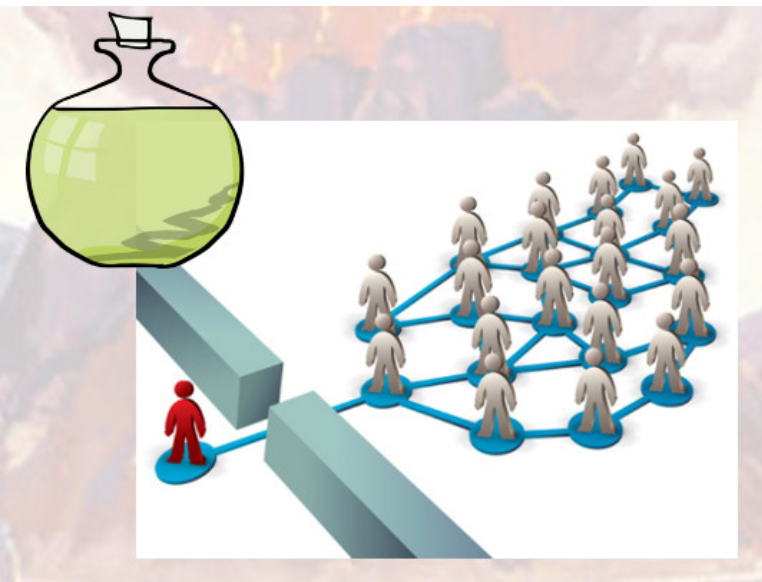
30 Tu oindras Aaron et ses fils, et tu les sanctifieras, pour qu'ils soient à mon service dans le sacerdoce. Exode 30 : 30



31 Tu parleras aux enfants d'Israël, et tu diras: Ce sera pour moi l'huile de l'onction sainte, parmi vos descendants. Exode 30 : 31

74

75



³² On n'en répandra point sur le corps d'un homme, et vous n'en ferez point de semblable, dans les mêmes proportions; elle est sainte, et vous la regarderez comme sainte.

Exode 30 : 32

³³ Quiconque en composera de semblable, ou en mettra sur un étranger, sera retranché de son peuple.

Exode 30 : 33

76

77



³⁴ L'Éternel dit à Moïse: Prends des aromates, du stacté,
Exode 30 : 34a

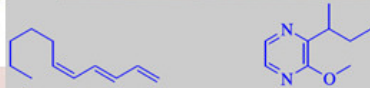
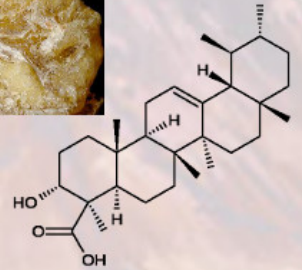
Notes: The incense spices shown in this book are scholars' best guesses, but their true identities are uncertain. Stacte may be benzoin. Benzoin gum siam has a pleasant, sweet-balsamic odour with a distinct note of vanilla, whereas benzoin gum Sumatra has a strong odour like styrene.

de l'ongle odorant, Exode 30 : 34b

Note: Labdanum has a warm, sweet-resinous, woody-ambery odour. Other possible candidates include clove and spikenard.

78

79



du galbanum,

Notes: Galbanum smells like pea pods.

Exode 30 : 34c

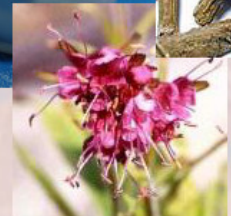
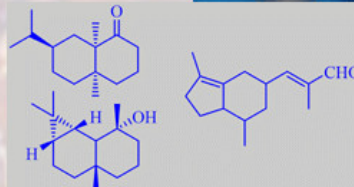
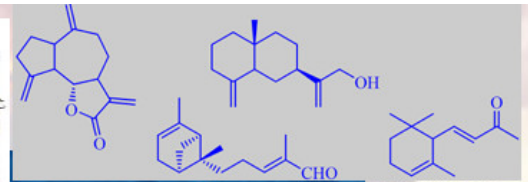
80

et de l'encens pur,

Notes: Frankincense smells like a balsamic-spicy, slightly lemon, fragrance of incense, with a conifer-like undertone.

