

Identification of the Stones of the Choshen According to the Septuagint and the Aramaic Translations

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Table of Contents

Identification of the Stones of the Choshen According to the Septuagint and the Aramaic Translations.....	1
Table of Contents.....	2
A. The Selection of the Septuagint as the Basis for This Study.....	4
1. Its Antiquity.....	5
2. Its Prominence Among the Ancients.....	7
3. Its Authority Among Other Early Jewish Translators.....	11
4. The Acceptance of the Septuagint's Identification by the Sages of Israel.....	14
5. The Abundance of Traditions Supporting the List of Stones in the Septuagint.....	16
6. The Accuracy of the Septuagint.....	20
7. The Feasibility of Identifying the Stones Listed in the Septuagint.....	21
B. Verifying Identifications Through Cross-Referencing the Septuagint Itself.....	23
C. Additional Sources.....	23
1. The Aramaic Translations.....	23
2. The Peshitta.....	27
3. Arabic Translations.....	28
4. The Samaritan Translations.....	30
5. Midrash Bamidbar Rabbah on the Colors of the Tribal Flags.....	30
D. Additional Methods for Identifying the Stones.....	32
1. Etymological Analysis.....	32
2. The Rarity and Availability of Stones in Ancient Times.....	33
3. Descriptions of Stones in Tanach and Midrash.....	34
E. Identifying the Choshen Stones Using These Methods.....	35
Odem ((אודם).....	35
Pitda ((פטדה).....	36
Barekes ((ברקת).....	38
Nofech ((נופך).....	38
Additional reasons to support the Aramaic translation of these stones:.....	42
Conclusion:.....	50
Returning to the Corrected Identifications:.....	50
The Identity of the Choshen Stones: A Reevaluation.....	52
The Question on Rav Saadia Gaon (Rasag).....	52
The Strength of Sapir in Midrash.....	53
The Identification of Adamas.....	54
Iaspis (ἰάσπις or ἰασπίς) – Yahalom ((יהלום).....	55
Ligurion (Λιγύριον) – Leshem ((לשם).....	57

Achatis (Ἀχάτης) – Shevo ((שבו	59
Amethystos (Ἀμέθυστος) – Achlama ((אחלמה	61
Chrysolithos (Χρυσόλιθος) – Tarshish ((תרשיש	62
Beryllion (Βηρύλλιον) – Shoham ((שוהם	66
Onychion (Ὀνύχιον) – Yashfeh ((ישפה	70
Appendix A – The Proposed Identifications:	72
Appendix B1 – Targum Onkelos and Targum Aquilas	74
Appendix B2 – The Approach of Rabbi Nathan Adler (from the Introduction to Nefesh HaGer on Targum Onkelos)	79
Appendix B3 – On the Various Translations in Divrei Yemei Yerachme'el, from the Work Called Seder Olam	81
Appendix B4 – Statements of Chazal on Onkelos and Aquilas	82
Tosefta, Demai, Chapter 6	82
Tosefta, Shabbat, Chapter 7	82
Babylonian Talmud, Megillah 3a	82
Midrash Tanchuma (Buber), Parashat Lech Lecha, Siman 6	82
Jerusalem Talmud, Demai, Chapter 6	82
Masechet Semachot, Chapter 8	83
Jerusalem Talmud, Megillah, Chapter 1	83
Kohelet Rabbah, Parasha 7	83
Appendix C – The Stones in Targum Yerushalmi	83
Correction 1: Nofech → Zamargadin (instead of "Kadkadina")	85
Correction 2: Yahalom → Kadkadina (instead of "Ein Agala")	85
Correction 3: Shevo → Bedolcha (instead of "Biryolin")	86
Correction 4: Ahlamah → Ein Agala (instead of "Zamargadin")	86
Correction 5: Shoham: Birulin (instead of 'Bdolcha')	86
Appendix D – On the Names of the Stones in Shemos Rabbah	87
Appendix E – On the Colors in Bamidbar Rabbah	92
Appendix F – On the Confusion in the Translation of Barekes and Nofech as Reflected in Sefer Ben Sira	94
The Pesukim:	94
Comparison of the Hebrew Versions and Translations	95
Unit 1 (Pesukim A & B):	95
Unit 2 (Pesukim C & D):	96
Analysis of the Variants	97
Appendix G – A Comparative Table of the Aramaic Translations:	98

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A. The Selection of the Septuagint as the Basis for This Study

The issue of identifying the stones of the Choshen has garnered significant interest, and numerous studies have been written on the subject, proposing various and sometimes far-fetched identifications for the Choshen stones.¹ The identification of these stones holds critical significance regarding the offering of sacrifices in the present time, according to the opinion of those Rishonim who maintain that sacrifices cannot be offered in a state of impurity without the Tzitz,² and that there is no Tzitz without the rest of the garments of the Kohen Gadol, including the Choshen with its twelve stones.³

¹ Due to the vast amount of research on this subject, we will suffice here with citing a few of the more accessible or fundamental articles:

The first to thoroughly investigate this topic from all angles was R' Avraham the Physician from 'Shaar Aryeh (Porta Leona)', as cited below (note 35), in his sefer Shiltei HaGiborim, Mantua 1612, Chapter 46; reprinted by Machon Yerushalayim, Jerusalem 2010, pp. 200-219.

Y.D. Eisenstein, "Avnei Ephod; Avnei Milu'im," in Otzar Yisrael, Vol. 1, New York 1907, pp. 69-71.

D. Ginzburg, "The Mineralogical Identification of the Choshen Stones," in: A. Chacham (ed.), Chumash Daas Mikra, Shemos Vol. 2, Jerusalem 1991, Appendix pp. 67-77.

Aryeh Kaplan, The Living Torah, New York 1980, Exodus 28:17-20.

G.F. Kunz, The Curious Lore of Precious Stones, New York 1913, Chapter 8.

J.S. Harris, "The Stones of the High Priest's Breastplate," ALUOS, Vol. 5 (1963-1965), pp. 40-62.

Recently, Dr. Zohar Amar has researched the subject of gemstones in Tanach extensively and has written a comprehensive book on the matter, which is expected to be published soon.

Additional articles have been cited within the body of the text and referenced accordingly.

² See at length in the Encyclopedia Talmudit, entry Tumah B'Tzibur.

³ Rav Moshe Sofer, Shu"t Chasam Sofer, Yoreh De'ah 271, writes to Rav Akiva Eiger regarding Rav Tzvi Hirsch Kalischer's initiative to bring korbanos:

"And in any case, what my father-in-law, the Gaon, wrote—what should we do about tumah, lineage of Kohanim, and the Choshen stones?"

See what Rav Yitzchak Yosef wrote in Yalkut Yosef, Orach Chaim Vol. 3, Jerusalem 2006 (Birkas HaShachar - Krias Shema), Siman 50, note 1, p. 169, regarding the possibility of bringing korbanos in our times:

"And if the issue is the Choshen stones, they can certainly be obtained, as their names and descriptions are mentioned by Rabbeinu Bachya and in Tiferes Yisrael (Introduction to Seder Moed)."

Many sources from the time of Chazal through the Rishonim discuss the stones of the Choshen, with their names being translated into different languages. In this article, we will focus primarily on the Septuagint, and based on it, together with additional sources, we will attempt to propose an identification that is as precise and well-founded as possible.

The sources available to us allow us to propose an identification of the stones of the Choshen. The choice of the Septuagint as the central authority for this research is based on several reasons:⁴

1. It's antiquity.
2. Its recognition as a well-known translation among early scholars.
3. Its authority [with regard to the stones of the Choshen] among other Jewish translators.
4. The acceptance of its identification of the Choshen stones by the sages of Israel.
5. The abundance of testimony supporting this tradition.
6. Its precision.
7. Its ability to identify the stones that appear in it.

In this chapter, we will discuss each of these reasons one by one.

1. Its Antiquity

⁴ Our discussion here regarding the authority of the Septuagint applies similarly to other areas of identification, such as the ingredients of the Ketores and other materials required for the Beis HaMikdash, the identification of animals and birds, locations mentioned in Tanach, and more.

According to Jewish tradition, the Septuagint was composed by seventy-two elders⁵ at the request of King Ptolemy. It is universally agreed among scholars⁶ that it was known at least two hundred years before the destruction of the Second Temple.⁷ This is not the place to delve into this complex topic, but the prevailing view follows what is recorded in Chazal and detailed more explicitly in the *Letter of Aristeas*,⁸ which states that the translation was completed in the year

⁵ *"It once happened with King Ptolemy that he gathered seventy-two elders, placed them in seventy-two different chambers, and did not reveal to them why he had convened them. He then entered each one's chamber and said to them: 'Write for me the Torah of Moshe, your teacher.' Hashem placed wisdom in the heart of each one, and they all arrived at the same translation"* (Megillah 9a, with a similar version in Maseches Sofrim, Chapter 1). In **Maseches Sefer Torah** (which is another version of the early chapters of **Maseches Sofrim** and appears to be earlier than it), Chapter 1, the story is recorded with some variations, and there the version states *"seventy elders"* (similarly found in the **Bavli, Megillah**, manuscript Göttingen, University Library Ms. Hebr. 3 Opp. Add. Fol. 23). However, this is not the case in the other manuscripts I examined (**Oxford, Bodleian Library Hebr. 140; London, British Library Harley 366; Munich, State Library Hebr. 95; Munich, State Library X 893 T 141 5508; Margoloth 400; New York, Columbia University Library**).

