Jews the world over celebrate the seven-day festival of Sukkot in the seventh Hebrew month of Tishrei, usually occurring in September or early October. One of the unique rituals of this holiday is taking the *arba'ah minim* [Four Species], which are defined as the *lulav* [palm branch], *etrog* [citron fruit], *hadassim* [myrtle branches], and *aravot* [willow branches], reciting a blessing over them, and then waving them in six directions.

Curiously, the Bible in Leviticus 23:40 does not specifically identify the *etrog*, the citron fruit (Citrus Medica), as one of the four species used in the ritual. The Bible calls instead for *peri etz hadar* ("the fruit of goodly trees") or, perhaps, "the goodly fruit of trees". In fact, the term *etrog* is not found anywhere in the Bible. Also, the specifics of the ritual, i.e., what should be done with these Four Species, are never explicitly detailed in the Bible. In spite of this biblical non-identification, traditional Jews have practiced this ritual for at least 2,000 years, as demonstrated by textual and archaeological evidence, without questioning its origin. Although most Jews take for granted that the Four Species ritual, with the *etrog* included, goes back to biblical times, this is not so. In this article we will investigate the origin of the *etrog’s* identification with the biblical *peri etz hadar*.

When referring to the Feast of Tabernacles, the Bible enjoins: *Ye shall take you on the first day the fruit of goodly trees, branches of palm-trees, and boughs of thick trees, and willows of the brook, and ye shall rejoice before the LORD your God seven days* (Lev. 23:40). We can understand the phrases *Ye shall take . . . and ye shall rejoice before the LORD* as hinting at a ritual involving the taking of the Four Species and doing something festive with them, the waving ceremony practiced today. However, while the passage clearly identifies the palm frond and the willow, and possibly the myrtle, it is entirely non-specific when calling for *the fruit of goodly trees*. The Bible's Leviticus 23:40 as well...
as its Septuagint version specify the "goodly fruit/tree" but neither states that it is an etrog.

Our next source, chronologically, is from the Writings (Nehemiah 8), describing an event that occurred during the early Second Temple period. Its setting is Jerusalem, where all the people gathered themselves together as one man into the broad place that was before the water gate; and they spoke unto Ezra the scribe to bring the book of the Law of Moses, which the LORD had commanded to Israel (Neh. 8:1). Later in the same chapter we read:

Now they found written in the Law, how that the LORD had commanded by Moses, that the children of Israel should dwell in booths in the feast of the seventh month; and that they should publish and proclaim in all their cities, and in Jerusalem, saying: 'Go forth unto the mount, and fetch olive branches, and branches of wild olive, and myrtle branches, and palm branches, and branches of thick trees, to make booths, as it is written.' So the people went forth, and brought them, and made themselves booths, every one upon the roof of his house, and in their courts, and in the courts of the house of God, and in the broad place of the water gate, and in the broad place of the gate of Ephraim. And all the congregation of them that were come back out of the captivity made booths, and dwelt in the booths; for since the days of Joshua the son of Nun unto that day the children of Israel had not done so. And there was very great gladness (Neh. 8:14-17).

Unlike Leviticus 23:40, there is no mention of the "goodly fruit/tree" in Nehemiah 8. Instead, we find olive branches and branches of wild olive. The Septuagint translates this as "leaves of olive and branches of cypress tree." The Bible and Septuagint for Nehemiah 8 do not mention the etrog, and both versions expressly declare that the species listed are to be used to build the booths needed for the holiday. There is no reference to the practice of taking the Four Species in hand and using them in any waving ritual. On the other hand, there is no mention in Leviticus of the materials or species to be used for building the required booths, whereas Nehemiah does appear to specify the building materials. However, Nehemiah is ambiguous as to whether these species alone may ritually be used for the sukkah’s construction or if they are simply the ones available.
THE GENESIS OF THE ETROG (CITRON) AS PART OF THE FOUR SPECIES

Reading the Nehemiah 8 narrative, we are led to conclude that the people of that time may have understood Leviticus 23:40 to specify the materials used in building sukkot. An echo of this approach is found in TB Sukkah 36b-37a. There Rabbi Meir states that a sukkah can be made of any material whereas Rabbi Judah says that only the Four Species may be used. He cites, as the basis for his position, the practice in Nehemiah 8. Clearly, associating the Four Species with sukkah building material was a tradition known and accepted, at least by some, well into the mishnaic period of the second century CE. This tradition is preserved among the Samaritans.4

The ambiguous *goodly fruit/tree* of Leviticus 23:40 was evidently interpreted to mean olive branches and branches of wild olive (per the Bible) or leaves of olive and branches of cypress trees (per the Septuagint), but not the etrog. I believe that the olive tree and its fruit were the single most important agricultural product in ancient Israel. Olive oil was a staple for cooking and provided fuel for oil lamps, also constituting the primary ingredient for anointing in religious rituals as well as for medicinal and cosmetic applications. The olive harvest occurs in the autumn, coinciding with the festival of Sukkot, which the Bible refers to as the Ingathering Festival. If the "goodly fruit/tree" was biblically undefined, what better candidate was there than the olive?