Exode 30 : 34d

81



en parties égales.

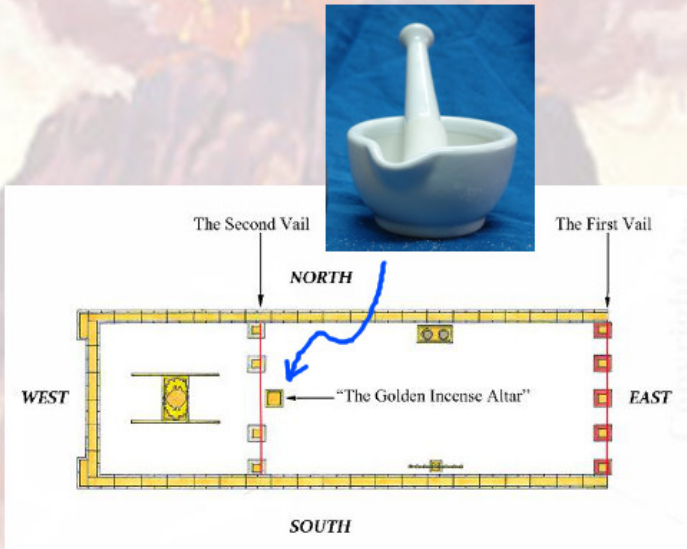
Exode 30 : 34e

82

³⁵Tu feras avec cela un parfum composé selon l'art du parfumeur; il sera salé, pur et saint. Exode 30 : 35

Notes: The Talmud lists several other spices and ingredients that would be necessary to extract, stabilize and preserve this incense. Some of the best guesses for these spices are listed here. Spikenard smells like stinky feet. Costus smells like wet dog.

83



36 Tu le réduiras en poudre, et tu le mettras devant le témoignage, dans la tente d'assignation, où je me rencontrerai avec toi. Ce sera pour vous une chose très sainte.
Exode 30 : 36

37 Vous ne ferez point pour vous de parfum semblable, dans les mêmes proportions; vous le regarderez comme saint, et réservé pour l'Éternel.
Exode 30 : 37

84

85



Artisans for Building the Tabernacle

38 Quiconque en fera de semblable, pour le sentir, sera retranché de son peuple.
Exode 30 : 38

Chapitre 31: ¹L'Éternel parla à Moïse, et dit: ²Sache que j'ai choisi Betsaleel, fils d'Uri, fils de Hur, de la tribu de Juda. ³Je l'ai rempli de l'Esprit de Dieu, de sagesse, d'intelligence, et de savoir pour toutes sortes d'ouvrages,
Exode 31 : 1-3

86

87



⁴je l'ai rendu capable de faire des inventions, de travailler l'or, l'argent et l'airain, Exode 31 : 4

⁵de graver les pierres à enchâsser, Exode 31 : 5a

88

89



de travailler le bois, et d'exécuter toutes sortes d'ouvrages. Exode 31 : 5b

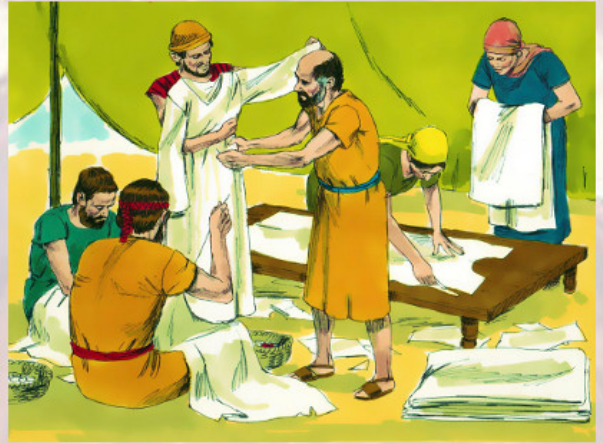
⁶Et voici, je lui ai donné pour aide Oholiab, fils d'Ahisamac, de la tribu de Dan. J'ai mis de l'intelligence dans l'esprit de tous ceux qui sont habiles, pour qu'ils fassent tout ce que je t'ai ordonné: Exode 31 : 6