The words of Chazal generally align with what is recorded in the **Letter of Aristeas** (see below, note 8).

In **Maseches Sofrim**, prior to the story of the seventy-two elders, there appears another story: *"It once happened that five elders wrote the Torah in Greek for King Ptolemy, and that day was as difficult for Yisrael as the day the Eigel was made, for the Torah could not be translated properly."* Similarly, in **Avos D'Rabbi Nosson**, version B (Chapter 37), it states: *"Five elders wrote the Torah for Ptolemy in Greek."* It stands to reason that these are not two separate stories but rather two versions of the same account (and the phrase **"again, an event"** in **Maseches Sofrim** likely means *"another version of the same event"*), as we have no other source indicating that two separate translations of the Torah into Greek were commissioned by King Ptolemy.

What is surprising, however, is that academic research indeed finds traces of five different translators within the **Septuagint's translation of the Torah**—see **H. Kim, Multiple Authorship of the Septuagint Pentateuch, Jerusalem 2007**.

⁶ see also **E. Tov** (below, note 155), and for a survey of opinions and support for this conclusion, see **N.F. Marcos, The Septuagint in Context, Leiden 2000, Chapter 3, Paragraph C. Historicity [of Pseudo-Aristeas] pp. 39-40**.

⁷ The earliest surviving manuscripts of the **Septuagint's translation of the Torah** date to several centuries after its original composition. However, from quotations found in early works (including references to the **translation of the Choshen stones**), it is evident that the **text that has reached us is highly accurate**. Furthermore, when comparing the earliest extant manuscripts, it is clear that they are consistent with each other. Even from early translations into other languages, we can see that the text preserved in the early manuscripts is reliable.

⁸ A letter describing the circumstances of the writing of the **Septuagint**, which also includes descriptions of **Yerushalayim**, the **Beis HaMikdash**, and several other topics. This letter is found in early manuscripts of the **Septuagint**, and large portions of it were quoted at length by **Josephus** (*Antiquities of the Jews*, Book 12, Sections 11–118) and **Philo** (*Life of Moshe*, Warsaw 1895, pp. 72–76) in their explanations of the reason for the **Septuagint's** translation. According to the account within the letter, it was written by a **Greek non-Jew** from **Egypt** who traveled to **Eretz Yisrael** and recorded the entire story of the translation—how **King Ptolemy** sought to have a translation of the **Torah** prepared for his royal library. However, according to scholars, the letter was actually composed by a **Jew**, who attributed his pro-Jewish sentiments to a fictional Greek author.

For more on this letter, see:

280 BCE.⁹ In any case, there is no doubt that it was written during the Second Temple period, either in or near Eretz Yisrael, and it was certainly known there at a time when the Choshen was still in use. Thus, its identification of the Choshen stones falls under the category of *mita de'avida l'igluyi*—a matter that was well-known and observable.

2. Its Prominence Among the Ancients

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- **R' Avraham Min HaAdumim**, *Me'or Einayim*, Vol. 2, Vilna 1866, fol. 12a–32a, where he translated the entire letter into **Lashon HaKodesh** and analyzed it comprehensively.
 - A **Hebrew translation** was published in **A. Kahana**, *The Apocryphal Books*, Vol. 2, Tel Aviv 1937, pp. 1–71, along with an introduction, notes, and comparisons to various versions of the letter and its account.
 - For an extensive study on the letter and **Chazal's** references to the writing of the **Septuagint**, see **A. Wasserstein, D.J. Wasserstein, The Legend of the Septuagint, Cambridge 2006**.

⁹ For a comprehensive review of all the proposed dates for the writing of the **Septuagint**, see **N. Collins, The Library and the Septuagint, Leiden 2000, Chapter 2**.

The Septuagint was widely known among Chazal and early scholars.¹⁰ Chazal described it as a

¹⁰ On the reliability of the **Septuagint's** translation in relation to **Chazal's** words and **Midrashim**, see **Rabbi Y. Babad**, "Halacha and Aggadah in the Septuagint," **Tzefunos**, Vol. 19 (1993–1994), pp. 68–73. His discussion there is merely a sampling of what is cited in the works of **Septuagint scholars**. For Chazal's general approach to the **Septuagint**, see **Rav Reuven Margolies**, **HaMikra VeHaMesorah**, Jerusalem 1989, pp. 59–62, as well as the book by **Wasserstein** (above, note 8).

translation composed by the sages of Israel,¹¹ *al pi ruach hakodesh* (by divine inspiration)¹².

¹¹ In **Midrash Tanchuma, Shemos 22**, and **Tanchuma Yashan, Shemos 19**, the translators of the **Septuagint** are referred to as “our Rabbis”: “*This is one of the things that our Rabbis changed.*” A similar wording appears in **Midrash HaGadol (Shemos 4:20)**. In **Yerushalmi Megillah (1:9)**, they are called “the Chachamim”: “*Thirteen things the Chachamim changed for King Ptolemy.*” In other sources, they are referred to as “elders” (**Bavli Megillah 9a**; **Maseches Sofrim 1:7**; and in **Midrash Lekach Tov on Bereishis 1:1**, they are called “the elders of Yisrael”).

Aside from this, it is clear from the **Talmud Bavli** that this translation was **accepted by the Chachmei Yisrael**. This can be seen from the **Mishnah (Megillah 1:8, Sofrim 15:1)** where **Rabban Shimon ben Gamliel** states: “*Even for Sefarim [i.e., excluding Tefillin and Mezuzos, which must be in Lashon HaKodesh], they only permitted Greek.*” The **Bavli (Megillah 9a)** cites a **Beraisa**: “*Rabbi Yehuda said: Even when our Rabbis permitted Greek, they only permitted it for a Sefer Torah, due to the incident with King Yannai.*”

The Rambam explains why this incident was the basis for accepting the translation (**Peirush HaMishnayos, Megillah 2a**):

“They only permitted it to be written in Greek, and the reason is because Chazal translated the Torah into Greek for King Ptolemy, and that translation became so widespread among them that the language became as if it were Ashuris for them. As such, they said that Greek is valid for Sefarim.”

In **Yerushalmi Megillah (ibid.)**, **Rabban Shimon ben Gamliel’s** opinion is explained differently: “*They examined and found that the Torah can only be translated properly into Greek.*” If this is meant to complement the **Bavli’s** statement—“**due to the incident with Ptolemy**”—then both **Talmudim** are essentially saying the same thing: *That from Ptolemy’s project, they saw that the Torah could indeed be translated into Greek in an acceptable manner, as per the Rambam’s explanation.*

There is evidence to support this assumption that **Yerushalmi** is referring to **Ptolemy’s translation**, since later in the same passage (following a long tangential discussion on **halachos of writing Sifrei Torah and Tefillin**), the **Yerushalmi** brings: “*Thirteen things the Chachamim changed for Ptolemy.*” This is noteworthy because until this point, **Yerushalmi** had not even discussed a specific translation into Greek!

Interestingly, the **opposite view** appears in **Maseches Sofrim (1:7)**: “*It once happened that five elders translated the Torah into Greek for Ptolemy, and that day was as difficult for Yisrael as the day the Eigel was made, because the Torah could not be translated properly.*” It is likely that **later Chachamim** opposed the Greek translation, whereas it seems that the **Tannaim praised it**. The reason may be that **early Christians adopted the Septuagint**, and since it became a **widely available** translation of the Torah among non-Jews, it played into their hands.

This phenomenon is hinted at in **Midrash Tanchuma (Buber, Vayera 6)**:

“Rabbi Yehuda HaLevi the son of R’ Shalom said: Moshe wished for even the Mishnah to be written down, but Hashem foresaw that the nations of the world would translate the Torah and read it in Greek, and they would claim: ‘We too are Yisrael!’”

It is reasonable to assume that this is also why **Chazal preferred Targum Aquilas over the Septuagint**, since it did not contain Christian distortions. This may also be why **Chazal did not explicitly engage with interpretations from the Septuagint**. See further in the writings of **Rav Reuven Margolies** (above, note 10).

The **Maharshal (Yam Shel Shlomo, Bava Kama 4:9)** takes this even further when discussing the **prohibition to alter Torah texts due to fear of the government**:

“As for what it says in the first perek of Megillah (9a) regarding the incident with Ptolemy, where he gathered 72 elders and they changed the Torah—there, it was decreed from Heaven that they should all

According to scholars of the Septuagint, in several Jewish communities where Greek was spoken—primarily in Egypt—it was even used for public Torah readings,¹³ and it may have even

agree, and it was similar to Ruach HaKodesh. As it states there: 'Hashem placed wisdom in the heart of each one,' and it was according to Divine speech."

¹² The **Bavli Megillah 3a** explains that they merited **Heavenly assistance** in their translation, as they all arrived at the same wording miraculously. The **Maharshal (cited above)** states this as well.