The idea that *the fruit of goodly trees* can be understood as referring to the olive may be alluded to in the words of Jeremiah the prophet describing Israel: "zayit ra'anay yefeh peri to'ar kara Adonai shemek" ["The LORD called thy name a leafy olive-tree, fair with goodly fruit"] (Jer. 11:16). The juxtaposition of "leafy olive tree" and "goodly fruit" in this verse may have led to the interpretation of the phrase in Leviticus 23:40, which includes "goodly", "fruit", and "tree", as the olive.

However, we still need to understand how the etrog came to be part of the Four Species.

*Targum Onkelos*, probably written in the first century CE, clearly and unambiguously translates Leviticus 23:40 as "You shall take for yourselves, on the first day, *fruit of the etrog tree*, palm fronds, myrtle and willow." Similarly, Josephus (who also wrote in the first century CE) identifies the Four Species when he declares regarding the Sukkot festival: "We should carry in our
hands a branch of myrtle, and willow, and a bough of the palm tree, *with the addition of the pomecitron [etrog]*" (Antiquities 3.10.4).

Clearly, both authors are recording the inclusion of the etrog in the tradition practiced in their day and, almost certainly, earlier. Evidence of such a tradition going back to at least the first century BCE is both textual and archaeological. The Talmud (TB Sukkot 34a) relates that the Hasmonean king and high priest Alexander Jannaeus (Yannai), who ruled Judea (103-76 BCE), was pelted with etrogim by the angry worshipers when he showed contempt for the Water Libation ritual, which laid down that water be poured onto the Temple altar during the Sukkot festival. Josephus also refers to this incident in his Antiquities (13.13.5). Furthermore, Hasmonean coins of the first century BCE prominently display the etrog, which had the status of a Jewish national symbol. We can now see that the etrog, as one of the Four Species, did not feature in Sukkot celebrations of the fifth century BCE, but had definitely become an integral part of the Four Species ritual three centuries later.

To bolster this conclusion still further, we would point out that the Bible never mentions the etrog or any other citrus fruits such as lemons, limes, oranges and grapefruit, which are now extensively cultivated in Israel. Could it be that no such references are extant because the etrog and all the aforementioned citrus fruits were unknown in the region during this period?

To address this question, we will look at the field of botany with relation to citrus fruits. Where did they originate, when do we first hear of them, and which species were original and which were derived hybrids? The generally accepted opinion today is that there are three basic species of citrus: *Citrus medica* (citrons), *Citrus maxima* (pomelos), and *Citrus reticulata* (mandarins). All other types of citrus that currently exist arose from single or sequential hybridization events between these species or their offspring. This approach is supported by various scientific studies: classical taxonomy, chemotaxonomy, and molecular analysis. The pomelo and mandarin have been known for about 2,000 years and are believed to have originated in China, while the citron has been known for 2,300 years and is thought to have originated in India. The citron spread from India westward to Media (Persia) by the first millennium BCE, and then to Palestine and the Near East. It was supposedly brought to this region by Alexander the Great.
This botanical information leads us to conclude that there were no citrons (etrogim) or, for that matter, any other citrus fruits in ancient Israel during the biblical period. However, as previously indicated, by the second century BCE the etrog was an integral part of the Four Species. What gave rise to this change? Part of the answer may lie in a fairly recent discovery of the earliest evidence of local cultivation of three of the Sukkot holiday's traditional Four Species at the most ancient royal garden ever unearthed in Israel.9 The garden, at Kibbutz Ramat Rahel on the outskirts of Jerusalem, gave up its secrets thanks to remnants of pollen found in the plaster of its walls. The garden was part of an Israeli palace at Ramat Rahel that has been excavated for many years, most recently in a joint dig by Prof. Oded Lipschits and Dr. Yuval Gadot of Tel Aviv University and Prof. Manfred Oeming of Heidelberg University. The palace existed from the time of King Hezekiah until the Hasmonean period in the second century BCE.