90

91



Picture used with permission: (c)2006 www.TheGloryStory.com



⁷la tente d'assignation, l'arche du témoignage, le propitiatoire qui sera dessus, et tous les ustensiles de la tente; ⁸la table et ses ustensiles, le chandelier d'or pur et tous ses ustensiles, ⁹l'autel des parfums; l'autel des holocaustes et tous ses ustensiles, la cuve avec sa base; Exode 31 : 7-9

¹⁰les vêtements d'office, les vêtements sacrés pour le sacrificateur Aaron, les vêtements de ses fils pour les fonctions du sacerdoce; Exode 31 : 10



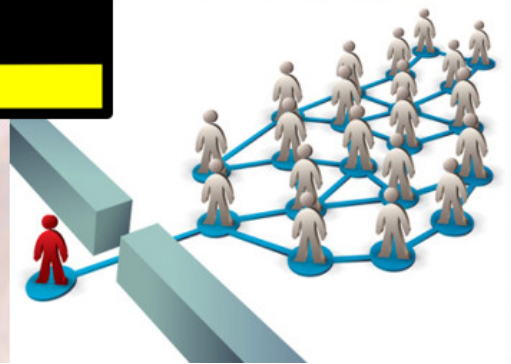
St.Takla.org



¹¹l'huile d'onction, et le parfum odoriférant pour le sanctuaire. Ils se conformeront à tous les ordres que j'ai donnés. Exode 31 : 11

The Sabbath Law. "Sanctify" is Strong's number 6942: A primitive root; to be clean.

¹²L'Éternel parla à Moïse, et dit: ¹³Parle aux enfants d'Israël, et dis-leur: Vous ne manquerez pas d'observer mes sabbats, car ce sera entre moi et vous, et parmi vos descendants, un signe auquel on connaîtra que je suis l'Éternel qui vous sanctifie. Exode 31 : 12-13



14 Vous observerez le sabbat, car il sera pour vous une chose sainte. Celui qui le profanera, sera puni de mort; Exode 31 : 14a

celui qui fera quelque ouvrage ce jour-là, sera retranché du milieu de son peuple. Exode 31 : 14b

96

97



15 On travaillera six jours; mais le septième jour est le sabbat, le jour du repos, consacré à l'Éternel. Exode 31 : 15a

Celui qui fera quelque ouvrage le jour du sabbat, sera puni de mort. Exode 31 : 15b

98

99



¹⁶ Les enfants d'Israël observeront le sabbat, en le célébrant, eux et leurs descendants, comme une alliance perpétuelle.
Exode 31 : 16

100

¹⁷ Ce sera entre moi et les enfants d'Israël un signe qui devra durer à perpétuité; car en six jours l'Éternel a fait les cieux et la terre, et le septième jour il a cessé son oeuvre et il s'est reposé.
Exode 31 : 17