Philo (*Life of Moshe*, above, note 8, p. 74) takes this even further, describing their precision as **akin to prophecy**. While we do not accept his claim, it is reasonable to assume that this **was the common perception in their times**, which could only have arisen from an overall impression of the accuracy of the **Septuagint**.

¹³ In the **Codex Justinianus** (a collection of Roman laws from the time of **Justinian** and slightly before; Law No. 146, from the year **553 CE**), it is written as follows (*my translation from Kahle's Greek translation*):

"According to what has been transmitted to us, we have learned that there are those who hold on to the Hebrew language and insist on using it exclusively for the reading of sacred texts, while others wish to use the Greek language as well, and the debate over this matter has been long. Upon hearing this, we found it preferable to allow those who wish to use the Greek language [or any other language more suitable and understandable to the audience in a given place] for the reading of sacred texts. Therefore, we decree that wherever there are Jews who desire it, the sacred texts shall be read in Greek [or in our mother tongue, i.e., Latin, or any other language suitable for the local audience], so that the text may be understood by those present and guide them in their lives and actions.

Furthermore, interpreters (*exegetes*) shall not be permitted to corrupt the text under the pretense that only they understand it, relying on people's lack of attention to their distortions. However, those who read in Greek must use the **Septuagint**, the most accurate translation of all, which is especially superior due to the miracle that occurred in its making, where the translators worked in separate pairs in different locations, yet all arrived at the same text... However, so as not to deprive the Jews of other translations, we permit them, if they so choose, to use **the translation of Aquilas**, despite the fact that its author was of foreign descent and that his translation deviates significantly from the **Septuagint**."

For the full text of the decree, see: **Paul E. Kahle, The Cairo Geniza, New York 1960, Appendix I.**

Indeed, this custom continued into the **16th century**. **Mahar"m Padua**, in his **Shu"t (Responsa)**, Venice 1553, Siman 78, was asked about a community (apparently in **Crete**) that read the **Haftarah of Yonah** on **Yom Kippur** in Greek. See also:

- **N. de Lange**, *The Greek Bible in the Medieval Synagogue*, in *Proceedings of Scholion Conference on Jews and Christians in Byzantium*, Jerusalem 2006, pp. 373-374, where he cites two medieval **machzorim** (15th century manuscripts) that include a **Greek translation of Sefer Yonah** for public reading on **Yom Kippur**.

It is also possible that this phenomenon of **Greek translations** is what the **Geonim** referred to when they ruled that the Torah should not be translated into the vernacular, except using the authoritative **Targum Onkelos**. See:

- **Rav Natronai Gaon, in Seder Rav Amram Gaon**, ed. Goldschmidt, p. 76 (=Teshuvos Rav Natronai Gaon, ed. Brody, Orach Chaim Siman 45).
- Cited also in the **Tur (Orach Chaim 145)**:
"Those who do not recite the standard Targum, saying instead: 'We do not need to use the

replaced the Hebrew text in some places.¹⁴ These facts demonstrate that in ancient times, the Septuagint was regarded as an accurate translation.

3. Its Authority Among Other Early Jewish Translators

Following the composition of the Septuagint, and seemingly influenced by it, three additional Greek translations were produced: those of Aquila,¹⁵ Symmachus,¹⁶ and Theodotion.¹⁷ Aquila's translation, also referred to as *Aquilos*¹⁸ or *Aquilas*¹⁹, is particularly significant, as Chazal endorsed it, stating that it was composed under the guidance of Rabbi Eliezer and Rabbi Yehoshua (*Yerushalmi Megillah* 1:9). His translation is also cited in several places in the *Yerushalmi* and *Midrashim*.²⁰

Rabbinic Targum; rather, we will translate in our own language as the congregation understands'—they do not fulfill their obligation."

- **Teshuvos HaGeonim - Sha'arei Teshuvah**, Constantinople 1575, Siman 330:
"And this Targum that Chazal referred to is the one in our possession, but other translations do not have the same sanctity as this Targum."

¹⁴ This was also the case with **Philo of Alexandria**, who apparently only knew **Tanach** through the **Septuagint**. A proof of this can be found in his **homily on creation** in his work **Allegorical Interpretation** (see: **F.H. Colson & G.H. Whitaker (translators), Philo, Loeb Classical Library, Cambridge 1929 (reprinted 1981), Vol. 1, pp. 200-201**). There, he writes that the "green stone" in the pasuk *"there was b'dolach and the green stone"* (likely referring to **Shoham**) is **Sapir**—a mistake he would not have made had he been familiar with the **Hebrew text**.

¹⁵ This is not the place to conclude whether **Aquila the Ger**, who translated the **Torah** into Greek, is the same person as **Onkelos the Ger**, who translated it into **Aramaic** before **Rav Eliezer** and **Rav Yehoshua**. However, since this issue is very relevant to our research, we have dedicated **Appendix B** to this discussion. In any case, there is no doubt that even if they are not the same person, just as we accept **Targum Onkelos** as authoritative based on what the **Bavli** says about him, we should similarly accept the words of **Aquila**, as per the **Yerushalmi**.

¹⁶ According to **early Church fathers**, **Symmachus** belonged to the sect of the **Ebionites** (a group of Jewish Christians). See:

- **F. Williams (translator), The Panarion of Epiphanius of Salamis, Leiden 2009, pp. 131-165.**

¹⁷ According to **Epiphanius of Salamis** (*a contemporary and opponent of Origen*, see note 49), **Theodotion** was a **Samaritan who converted to Judaism**. Some have suggested a connection between **Theodotion** and **Yonasan ben Uziel**, as both names have the same meaning (*"Hashem gave"*). See further in note 307.

¹⁸ This spelling appears in several places, such as in **Midrash Rabbah (in printed editions)**, and some **Acharonim** have also recorded it this way, likely due to the influence of the name **Onkelos**.

¹⁹ **Bereishis Rabbah, Parasha 1** (also in most manuscripts).

²⁰ See, for example: **Yerushalmi Shabbos 6:4; Yoma 3:8; Sukkah 3:5; Megillah 2:4; Bereishis Rabbah 21:1, 46:3**, and others. Altogether, I found **twelve pesukim** for which **Chazal** cited **Aquila's translation**, five from **Kesuvim**, two from **Torah**, three from **Nevi'im**, and one whose source is uncertain (**Torah** or **Kesuvim**).

These include:

- **Two from Torah**, both in **Vayikra**:
 - **Vayikra 19:20** ("תרגם עקילס הגר לפני ר' עקיבא, והיא שפחה נחרפת" – "לאיש – בכתושה לפני איש")
 - **Vayikra 23:40** ("אמר רבי תנחומא: תרגם עקילס הדר – הידור")

At the beginning of the third century, a Christian scholar named Origen²¹ noted discrepancies between the Septuagint and the Hebrew Masoretic text. In an attempt to "correct" the Septuagint and align it with the Hebrew text, he compiled a multi-columned edition of the Tanach known as the *Hexapla*, which displayed six parallel columns: the Masoretic text, a transliteration of the Hebrew text in Greek letters, an edited version of the Septuagint (with annotations marking additions and omissions), and the three additional Greek translations.

The original *Hexapla* was lost,²² along with these other translations. However, many early Christian writings—particularly those of Church Fathers who frequently cited it²³—contain numerous quotations from it. Additionally, ancient manuscript margins of the Septuagint include extensive citations from these translations.²⁴ These fragments were later compiled and published.²⁵ Examination of the various references to the Choshen stones throughout Tanach indicates that the later translators did not dispute the Septuagint's identifications for most of the stones.

- **Three from Nevi'im**, all in **Yechezkel**:
 - **Yechezkel 16:10** ("ואליבִּישׁךְ רַקְמָה – לֵה נִיאופִים, מֵהוּ לְבִלְהָ? תִּרְגֹּם עֵקִילֵס: פִּילָא פּוֹרְנִי")
 - **Yechezkel 24:23** ("וּבֵת יִבְלָה – תִּרְגֹּם עֵקִילֵס: אִיפִלִּיקֶתָא")
 - **Yechezkel 23:43** ("וְאָמַר הַנֶּפֶשׁ – תִּרְגֹּם עֵקִילֵס: אֶסְטוֹמוֹבְרִיָּא, דְּבַר שְׁנִיתָן עַל בֵּת הַנֶּפֶשׁ")
- **Six from Kesuvim**:
 - **Daniel 5:5** ("תִּרְגֹּם עֵקִילֵס: לִקְבֵּל נְבִרְשֶׁתָא – לִקְבֵּל לְמִפְרָס")
 - **Daniel 8:13** ("לְפִלְמוֹנִי – תִּרְגֹּם עֵקִילֵס: לְפִנִּימִי")
 - **Esther 1:6** ("חֹר כִּרְפֵס וְתַכְלֵת – תִּרְגֹּם עֵקִילֵס: אִיִּירִינוֹן קִרְפִּסִינוֹן")
 - **Tehillim 48:15** ("וְהוּא יִנְהַגֵּנוּ עַל־מֹת – תִּרְגֹּם עֵקִילֵס: אֶתְנָא סִירָא")
 - **Mishlei 10:8, 21** ("מֹת וְחַיִּים בִּיד הַלֶּשֶׁן – תִּרְגֹּם עֵקִילֵס: מִיִּצְטָרִי מוֹכִירִין")
 - **Mishlei 25:11** ("תְּפֹחִי זֶהָב בְּמִשְׁכִּיּוֹת כֶּסֶף – תִּרְגֹּם עֵקִילֵס: חֲזוֹרִין דְּדָהָב בְּגוֹ דְּסִקְרִין דְּכֶסֶף")
- **One with uncertain attribution (either Torah or Kesuvim)**:
 - **Bereishis 17:1; 35:11, or Iyov 13:3** ("אֲנִי אֵל שֶׁ-דִּי – תִּרְגֹּם עֵקִילֵס: אֶקְסִיוֹס וְאִיקְנוֹס"), cited in Bereishis Rabbah 46).