Enlisting the aid of Tel Aviv University archaeo-botanist Dr. Dafna Langgut, they carefully peeled away layers of the plaster, revealing pollen from a number of plant species. Most of the plants were wild, but in one layer of plaster, evidently from the Persian period (the era of the Jewish return from the Babylonian exile in 538 BCE), the pollen found was from ornamental species and fruit trees, some of which came from distant lands. The find that most excited the scholars was pollen from citrons, a fruit that originated in India. This is the earliest botanical evidence of citrons in the country.10 Scholars believe that the citron came here via Persia and that its Hebrew designation, etrog, preserves the Persian name for the fruit – turung.

There is yet another piece of evidence corroborating both the botanical history and the findings at Ramat Rahel. When we examine the rabbinical responsa literature dealing with the etrog, we note how, from the sixteenth century CE, there was an overriding concern voiced by rabbis about using a grafted etrog (the product of an etrog with another citrus fruit) which is ritually prohibited.11 These responsa go to great lengths in detailing how one can distinguish between a pure etrog and one that is a product of grafting. This concern remains today, when etrogim are typically packaged in boxes clearly marked in Hebrew bilti murkav (non-grafted [product]). While this major concern about a grafted etrog is still prevalent today, it is never mentioned in the Talmud or by the Geonic and medieval authorities. Why so?
I believe there was no earlier mention simply because the *etrog* existed only in its pure state. Other citrus fruits (which derived from grafting) were not yet extant or available, and so there was no possibility of obtaining a grafted *etrog*. We can now conclude that the *etrog*, which was probably imported from Persia to Judea, a Persian province in the fifth through fourth centuries BCE, was unknown in the region before that time.

Somewhere between the fifth and second century BCE, a new tradition arose. This tradition probably originated in the newly emerging methodology of biblical interpretation or exegesis employed by the proto-rabbinic class, beginning with Ezra the Scribe. The biblical book bearing his name states: For Ezra had set his heart to seek the law of the LORD, and to do it, and to teach in Israel statutes and ordinances (Ezra 7:10). To extol his importance and contribution, the Babylonian Talmud declares that he would have been worthy of receiving the Torah from God and disseminating it to Israel, had not Moses preceded him (TB *Sanhedrin* 21b). Sometime during the period beginning with Ezra, Israel made a transition from the Prophet/Temple Priest arbiter of Jewish law to the proto-rabbinic exegetical model. This new era had a formative role in creating the vast body of rabbinical definition, exposition, and innovation of Torah. It gave birth to the novel idea and tradition of identifying the newly discovered *etrog*, with its unique aroma and beauty, as the biblical "goodly fruit/tree."

The Bible, at least through the era of Ezra and Nehemiah, had no knowledge of the *etrog*. At some point after the fifth century but before the second century BCE, the *etrog* was introduced by happenstance and prized as a noble, princely fruit. This stature of the *etrog* was then co-opted for the undefined "goodly fruit/tree", thus elevating it, along with the three biblically defined species, to form the *arba'ah minim*.

**NOTES**

1. The biblical description *hadar*, translated as "gorgeous", "splendid" or "goodly" in the Jewish Publication Society 1917 edition used here, can refer to either the fruit or the tree. The Septuagint’s English translation has "goodly fruit of trees" whereas the JPS translates it as the "fruit of goodly trees." TB *Sukkah* 35a evidently faced the same dilemma and therefore stated: "Our Rabbis taught in a *baraïta* that peri etz *hadar* refers to a tree whose bark has a taste identical to its fruit. Say that this refers to the *etrog*" (my translation). In this paper we accommodate both possibilities by translating the Leviticus 23:40 phrase as a *goodly fruit/tree*. 
2. This problem was already partly identified by Erich Isaac in an article entitled "Influence of Religion on the Spread of Citrus," published in Science, vol. 129, no. 3343 (January 1959). The article focuses on the origins of the etrog which, the author argues, came from Arabia, Jewish ritual having helped to introduce the citrus fruits into Mediterranean lands.

3. See the discussion of this tree's exact identification in Mordekhai Zer-Kavod, Da'at Mikra: Ezra u-Nehemyah (Jerusalem: Mossad Harav Kook, 1994) p. 107, note 17.


7. In the Latin term Citrus medica for citrons, medica has nothing to do with "medical." It actually reflects the belief of the Roman who coined the Latin name that the fruit came from Persia (Media).


10. See also Arthur Schaffer, "The Agricultural and Ecological Symbolism of the Four Species of Sukkot," Tradition, 20(2), (Summer 1982) p. 138, where he discusses the controversy as to when the citron was introduced to the Land of Israel.

11. See the following examples: Rema: Responsa 226; Levush 649:4; Magen Avraham on Shulhan Arukh Orah Hayyim 648:23; Taz 648:3; Shulhan Arukh ha-Rav 648:31, Mishnah Beruriah 648:65.