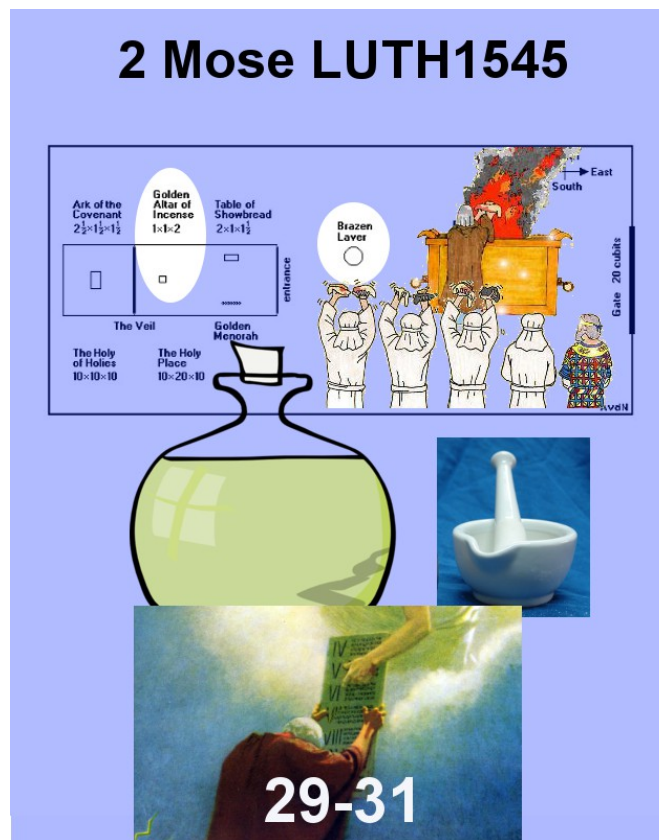
101



¹⁸ Lorsque l'Éternel eut achevé de parler à Moïse sur la montagne de Sinaï, il lui donna les deux tables du témoignage, tables de pierre, écrites du doigt de Dieu.
Exode 31 : 18

102

103



2 Mose 29

- 1 Das ist's auch, was du ihnen tun sollst, daß sie mir zu Priestern geweiht werden. Nimm einen jungen Farren und zwei Widder ohne Fehl,
- 2 ungesäuertes Brot und ungesäuerte Kuchen, mit Öl gemengt, und ungesäuerte Fladen, mit Öl gesalbt; von Weizenmehl sollst du solches alles machen.
- 3 Und sollst es in einen Korb legen und in dem Korbe herzubringen samt dem Farren und den zwei Widdern.
- 4 Und sollst Aaron und seine Söhne vor die Tür der Hütte des Stifts führen und mit Wasser waschen
- 5 und die Kleider nehmen und Aaron anziehen den engen Rock und den Purpurrock und den Leibrock und das Schild zu dem Leibrock, und sollst ihn gürteln mit dem Gurt des Leibrocks
- 6 und den Hut auf sein Haupt setzen und die heilige Krone an den Hut.
- 7 Und sollst nehmen das Salböl und auf sein Haupt schütten und ihn salben.
- 8 Und seine Söhne sollst du auch herzuführen und den engen Rock ihnen anziehen
- 9 und beide, Aaron und auch sie, mit Gürteln gürteln und ihnen die Hauben aufbinden, daß sie das Priestertum haben zu ewiger Weise. Und sollst Aaron und seinen Söhnen die Hände füllen,
- 10 und den Farren herzuführen vor die Hütte des Stifts; und Aaron und seine Söhne sollen ihre Hände auf des Farren Haupt legen.
- 11 Und du sollst den Farren schlachten vor dem HERRN, vor der Tür der Hütte des Stifts.
- 12 Und sollst von seinem Blut nehmen und auf des Altars Hörner tun mit deinem Finger und alles andere Blut an des Altars Boden schütten.

13 Und sollst alles Fett nehmen am Eingeweide und das Netz über der Leber und die zwei Nieren mit dem Fett, das darüber liegt, und sollst es auf dem Altar anzünden.

14 Aber des Farren Fleisch, Fell und Mist sollst du draußen vor dem Lager verbrennen; denn es ist ein Sündopfer.

15 Aber den einen Widder sollst du nehmen, und Aaron und seine Söhne sollen ihre Hände auf sein Haupt legen.

16 Dann sollst du ihn schlachten und sein Blut nehmen und auf den Altar sprengen ringsherum.

17 Aber den Widder sollst du zerlegen in Stücke, und seine Eingeweide und Schenkel waschen, und sollst es auf seine Stücke und sein Haupt legen

18 und den ganzen Widder anzünden auf dem Altar; denn es ist dem HERRN ein Brandopfer, ein süßer Geruch, ein Feuer des HERRN.

19 Den andern Widder aber sollst du nehmen, und Aaron und seine Söhne sollen ihre Hände auf sein Haupt legen;

20 und sollst ihn schlachten und von seinem Blut nehmen und Aaron und seinen Söhnen auf den rechten Ohrknorpel tun und auf ihre Daumen ihrer rechten Hand und auf die große Zehe ihres rechten Fußes; und sollst das Blut auf den Altar sprengen ringsherum.

21 Und sollst von dem Blut auf dem Altar nehmen und vom Salböl, und Aaron und seine Kleider, seine Söhne und ihre Kleider besprengen; so wird er und seine Kleider, seine Söhne und ihre Kleider geweiht.