²¹ **Aquila** is referenced by **early Church Fathers**, around **240 CE**.

²² During the **Muslim conquest of Eretz Yisrael (638 CE)**, the city of **Caesarea** was burned down, where one of the two known copies of Aquila's complete translation had been stored.

²³ **Rav Avraham Min HaAdumim**, in *Me'or Einayim* (above, note 8), Vol. 2, p. 112, discusses **Aquila and Onkelos** extensively and records citations of **Aquila's translation** in early Christian sources:

"When we hear Christian scholars mentioning him, our soul longs for his work, and we turn our ears like a funnel to hear more."

²⁴ Aside from a **few surviving fragments** found in the **Cairo Geniza** and other locations, Aquila's translation has mostly been lost.

²⁵ A partial bibliography:

- **B. de Montfaucon**, *Hexaplorum Origenis quae supersunt*, Paris 1713 (reprinted in abridged form by **K.F. Bahrdt**, Leipzig 1769).
- **F. Field**, *Origenis Hexaplorum quae supersunt*, Oxford 1875.

Starting in the **20th century**, scholars began **recompiling** scattered **Aquila citations** from numerous sources, leading to new critical editions:

- **The Old Testament in Greek**, Cambridge 1906–
- **Septuaginta: Vetus Testamentum Graecum**, Göttingen, 1931–

Thus, we have confirmation from Aquila and the other Jewish translators regarding the Septuagint's identifications of the Choshen stones. Indeed, Jerome, who used the *Hexapla* for his Latin *Vulgate* translation, wrote in a letter regarding the priestly garments²⁶ that the translators only disagreed on the identification of the *bareket* and *tarshish*.²⁷

In the year 617 to their count, Paul translated—aside from these citations—before the "Hexapla" was lost, in the year 615, a certain Matila (a priest from the city of Antioch) translated Origen's "corrected" version of the Septuagint into Syriac (see further on this). In the margins, he noted disagreements among the translators. Regarding the stones of the Choshen, he did not mention any disputes among the translations, neither in Sefer Shemos nor in other places in Tanach where one or more of these stones are mentioned. It therefore seems that they all translated the stones of the Choshen as they are.

Josephus Flavius mentions the Choshen stones twice,²⁸ in accordance with the Septuagint, though with slight variations in order, likely due to copyist errors.²⁹ This source may be the most significant in confirming the Septuagint's identification—especially if we assume that Josephus wrote from personal familiarity with the Choshen stones.³⁰ Even if he did not see the stones himself, he had the opportunity to observe them or hear about them from eyewitnesses. It is

²⁶ See further below, **note 53**.

²⁷ The debates surrounding these translations will be discussed later in the main article.

²⁸ **Antiquities of the Jews**, Vol. 1, A. Schur edition, Jerusalem 1939, Book 3, Paragraph 168, Chapter 7, Section 5;

The Jewish War, Vol. 2, A. Schur edition, Jerusalem 1946, Book 5, Paragraph 234.

²⁹ In Jerome's letter regarding the priestly garments (see below, note 49), although he quoted Josephus regarding other aspects of the priestly garments, he did not mention any changes in the order of the stones. This indicates that the order of the stones in front of him was still the same as what appears in the Septuagint. If, indeed, there was a change in Josephus's version, it is likely that Josephus wrote from memory and got mixed up (unless we say that he actually saw them himself in Rome), which would explain why he contradicts himself regarding the order of the stones from one book to another.

³⁰ Josephus writes in passing (**Antiquities of the Jews**, **The Jewish War**, Vol. 2, A. Schur edition, cited above in note 28), Book 6, Paragraph 93, that a certain kohen handed over some of the Beis HaMikdash treasures to the Romans, including "the garments of the Kohen Gadol, which had precious stones embedded in them." These were taken to Rome and placed in the "Temple of Peace" (a building erected in honor of the victory over the Jews, see **Antiquities of the Jews**, **The Jewish War**, A. Schur edition, cited above in note 28, Book 7, XLI, Paragraphs 158–162). It is highly likely that Josephus saw them there, as he was in Rome along with the other Jews who were taken captive after the destruction of the Second Beis HaMikdash. It is also reasonable to assume that just as the Tzitz was visible in Rome (Sukkah 5a), the stones of the Choshen were also visible along with it.

On the other hand, **Avos d'Rabbi Nosson** (Chapter 41, Nusach Aleph in all manuscripts; however, this section does not appear in Nusach Beis at all) states that the garments of the Kohen Gadol were hidden away, and only the Tzitz was in Rome. [Of course, there is room to ask—even if Josephus saw the stones, who says he would recognize their names? After all, he was a historian, not an expert in gemstones. However, from Greek and Roman literature, it is clear that ordinary people in those periods were far more knowledgeable about gemstones than regular people today (for several reasons, including the great importance they placed on gemstones). If there was a glaring contradiction between what he saw and what was written in the Septuagint, he would likely have noticed it.]

therefore unlikely that he would have relied on the Septuagint unless he considered it a reliable source.

4. The Acceptance of the Septuagint's Identification by the Sages of Israel

Even among the sages of Israel who identified the Choshen stones, it appears that they relied either on the Septuagint or on other sources derived from it, or at the very least, that their tradition stems directly or indirectly from it. Identifications of the Choshen stones can be found in the works of the **Chizkuni**,³¹ Rabeinu Bechaye,³² the Abarbanel,³³ R' Moshe Provinciali,³⁴ R' Avraham HaRofeh,³⁵ and an anonymous addition in a manuscript of Rashi's commentary (Munich Manuscript).³⁶ The majority of the identifications proposed by these commentators

³¹ Rabeinu Chizkiyah ben Manoach, from 13th-century France or Provence. I checked his words in three manuscripts:

- **Paris, Neubauer Collection 243**
- **Oxford, Bodleian Library, Mich. 568**
- **Munich, State Library, Hebr. 224**

(One manuscript is attributed to the author himself, but many have cast doubt on this attribution—see G. Freibur, *On the Text of Chizkuni and the Version in Rabbi Shavel's Edition*, in *Quntres: An Online Journal for the History, Culture, and Art of the Jewish Book*, Vol. 3, No. 1 (2012).)

³² Rabeinu Bechaye ben Asher ibn Halawa from Spain (a talmid of the Rashba) began writing his commentary in 1291. I checked his words in many manuscripts, and the names of the stones remained consistent, aside from minor spelling variations.

³³ Rabeinu Yitzchak ben Yehuda Abarbanel, one of the exiles from Spain.

³⁴ Cited by his talmid, R' Avraham HaRofeh (**Shiltei HaGiborim**, Chapter 46, p. 202 in the Jerusalem Institute edition).

³⁵ A talmid of R' Moshe Kazis, born in 1542 and passed away in 1612, shortly after printing his sefer. See the introduction to the Jerusalem 2010 edition (cited above, note 1); Y. Katan, *Rabbi Avraham HaRofeh from Sha'ar Aryeh and the Chilazon of Techeiles*, *V'Hayah Lachem L'Tzitzis*, Vol. 4 (2010), pp. 7–11.

³⁶ **Manuscript of Munich, State Library:**

"I wrote these commentaries on the twenty-four books... in the year 4993 from Creation" (1233 CE). The manuscript includes numerous additions from various sources (including Chizkuni and other well-known Torah commentators). Therefore, this list should not be taken as Rashi's definitive opinion, but rather as an anonymous translation—especially since this list does not appear in any other Rashi manuscript.

Regarding the identification of two of the Choshen stones, we have references from Rashi:

- In his commentary on Yechezkel and Maseches Avodah Zarah regarding *Nofech*.
- In Yechezkel regarding *Tarshish*.

In both cases, the Septuagint translates them as they appear in this manuscript, which may support the idea that this list is indeed connected to Rashi's Beis Medrash.

I thank Rav Gur Aryeh Herziger for bringing this list of stones in this manuscript to my attention.

appear in the Septuagint,³⁷ even if some are in a different order—an indication that their source was likely the Septuagint.