22 Darnach sollst du nehmen das Fett von dem Widder, den Schwanz und das Fett am Eingeweide, das Netz über der Leber und die zwei Nieren mit dem Fett darüber und die rechte Schulter (denn es ist ein Widder der Füllung),

23 und ein Brot und einen Ölkuchen und einen Fladen aus dem Korbe des ungesäuerten Brots, der vor dem HERRN steht;

24 und lege alles auf die Hände Aarons und seiner Söhne und webe es dem HERRN.

25 Darnach nimm's von ihren Händen und zünde es an auf dem Altar zu dem Brandopfer, zum süßen Geruch vor dem HERRN; denn das ist ein Feuer des HERRN.

26 Und sollst die Brust nehmen vom Widder der Füllung Aarons und sollst sie dem HERRN weben. Das soll dein Teil sein.

27 Und sollst also heiligen die Webebrust und die Hebeschulter, die gewebt und gehebt sind von dem Widder der Füllung Aarons und seiner Söhne.

28 Und das soll Aarons und seiner Söhne sein ewigerweise von den Kindern Israel; denn es ist ein Hebopfer. Und eine Hebe soll es sein, von den Kindern Israel von ihrem Dankopfern, ihre Hebe für den HERRN.

29 Aber die heiligen Kleider Aarons sollen seine Söhne haben nach ihm, daß sie darin gesalbt und ihre Hände gefüllt werden.

30 Welcher unter seinen Söhnen an seiner Statt Priester wird, der soll sie sieben Tage anziehen, daß er gehe in die Hütte des Stifts, zu dienen im Heiligen.

31 Du sollst aber nehmen den Widder der Füllung, und sein Fleisch an einem heiligen Ort kochen.

32 Und Aaron mit seinen Söhnen soll des Widders Fleisch essen samt dem Brot im Korbe vor der Tür

der Hütte des Stifts.

33 Denn es ist zur Versöhnung damit geschehen, zu füllen ihre Hände, daß sie geweiht werden. Kein anderer soll es essen; denn es ist heilig.

34 Wo aber etwas übrigbleibt von dem Fleisch der Füllung und von dem Brot bis an den Morgen, das sollst du mit Feuer verbrennen und nicht essen lassen; denn es ist heilig.

35 Und sollst also mit Aaron und seinen Söhnen tun alles, was ich dir geboten habe. Sieben Tage sollst du ihre Hände füllen

36 und täglich einen Farren zum Sündopfer schlachten zur Versöhnung. Und sollst den Altar entsündigen, wenn du ihn versöhnst, und sollst ihn salben, daß er geweiht werde.

37 Sieben Tage sollst du den Altar versöhnen und ihn weihen, daß er sei ein Hochheiliges. Wer den Altar anrühren will, der ist dem Heiligtum verfallen.

38 Und das sollst du mit dem Altar tun: zwei jährige Lämmer sollst du allewege des Tages darauf opfern,

39 Ein Lamm des Morgens, das andere gegen Abend;

40 Und zu einem Lamm ein zehntel Semmelmehl, gemengt mit einem Viertel von einem Hin gestoßenen Öls, und ein Viertel vom Hin Wein zum Trankopfer.

41 Mit dem andern Lamm gegen Abend sollst du tun wie mit dem Speisopfer und Trankopfer des Morgens, zu süßem Geruch, ein Feuer dem Herrn.

42 Das ist das tägliche Brandopfer bei euren Nachkommen vor der Tür der Hütte des Stifts, vor dem HERRN, da ich mich euch bezeugen und mit dir reden will.

43 Dasselbst will ich mich den Kindern Israel bezeugen und geheiligt werden in meiner Herrlichkeit.

44 So will ich die Hütte des Stifts mit dem Altar heiligen und Aaron und seine Söhne mir zu Priestern weihen.

45 Und will unter den Kindern Israel wohnen und ihr Gott sein,

46 daß sie wissen sollen, ich sei der HERR, ihr Gott, der sie aus Ägyptenland führte, daß ich unter ihnen wohne, ich, der HERR, Ihr Gott.

2 Mose 30

1 Du sollst auch einen Räuchaltar machen, zu räuchern, von Akazienholz,

2 eine Elle lang und breit, gleich viereckig und zwei Ellen hoch, mit seinen Hörnern.