In **Midrash Shemot Rabbah**, there is another Greek translation of the stones,³⁸ which mostly (seven stones, plus another in a different order) corresponds to the Septuagint. This suggests that it was based on a combination of the Septuagint and Targum Yerushalmi.³⁹ The many discrepancies between manuscripts regarding the stone names, as well as comparisons to known stone names, indicate that the names in the Midrash are corrupted in all manuscripts,⁴⁰ making it difficult to use this source as a research basis on its own. Nevertheless, it serves as supporting evidence for using the Septuagint as a source for identifying the Choshen stones and can be regarded as an alternate textual witness to the Septuagint. It is important to note that **Midrash Shemot Rabbah** is not a unified work with **Midrash Bereshit Rabbah**,⁴¹ but is significantly later.⁴²

³⁷ **Occurrences of this stone list in various sources:**

- In **Rashi, Munich Manuscript, and Chizkuni**: 10 times.
- In **Rabeinu Bechaye and Shiltei HaGiborim**: 8 times.
- In **R' Moshe Provinciali**: 7 times.
- In **Abarbanel**: 6 times.

For a detailed breakdown of the names in various commentaries, see Appendix H.

³⁸ One who examines the words of the Midrash will see that the section with the Greek translation of the stones was inserted into R' Yitzchak's words (and was not presented as if R' Yitzchak himself said it). Indeed, R' Yitzchak's statement appears in **Pesikta** (Ish Shalom edition, Piska 47) without the list of the stones' Greek names.

³⁹ See below, Appendix G. Also see:

- S. Lieberman, *Greek and Hellenism in Eretz Yisrael*, Jerusalem 1963, p. 44 and onward, where he corrected the Midrash's stone list based on an Oxford manuscript and discussed it extensively.
- B. Z. Becker: *Une Ancienne Liste Des Noms Grec Des Pierres Precieuses Relatees Dans Exode XXVIII 17-20*, REJ, Vol. 29, 1894.

⁴⁰ Regarding the stones in **Shemos Rabbah**, see Appendix D for an extensive discussion, along with references to the manuscripts used (note 326).

⁴¹ **Bereishis Rabbah** was completed towards the end of the Amoraic period in Eretz Yisrael, approximately 400 years after the Churban. See:

- A. Reizel, *Introduction to Midrashim*, Alon Shvut 2011, p. 107.

⁴² R'Tzvi Hirsch Chayes, *Igeres Bikores*, in *Collected Writings of Mahartz Chayes*, Vol. 2, Jerusalem 1958, p. 534, writes that **Shemos Rabbah is not quoted by any early authority** (it is first mentioned by either the Ramban or his rebbi, R' Azriel of Gerona).

According to midrash researchers, **Shemos Rabbah** is composed of two sections:

- The first, up to Shemos Chapter 10 (Parsha 14).
- The second, from Chapter 12 until the end.

The second part, where the Choshen stone list appears, is earlier and is linked to **Midrash Tanchuma-style literature**. However, its precise dating is disputed. For a full overview of scholarly

5. The Abundance of Traditions Supporting the List of Stones in the Septuagint

Unlike other traditions, the list of stones in the Septuagint is preserved in many diverse sources, some of them very early, even from the Second Temple period:

1. The Septuagint itself has been preserved in manuscripts from the fourth and fifth centuries CE,⁴³ all of which contain an identical list of stones (except for minor spelling variations).
2. Besides the appearance of the names of the stones in Sefer Shemos (Chapter 28 and Chapter 39), they also appear in Sefer Yechezkel (28:13), though in a somewhat different order (the numbers indicate the placement of the stones in the Choshen): 1. Odem, 2. Pitda, 6. Yahalom, 10. Tarshish, 11. Shoham, 12. Yashfeh 5. Sapir, 4. Nofech, 3. And “Barekes V’

opinions, see A. Reizel, *Introduction to Midrashim*, p. 117 onward. Some date this section as early as the 5th century, while others argue it was written no earlier than the 9th century.

Even if the Midrash as a whole—or the content within it—is early, see above, note 38, where there is reason to doubt the attribution of this passage to the Tannaim.

⁴³ There are fragments of manuscripts that are even earlier, including some of the Dead Sea Scrolls that were written during the time of the Beis HaMikdash, as well as others written within 200 years after the Churban. From these, it is evident that the textual transmission in the rest of the manuscripts was generally preserved with accuracy. For an overview of various manuscripts and their significance, see: Siegfried Kreuzer, *B or Not B? The Place of Codex Vaticanus in Textual History and in Septuagint Research*, in *Text-Critical and Hermeneutic Studies in the Septuagint*, Leiden 2012.
H. B. Swete, *An Introduction to the Old Testament in Greek*, Cambridge 1900, Chap. 5.
Bruce Metzger, *Manuscripts of the Greek Bible*, Oxford 1991.

Zahav".⁴⁴ The Septuagint provides a translation for these stones, listing all twelve stones in the same order as they appear in the Choshen. The translation in the Septuagint has been preserved in many important manuscripts, and its list of stones corresponds to the one found in Shemos.

3. Another significant textual witness is the Syriac **Hexapla**. This was a Syriac translation produced by Paul of Tella between 615 and 617 CE in Alexandria, based on Origen's revised Septuagint. This text has been preserved in two manuscripts for the Torah and another manuscript for Ezekiel.⁴⁵

4. There are also numerous Latin fragments of the Tanach (primarily found in the writings of Church Fathers) that were translated from Greek. These are collectively known as the **Vetus**

⁴⁴ The third row of stones on the Choshen is missing for an unknown reason (perhaps because those stones were considered less significant or were not commonly found in Tzur), and the reason for the change in order is also unknown. [In Yechezkel, the order is as follows: the first two stones remain in order (Odem and Pitda), then it starts from the second row in reverse until the third position (Yahalom... Sapir, Nofech, Barekes), and between Yahalom and Sapir, he inserts the fourth row (Tarshish, Shoham, Yashfeh). There is no satisfactory explanation for this reordering.]

It is important to note that the Septuagint's translation of Nevi'im was not written in the same period as the Septuagint's translation of the Torah. Some parts of the translation of Nevi'im were done centuries later than the translation of the Torah, and it seems that the later translators based their work on the Septuagint's Torah translation (or on a dictionary prepared from it). See:

E. Tov, The Impact of the Septuagint Translation of the Torah on the Translation of the Other Books, in The Greek and Hebrew Bible - Collected Essays on the Septuagint, Brill 1999, Chap. 12, p. 183.

⁴⁵ Two manuscripts of the Syro-Hexapla have been published:

A. Vööbus, The Pentateuch in the Version of the Syro-Hexapla, Louvain 1975.

P. De Lagarde (editor), Bibliothecae Syriacae, Göttingen 1892 (the Choshen stones appear on p. 82).

A manuscript of the Syro-Hexapla for Nevi'im was also published:

A. M. Ceriani, Codex Syro-Hexaplaris Ambrosianus Photographic Editus, Monumenta Sacra et Profana ex Codicibus Praesertim Bibliothecae Ambrosianae, Milan 1874.

Latina ("Old Latin").⁴⁶ These citations have been compiled into a single volume,⁴⁷ which includes references to the Choshen stones, as well as their mention in **Sefer Yechezkel**, as noted above.⁴⁸

⁴⁶ This translation is referred to as the "Old Latin" in relation to the Vulgate, which was later produced from the original text of Tanach to replace the older, less precise translation from Greek. R' Moshe Sofer (Chasam Sofer) suggested (cited by R'Tzvi Hirsch Chayes, *Igeres Bikores*, above note 42, p. 516, s.v. Targum Aquilas, in the name of R' Avraham Zevi Margaliot, and briefly mentioned in Shu"t Chasam Sofer, Vol. 4, Siman 118) that this is what the Yerushalmi means in Megillah 1:9 when it says, "A certain Burgani translated Aramaic from Greek," which should actually say Roman instead of Aramaic. R'Tzvi Hirsch Chayes pointed out (ibid.) that a similar expression appears in Esther Rabbah (2:12): "A certain Burgani translated it into Latin from Greek."

[It is possible to uphold the Yerushalmi's version and say it refers to what is called the "Palestinian Syriac Translation" (see note 260), but it is unclear whether this translation was made before the completion of the Yerushalmi or not. R' A. Silverstone, *Targum Aquilas and Onkelos* (below, note 302), p. 58, cites opinions suggesting that "Burgani" in the Yerushalmi refers to Origen, who edited the Hexapla, from which various Aramaic translations were derived; however, this seems unlikely.]

Nowadays, scholars generally accept that these citations represent an entire stream of translations from Greek to Latin, and not that all Latin writers had a single Greek-to-Latin translation before them. See, for example:

S. Kreuzer, *B or Not B? The Place of Codex Vaticanus in Textual History and in Septuagint Research*, in *Text-Critical and Hermeneutic Studies in the Septuagint*, eds. J. Cook and H-J. Stipp, 2012, p. 74, note 14.

A. Salvesen, "A Well-Watered Garden (Isaiah 58:11): Investigating the Influence of the Septuagint," in *Translation Is Required: The Septuagint in Retrospect and Prospect*, ed. R. J. V. Hiebert, 2010, pp. 195–197.