3 Und sollst ihn mit feinem Golde überziehen, sein Dach und seine Wände ringsumher und seine Hörner. Und sollst einen Kranz von Gold machen

4 und zwei goldene Ringe unter dem Kranz zu beiden Seiten, daß man Stangen darein tue und ihn damit trage.

5 Die Stangen sollst du auch von Akazienholz machen und mit Gold überziehen.

6 Und sollst ihn setzen vor den Vorhang, der vor der Lade des Zeugnisses hängt, und vor dem Gnadenstuhl, der auf dem Zeugnis ist, wo ich mich dir bezeugen werde.

7 Und Aaron soll darauf räuchern gutes Räuchwerk alle Morgen, wenn er die Lampen zurichtet.

8 Desgleichen, wenn er die Lampen anzündet gegen Abend, soll er solch Räuchwerk auch räuchern. Das soll das tägliche Räuchopfer sein vor dem HERRN bei euren Nachkommen.

9 Ihr sollt kein fremdes Räuchwerk darauf tun, auch kein Brandopfer noch Speisopfer und kein Trankopfer darauf opfern.

10 Und Aaron soll auf seinen Hörnern versöhnen einmal im Jahr mit dem Blut des Sündopfers zur Versöhnung. Solche Versöhnung soll jährlich einmal geschehen bei euren Nachkommen; denn das ist dem HERRN ein Hochheiliges.

11 Und der HERR redete mit Mose und sprach:

12 Wenn du die Häupter der Kinder Israel zählst, so soll ein jeglicher dem HERRN geben die Versöhnung seiner Seele, auf daß ihnen nicht eine Plage widerfahre, wenn sie gezählt werden.

13 Es soll aber ein jeglicher, der in der Zahl ist, einen halben Silberling geben nach dem Lot des Heiligtums (ein Lot hat zwanzig Gera). Solcher halber Silberling soll das Hebopfer des HERRN sein.

14 Wer in der Zahl ist von zwanzig Jahren und darüber, der soll solch Hebopfer dem HERRN geben.

15 Der Reiche soll nicht mehr geben und der Arme nicht weniger als den halben Silberling, den man dem HERRN zur Hebe gibt für die Versöhnung ihre Seelen.

16 Und du sollst solch Geld der Versöhnung nehmen von den Kindern Israel und zum Gottesdienst der Hütte des Stifts geben, daß es sei den Kindern Israel ein Gedächtnis vor dem HERRN, daß er sich Über ihre Seelen versöhnen lasse.

17 Und der HERR redete mit Mose und sprach:

18 Du sollst auch ein ehernes Handfaß machen mit einem ehernen Fuß, zum Waschen, und sollst es setzen zwischen die Hütte des Stifts und den Altar, und Wasser darein tun,

19 daß Aaron und seine Söhne ihre Hände und Füße darin waschen,

20 wenn sie in die Hütte des Stifts gehen oder zum Altar, daß sie dienen, ein Feuer anzuzünden dem HERRN,

21 auf daß sie nicht sterben. Das soll eine ewige Weise sein ihm und seinem Samen bei ihren Nachkommen.

22 Und der HERR redete mit Mose und sprach:

23 Nimm zu dir die beste Spezerei: die edelste Myrrhe, fünfhundert Lot, und Zimt, die Hälfte soviel, zweihundertfünfzig, und Kalmus, auch zweihundertfünfzig,

24 und Kassia, fünfhundert, nach dem Lot des Heiligtums, und Öl vom Ölbaum ein Hin.

25 Und mache ein heiliges Salböl nach der Kunst des Salbenbereiters.

26 Und sollst damit salben die Hütte des Stifts und die Lade des Zeugnisses,

27 den Tisch mit allem seinem Geräte, den Leuchter mit seinem Geräte, den Räucheraltar,

28 den Brandopferaltar mit allem seinem Geräte und das Handfaß mit seinem Fuß.