These citations are particularly significant because they are the only known references that definitely predate Origen's reworking of the text in the Hexapla. Origen's version of the Septuagint was edited based on logic and comparisons to other translations, and many of his corrections were later incorporated by copyists into the text of the Septuagint itself. To this day, scholars of the Septuagint attempt to identify Origen's modifications and reconstruct the original text.

Regarding the verses about the Choshen stones, three Latin manuscripts have preserved this translation:

Lyons Heptateuch

Codex Lugdunensis

Fragmenta Wirceburgensia palimpsesta

These also reflect the *Vetus Latina*. For more on these manuscripts and their editions, see Swete (above, note 7), pp. 93–94.

⁴⁷ *Biblitorum Sacrorum: Latinae Versiones Antiquae Seu Vetus Italica*, Florence 1743.

⁴⁸ See below under the entry *Shoham*, where this source carries significant implications.

5. Another significant source is the work of Epiphanius of Salamis⁴⁹ on the Choshen stones, which is almost entirely based on the Septuagint.⁵⁰

6. The **Vulgate**, the Latin translation of the Tanach, which was produced directly from the Hebrew text, appears to have also adopted the Septuagint's identifications for the Choshen stones.⁵¹

7. In addition to this, Jerome (the author of the **Vulgate**) cited the names of the Choshen stones in his commentary on **Sefer Yeshayahu**⁵² and in a letter discussing the priestly garments.⁵³

8. Josephus also presents the stones according to the Septuagint.⁵⁴ Even if his account does not constitute direct eyewitness testimony and merely copies from the Septuagint, his work serves as an early textual witness to its tradition.

9. Philo of Alexandria,⁵⁵ in his work **Allegories**, also cites approximately half of the Choshen stones based on the Septuagint.⁵⁶

⁴⁹ De duodecim gemmis quae erant in veste Aaronis, *Patrologiae cursus completus*, vol. XLIII, Paris 1864, pp. 321–366.

R. P. Blake, *Epiphanius de Gemmis: The Old Georgian Version and the Fragments of the Armenian Version*, London 1934.

He lived about 300 years after the Churban and wrote his book on the Choshen stones around the late 4th century. Salamis was a city in eastern Cyprus.

⁵⁰ The book was likely written in Greek but has only survived in translations—Latin, Georgian, and Coptic; the earliest version among these is assumed to be the Latin translation.

⁵¹ For the relationship between the Vulgate and the Septuagint, see Swete (above, note 43), pp. 474–476. For an analysis of the Vulgate's translation of Shemos and its connection to the *Vetus Latina* and the Septuagint, see:

D. L. Everson, *The Vetus Latina and the Vulgate of the Book of Exodus*, in *The Book of Exodus - Composition, Reception, and Interpretation*, eds. T. B. Dozeman, C. G. Evans, and J. N. Lohr, Leiden 2014, pp. 370–385.

⁵² *Sancti Eusebii Hieronymi Stridonensis Presbyteri Operum*, Venice 1767, p. 637.

⁵³ *Sancti Hieronymi, Opera Omnia*, ed. Migne, Paris 1877, vol. 1, col. 616, *Epistola LXIV*, paragraph 16; *Sancti Hieronymi Epistulae*, ed. Isidorus Hilberg, New York 1910–1918, pp. 612–613.

⁵⁴ See note 28.

⁵⁵ He lived in Alexandria in the generation before the Churban and visited Yerushalayim before its destruction.

⁵⁶ See note 14.

10. The work **Biblical Antiquities (Liber Antiquitatum Biblicarum)**,⁵⁷ also known as **Pseudo-Philo** due to its mistaken attribution to Philo, cites all twelve Choshen stones⁵⁸ exactly as they appear in the Septuagint.⁵⁹

11. Several early translations of the Septuagint into other languages, including Coptic, Armenian, and Ethiopic, contain the list of Choshen stones. The latest of these translations predates the earliest complete manuscripts of the Septuagint that are currently available.⁶⁰

6. The Accuracy of the Septuagint

⁵⁷ An ancient collection of aggados arranged according to the order of Tanach, from Creation until Shaul HaMelech, containing many parallels to various Midrashim. All scholars (see note 59 below) agree that it was originally composed in Lashon HaKodesh within 100 years of the Churban, and some even date it earlier (based on weak reasoning—see, for example, their argument that the Churban isn't mentioned, which they take as proof that it was written before the Churban). Later, it was translated into Greek and from there into Latin. The book was published in Hebrew as part of the *Sefarim Chitzonim* edition, ed. A. S. Hartum, Vol. 1 (Tel Aviv, 1968).

Large portions of this book were translated into Lashon HaKodesh already in the 14th century within *Divrei Yemei Yerachmiel* by R' Eliezer ben Asher HaLevi. *Divrei Yemei Yerachmiel* was published in English translation by M. Gaster:

- *The Chronicles of Jerahmeel*, London 1899.

For more on these works, see the introduction and the referenced articles in:

- D. J. Harrington, *The Hebrew Fragments of Pseudo-Philo's Liber Antiquitatum Biblicarum Preserved in the Chronicles of Jerahmeel*, Missoula 1974.

⁵⁸ In *Chapter 26*, there is a story about a man named Kenaz, who, according to the book, was the first of the Shoftim. He found twelve stones—paralleling the stones of the Choshen—set into idols of the Emorim. The general story of Kenaz was copied into *Divrei Yemei Yerachmiel*, but briefly, and this list of stones was omitted.

⁵⁹ This source is not particularly reliable, as scholars maintain that the book was originally written in Hebrew and later translated into Greek or Latin (see:

- M. R. James, *The Biblical Antiquities of Philo*, New York 1917, p. 28.
- D. J. Harrington, *The Original Language of Pseudo-Philo's Liber Antiquitatum Biblicarum*, *Catholic Biblical Quarterly*, 33 (1971), pp. 1–17).

It is therefore possible that the names of the Choshen stones were translated by the translator based on the Septuagint. In *Pseudo-Philo*, there is one discrepancy: in the order of the third row, he switched the second stone (*Shoham*) with the third (*Achlama*). This may have been a scribal error in one of the manuscript transmissions.

⁶⁰ The Armenian translation was done in the 4th century, and the Ethiopian translation in the 5th century. For an overview of the different versions of the Septuagint and their dating, see:

- A. Salvesen (cited above, note 46), pp. 191–208.

Among the various sources available for identifying the stones of the Choshen, such as the Aramaic translations and archaeological findings, the Septuagint's identifications can be corroborated for most of the stones. Consequently, it should also be relied upon for the remaining stones, for which no external sources exist to verify their identity.

This means that for half of the Choshen stones (*Odem, Pitda, Sapir, Yahalom, Leshem, and Shoham*), there is independent corroboration from other sources affirming the Septuagint's identifications. Additionally, there is partial support for the *Bareket* and *Nofech*, though their positions were likely switched, as will be explained. Altogether, there is external support for eight out of the twelve stones.

As for the remaining stones (*Shevo, Ahlama, Tarshish, and Yashfe*), even though no external sources confirm their identification in the Septuagint, they appear to be plausible choices, fitting the time period of the Tanach and aligning with other ancient sources. This suggests that the identifications in the Septuagint were not arbitrary guesses or merely anachronistic attributions of stones known in its era to those of the Choshen. Rather, they reflect an accurate tradition or first-hand knowledge.

7. The Feasibility of Identifying the Stones Listed in the Septuagint

Several ancient works on gemstones, dating to the Second Temple period⁶¹ or shortly thereafter—close to the time when the Septuagint was composed—provide critical insights for identifying these stones. These include:

- *On Stones* (*Περὶ λίθων – De Lapidibus*) by Theophrastus⁶²
- *Natural History* (*Historia Naturalis*) by Pliny the Elder⁶³
- *On Medicinal Substances* (*De Materia Medica*) by Dioscorides⁶⁴
- *Wonders of the World* (*De Mirabilibus Mundi*), also known as *Collection of Noteworthy Things* (*Collectanea Rerum Memorabilium*) by Solinus⁶⁵

⁶¹ See note 70 for scholarly editions of some of these books.

⁶² A student of Plato and a close student of Aristotle, he succeeded Aristotle as head of the Peripatetic school. He lived from 371 to 285 BCE. For editions of his book, see note 70.

⁶³ Lived from 23 to 79 CE and was a contemporary of Vespasian. He wrote an encyclopedia at the end of his life. His book on stones was recently published in a new Hebrew translation:

- R. Reich, *Chakir HaTeva*, Books 33–37, Jerusalem 2009.

⁶⁴ A contemporary of Pliny, lived from 40 to 90 CE. In the 5th section of his book, he discusses the properties of various stones.

- R. T. Gunther (translator), *The Herbal of Dioscorides the Greek*, New York 1959, Vol. 5, pp. 139–173.

⁶⁵ Solinus lived about 200 years after Pliny (early 3rd century CE) and frequently quotes him. See:

- *Etymologies (Etymologiarum)* by Isidore of Seville⁶⁶

From these sefarim, as well as from additional sefarim of their time where individual stone names are mentioned, it is possible to identify almost every name with an ancient Greek term for a precious stone. The work of Plinius is particularly important, as he was familiar with and even quotes earlier authors (including Theophrastus), and at times, he provides different identifications for the same name⁶⁷, as well as different names for the same stone.⁶⁸ These sefarim provide numerous details and many characteristics for each stone, including hardness, transparency, rarity, location of occurrence, and additional unique properties of each stone.