29 Und sollst sie also weihen, daß sie hochheilig seien; denn wer sie anrühren will, der ist dem Heiligtum verfallen.

30 Aaron und seine Söhne sollst du auch salben und sie mir zu Priestern weihen.

31 Und sollst mit den Kindern Israel reden und sprechen: Dies Öl soll mir eine heilige Salbe sein bei euren Nachkommen.

32 Auf Menschenleib soll's nicht gegossen werden, sollst auch seinesgleichen nicht machen; denn es ist heilig, darum soll's euch heilig sein.

33 Wer ein solches macht oder einem andern davon gibt, der soll von seinem Volk ausgerottet werden.

34 Und der HERR sprach zu Mose: Nimm dir Spezerei; Balsam, Stakte, Galban und reinen Weihrauch, von einem so viel wie vom andern,

35 und mache Räuchwerk daraus, nach der Kunst des Salbenbereiters gemengt, daß es rein und heilig sei.

36 Und du sollst es zu Pulver stoßen und sollst davon tun vor das Zeugnis in der Hütte des Stifts, wo ich mich dir bezeugen werde. Das soll euch ein Hochheiliges sein.

37 Und desgleichen Räuchwerk sollt ihr euch nicht machen, sondern es soll dir heilig sein dem HERRN.

38 Wer ein solches machen wird, der wird ausgerottet werden von seinem Volk.

2 Mose 31

1 Und der HERR redete mit Mose und sprach:

2 Siehe, ich habe mit Namen berufen Bezaleel, den Sohn Uris, des Sohnes Hur, vom Stamme Juda,

3 und habe ihn erfüllt mit dem Geist Gottes, mit Weisheit und Verstand und Erkenntnis und mit allerlei Geschicklichkeit,

4 kunstreich zu arbeiten an Gold, Silber, Erz,

5 kunstreich Steine zu schneiden und einzusetzen, und kunstreich zu zimmern am Holz, zu machen allerlei Werk.

6 Und siehe, ich habe ihm zugegeben Oholiab, den Sohn Ahisamachs, vom Stamme Dan; und habe allerlei Weisen die Weisheit ins Herz gegeben, daß sie machen sollen alles, was ich dir geboten habe:

7 die Hütte des Stifts, die Lade des Zeugnisses, den Gnadenstuhl darauf und alle Geräte der Hütte,

8 den Tisch und sein Gerät, den feinen Leuchter und all sein Gerät, den Räucheraltar,

9 den Brandopferaltar mit allem seinem Geräte, das Handfaß mit seinem Fuß,

10 die Amtskleider und die heiligen Kleider des Priesters Aaron und die Kleider seiner Söhne, priesterlich zu dienen,

11 das Salböl und das Räuchwerk von Spezerei zum Heiligtum. Alles, was ich dir geboten habe, werden sie machen.

12 Und der HERR redete mit Mose und sprach:

13 Sage den Kindern Israel und sprich: Haltet meinen Sabbat; denn derselbe ist ein Zeichen zwischen mir und euch auf eure Nachkommen, daß ihr wisset, daß ich der HERR bin, der euch heiligt.

14 Darum so haltet meinen Sabbat; denn er soll euch heilig sein. Wer ihn entheiligt, der soll des Todes sterben. Denn wer eine Arbeit da tut, des Seele soll ausgerottet werden von seinem Volk.

15 Sechs Tage soll man arbeiten; aber am siebenten Tag ist Sabbat, die heilige Ruhe des HERRN. Wer eine Arbeit tut am Sabbattag, der soll des Todes sterben.

16 Darum sollen die Kinder Israel den Sabbat halten, daß sie ihn auch bei ihren Nachkommen halten

zum ewigen Bund.

17 Er ist ein ewiges Zeichen zwischen mir und den Kindern Israel. Denn in sechs Tagen machte der HERR Himmel und Erde; aber am siebenten Tage ruhte er und erquickte sich.

18 Und da der HERR ausgeredet hatte mit Mose auf dem Berge Sinai, gab er ihm zwei Tafeln des Zeugnisses; die waren beschrieben mit dem Finger Gottes.

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104

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105

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118

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- p. 101 Seal: http://www.clipartpanda.com/clipart_images/certificate-seal-18984745 and Ultimate Bible Picture Collection
- p. 102 Ultimate Bible Picture Collection

119