Since the Renaissance, scholars have written commentaries on these ancient works on gemstones⁶⁹ and compiled specialized books analyzing the stones mentioned therein.⁷⁰ These studies have generally reached clear and widely accepted conclusions. By consulting these sources—both ancient and modern—scholars can accurately identify all the stones described in

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- *Caius Julius Solinus, Collectanea rerum*, Berlin 1864.

⁶⁶ Isidore of Seville, a bishop in Spain in the 7th century CE, wrote a book on the origins of words (in which he attempted to deduce the meaning of objects' names based on their characteristics), mainly based on classical literature. [Regarding precious stones, most of his information is taken from Pliny and Solinus.]

- S. A. Barney, J. A. Beach, O. Lewis (translators), *The Etymologies of Isidore of Seville*, Cambridge 2006, pp. 317–335.

⁶⁷ Generally, one name covers multiple different stones, and sometimes stones with no real connection were given the same name. A classic example is *Smaragdus*, which refers to a range of green stones, from beryl to malachite.

⁶⁸ Pliny himself did not see many of the stones he discusses. His encyclopedia is mostly compiled from earlier sources, as he describes in his introduction. Because of this, he sometimes lists one stone under two names or uses a single name for different stones depending on time and location.

⁶⁹ Major scholarly editions:

- J. Hill, *Theophrastus's History of Gems, with an English Version and Notes*, London 1746.
- H. T. Riley, *Naturalis Historia of Pliny the Elder, English Translation with Notes*, Book 38, London 1855, 1857.
- E. R. Caley, J. F. C. Richards, *Theophrastus on Stones with Commentary*, Columbus 1956.

⁷⁰ Other important scholarly editions:

- N. F. Moore, *Ancient Mineralogy*, New York 1859.
- C. W. King, *The Natural History of Precious Stones and Precious Metals*, London 1867.
- C. W. King, *The Natural History of Gems or Decorative Stones*, London 1867.

Another work that serves as a bridge between early and later literature, where ancient terminology is used alongside newer terms—sometimes in their modern meaning, sometimes in their original meaning, and sometimes in both:

- T. Nichols, *Lapidary, Or, The History of Pretious Stones*, Cambridge 1652.

early literature. Identifying the Choshen stones based on the Septuagint is especially straightforward, as most of these stones were well-known and widely recognized.

B. Verifying Identifications Through Cross-Referencing the Septuagint Itself

One of the most valuable tools for identifying the stones in the Septuagint, which has been largely underutilized in previous research on the Choshen stones, is internal comparison within the Septuagint itself.⁷¹ This means examining different occurrences of the Choshen stones across various passages in the Septuagint, as well as analyzing instances where the Greek names used for the Choshen stones appear elsewhere in Tanach to translate different terms.⁷²

Of course, this method requires careful analysis to resolve discrepancies, considering factors such as variations in different editions of the Septuagint, differences in translators for different books, and shifts in linguistic usage over time. Nevertheless, this approach holds great significance in refining our understanding.

In Tanach, five of the Choshen stones (*Pitda*, *Nofech*, *Sapir*, *Tarshish*, and *Shoham*) appear independently outside the list of Choshen stones. Additionally, some Greek names used for the Choshen stones also appear in the Septuagint as translations for different terms in reference to five other substances (*Bedolach*, *Chashmal*, *Kadkod*, *Ketem*, and *Paz*). This linguistic overlap further underscores the importance of analyzing the Septuagint as a means of verifying its identifications.⁷³

C. Additional Sources

Beyond the Septuagint and its parallels, there exist other ancient sources, some of which may predate the Septuagint and seem to preserve independent traditions regarding the Choshen stones. These sources include:

1. The Aramaic Translations

⁷¹ Some have written (mainly due to a lack of familiarity with gemstones) that there is no consistency at all in the Septuagint's translation of gemstones. See, for example, M. Tsafir, *The Septuagint Translation of Sefer Bereishis*, Ramat Gan 2006, p. 84, where he writes: "*There is no uniformity in the translation of precious stones in the Tanach.*" However, as will be shown later, this assumption is not necessarily correct.

⁷² We conducted this comparison across all sources available to us (including translations of the Septuagint into other languages and other independent translations), but none had the same significance as the Septuagint itself.

⁷³ This method was primarily used in identifying *Leshem* and *Shoham*, see there.

- *Targum Onkelos*⁷⁴
- *Targum Yonasan* on the Prophets⁷⁵
- *Targum Yerushalmi*⁷⁶
- *Targum Yonasan* on the Torah (attributed)⁷⁷

⁷⁴ Regarding the attribution of the Aramaic translation to Onkelos the Ger, and the relationship between this translation and the Greek translation of Aquilas the Ger, see Appendix B.

⁷⁵ In Yechezkel 28:13, only nine of the Choshen stones mentioned in the pasuk are translated. It is important to note that according to the Gemara, Targum Yonasan on Nevi'im was written before Targum Onkelos (Megillah 3a): "*The translation of Nevi'im was said by Yonasan ben Uziel [a talmid of Hillel HaZaken] from the mouths of Chaggai, Zechariah, and Malachi.*" If so, it is highly significant that he translates the stones identically to Targum Onkelos, even if we say that Onkelos copied from Yonasan for these stones.

[It is worth noting that in some places, it seems that the final editor of Targum Yonasan had before him an earlier version of Targum Onkelos (perhaps an earlier edition that preceded Onkelos), such as in Shoftim 5:8, which appears to be taken from Onkelos' translation of Devarim 32:17; and in Yirmiyah 48:45, which closely resembles the translation of Bamidbar 21:28.]

The names of the stones also appear in the *Tosefta to Targum* (R' Kasher, *Toseftos Targum to Nevi'im*, Jerusalem 1996, Section 130, p. 198), in a list nearly identical to that of Targum Yonasan. The *Tosefta Targumim* generally reflect the text of the Yerushalmi Targum on Nevi'im (see Kasher *ibid.*, pp. 61–62). Indeed, in the Tosefta, *Nofech* is translated as "*Izmorod*," like in Targum Yonasan, and *Tarshish* as "*Karom Yama Raba*," like in the Yerushalmi Targum.

If this is correct, it is very significant, as it provides evidence of an Eretz Yisrael tradition regarding the identification of the Choshen stones that aligns with Targum Onkelos. This proves that the Yerushalmi Targum does not reflect the sole tradition in Eretz Yisrael regarding the Choshen stones.

⁷⁶ The Yerushalmi Targum has mainly been preserved in two versions—Targum Yerushalmi in the Neofiti manuscript and the fragmentary Yerushalmi Targum—and there is no significant difference between them regarding the Choshen stones. For Targum Neofiti, see:

- A. Diez Macho, *Neophyti 1: Targum Palestinense - Ms. de la Biblioteca Vaticana*, Madrid and Barcelona, 1968.

⁷⁷ As is well known, this Targum is not from Yonasan ben Uziel and also is not from the same author as the Targum on Nevi'im (see:

- R' Chaim Yosef David Azulai (Chida), *Shem HaGedolim*, Section on Sefarim, entry "Targum Yonasan";
- R'Tzvi Hirsch Chayes, *Igeres Bikores* (above, note 42), p. 513;
- R'Tzvi Hirsch Chayes, *Imrei Binah* (in: above, note 42), Siman 4, p. 911).

This Targum often cites Midrashim from Amoraim in the Bavli (see R'Tzvi Hirsch Chayes, *Imrei Binah*, note on p. 915, where he brings dozens of such instances), and therefore, it cannot have been written much before the sealing of the Bavli.

This Targum is similar to Targum Onkelos in many places in style and also has significant similarities to the Yerushalmi Targum. Before the discovery of the Neofiti manuscript of the Yerushalmi Targum, some even thought that Targum Yonasan was merely the Yerushalmi Targum itself (see R' Avraham Min

These translations are of great significance, as they are ancient and have been transmitted by the Jewish people throughout the generations. However, they cannot be relied upon in isolation (without comparison to other sources) for several reasons:

1. The precise meaning of the names given in these Targumim is often unclear, as there are no early Aramaic sources that define these names.⁷⁸

HaAdumim, *Maor Einayim*, Vol. 1, Vilna 1863, *Imrei Binah*, Parshas Tzav, p. 64a; R'Tzvi Hirsch Chayes, *Igeres Bikores*; R'Tzvi Hirsch Chayes, *Imrei Binah*, *ibid.*, who discusses this view).

This position was also taken by R' Shlomo Yehuda Rapoport (*Toldos Rabbeinu Nosson Ba'al HaAruch*, Warsaw 1913, p. 59), and R' Chaim Heller (*On the Yerushalmi Targum to the Torah*, New York 1921, p. 15), who pointed out several other scholars who held this view, including R' Binyamin Musafia (*Mussaf HaAruch*, entry "Ashan B"); R' Yaakov Emden (*Lechem Shamayim*, end of Megillah); and Chida (*Shem HaGedolim*, entry "Targum Yonasan").

However, R' Chaim Heller proceeds to demonstrate that this is incorrect. See also:

- D. Reider, *Targum Yonasan on the Torah and the Yerushalmi Targum Are One*, Sinai, Vol. 62 (1967), pp. 85–88.

This Targum is attributed to Yonasan ben Uziel in the writings of R' Menachem Recanati (died around 1310), who quotes it over thirty times under the name "Yonasan" or "Yonasan ben Uziel." Yerushalmi Targums were already attributed to Yonasan earlier, as seen in a Genizah fragment (*T-S NS 184.81r*), where:

- M. L. Klein, *Genizah Manuscripts of the Palestinian Targum to the Pentateuch*, Vol. 1, Cincinnati 1986, p. 11, attributes a fragment of the Yerushalmi Targum to Yonasan ben Uziel.

Nowadays, scholars assume that this Targum is based on the Yerushalmi Targum but was influenced by Targum Onkelos, incorporating various Aggadic and Halachic additions from different sources. Alternatively, some suggest the reverse—that it is an expanded version of Targum Onkelos, interwoven with material from the Yerushalmi Targum. The latter seems more likely.

For an overview of the scholarly opinions on this, see:

- P. Flesher and B. Chilton, *The Targums, A Critical Introduction*, Leiden 2011, Chap. 9, "Dating the Targums of Israel", pp. 151–166.

In this Targum, the stones are translated three times:

1. In the lists of the Choshen stones (Parshiyos *Tetzaveh* and *Pekudei*).
2. In an intermediate version between Targum Onkelos and the Yerushalmi Targum (with the same order as Onkelos).
3. In the *Parshas HaDegalim* (Bamidbar 2:3, 10, 18, 25), where the translation closely resembles Targum Onkelos regarding the Choshen stones (see below, Appendix A).

⁷⁸The situation is different in Greek. See above regarding the possibility of identifying the stones in ancient Greek.

In Targum Onkelos, two stones appear without identification (Sapir as "Shavziz" and Yahalom as "Sabhalom"). From these, we can infer that we may not always have absolute clarity regarding the other

2. There are no early citations from these Targumim regarding the Choshen stones, making it possible that errors entered their text over time. Additionally, we find discrepancies between them regarding the Choshen stones, as well as numerous textual variants elsewhere in the Targumim.
3. No early manuscripts of these Targumim exist, with the oldest dating only to the Geonic period.⁷⁹
4. The final redaction of these Targumim is uncertain,⁸⁰ and it is possible that they were compiled after the destruction of the Beis HaMikdash, with the Choshen stones being translated based on conjecture rather than tradition.

names in Targum Onkelos, as it is evident that our knowledge of the stone names in Onkelos's Aramaic is incomplete.

Additionally, some of the other stones have names that could be understood in multiple ways, as they are general terms (Samaqan – "red stone," Yarkan – "green stone"), without specifying which red or green stone it refers to.

⁷⁹ The oldest manuscript of Targum Onkelos is Vatican Manuscript 1084 (from the Vatican Library), dating back to the times of Rashi and the Rif. The oldest manuscript of what is called "Targum Yonasan" on Nevi'im is the Karlsruhe Manuscript (State Library 3), written in Italy in the year 4865 (1105 CE). There is no complete early manuscript for either Targum Yonasan or Targum Yerushalmi on the Torah. Fragments of Targum Yerushalmi were found in the Cairo Geniza, but not on the pesukim that mention the Choshen stones.

On the other hand, I have checked dozens of manuscripts of Targum Onkelos—see for example, the Paris manuscript (Ebr. 448), the Vatican manuscript (Hebr. 76), and the Paris National Library manuscript (Hebr. 78). The differences between them are very minimal, mostly in spelling, such as שבזיז/שבזין, פנטיר/פנתייר, קנכיר/כנקיר, טרקיא/תרקיא, and similar cases. This indicates a strong and consistent tradition. Furthermore, the fact that there is consistency among the Aramaic Targumim in general suggests that they come from an early mesorah.

⁸⁰ Targum Onkelos is never quoted anywhere in the Yerushalmi or in Bereishis Rabbah, which indicates that they didn't recognize it as a text that could be cited. Even in the Bavli—where it is brought in seventeen places—it is never quoted as a source for halacha or anything like that, only as a support for translating a word. And even though it could have settled many machlokesim among Amora'im, the Gemara never brings it as "Targum Onkelos," only as "k'demetragminan stam."

Still, there's no question that the concept of a Torah Targum is ancient, as the Mishnah already mentions halachos related to Targum (Megillah, Perek 4). And according to Rav (Megillah 3a, Nedarim 37b, Yerushalmi Megillah 4:1 quoting R' Chananel), Ezra HaSofer already translated the Torah. However, there's no proof that the Targum being referred to is the Targum Onkelos that we have, and even the Gemara's conclusion that Onkelos re-established the Targum doesn't mean that he restored Ezra's translation.

All of these sources indicate that in earlier generations, the Targum was transmitted orally by meturgemanen, but it wasn't written down or established as an official fixed text. (It's possible that the Targum was finalized as a standard version in the time of the Geonim when it was sent to Jewish communities worldwide—see above, footnote 13.) For more on the Aramaic Targum and its connection to Onkelos, see Appendix B.

2. The Peshitta

A comparable source⁸¹ is the *Peshitta*, the Syriac translation of the Tanach.⁸² Though it was preserved by the Syriac Church, it was likely composed by Jews and is heavily influenced by

⁸¹ Seven of the names of the Choshen stones in various Aramaic Targumim are similar:

- Odem: סומקא-סמקן
- Pitda: זרגא-ירקן
- Barekes: ברקא-ברקן
- Sapir: ספילא-ספרינה
- Leshem: קנכינן-קנכירינן
- Achlama: עין עגלא-עין עגלא
- Shoham: ברולא-בורלא

See Y. Maori (footnote 83), page 313.

⁸² Syriac is a dialect of Eastern Aramaic, possibly what Chazal call "Lashon Sursi" (see for example: Pesachim 62a, Sotah 49b, Yerushalmi Pesachim 5:3).

Chazal.⁸³ This translation is preserved in very early manuscripts⁸⁴ and contains the Choshen stones' names both in *Sefer Shemos* and *Sefer Yechezkel*.⁸⁵

3. Arabic Translations

There exist various Arabic translations, including:

⁸³ R. B. Poznanski, *Parshagen* (Yerushalayim, 2012), Introduction, p. 41, writes:

"Even though the origins of the Peshitta aren't clear, it is generally accepted as a Jewish Targum that evolved from an earlier interpretive tradition."

See also R. Chaim Heller, *Peshitta—The Syriac Targum on Bereishis* (Berlin, 1927), Introduction:

"Anyone who studies the Peshitta with open eyes will recognize that its authors were part of us, from our own flesh and blood, as it contains much influence from Chazal's derashos and many allusions to midrashim found in the Talmud. Apparently, these were mesoros that circulated orally and were well known in Klal Yisroel. From beginning to end, this Targum is infused with the same spirit that characterizes the Hebrew literature of the Chazal era."

The printed Targum Mishlei in standard Chumashim seems to be a version of the Peshitta. See also A. Z. Melamed, *Studies in Biblical Targumim and Commentaries* (Yerushalayim, 1984), pp. 242–315.

According to Peshitta scholars, this Targum was composed in Eretz Yisroel (possibly in Aram) in the first few centuries CE by Jews loyal to the mesorah of Chazal. See also:

- Y. Maori, *The Peshitta Targum to the Torah and Early Jewish Interpretation* (Yerushalayim, 1995), especially chapters 6, 11, 12 (Summary Chapter).
- M. P. Weitzman, *The Syriac Version of the Old Testament—An Introduction* (New York, 1999).

⁸⁴ The oldest manuscripts of the Peshitta include:

- Milan Library, Add. 14425, dated to the year 464 CE.
- British Library, London, from the 6th century.

Shemos was printed in several editions, including:

- R. Chaim Heller, *Peshitta B. 21 Ambrosiana* (Berlin, 1929).
- M.D. Koster (ed.), *The Old Testament in Syriac According to the Peshitta Version*, vol. 1 (Leiden, 1977).

⁸⁵ In the Peshitta on Yechezkel, only eight of the Choshen stones appear (as opposed to nine in the Torah), most of them in Greek, listed in the order of the Choshen stones:

"Sardon, Karkadna, Azmargada, Berula, Spila, Ispan, Krustalos, Marganita, and Dahava."

A closer look shows that the Peshitta in Yechezkel is influenced by the Septuagint, which lists all twelve Choshen stones there. However, to align it with the Hebrew wording, they made two changes:

1. They omitted the translations of Leshem, Shevo, and Achlama.
2. They moved the translation of Shoham (Berula) before Sapir (Spila), to match the order of the pasuk.

Aside from these changes, for some reason, the translation of Nofech (Karkadna) took the place of Pitda, removing Pitda entirely, leaving only eight stones in the list.

- *Rav Saadia Gaon's (Rasag) translation*
- *The Arabic translation of Shir HaShirim*⁸⁶
- *Rabbeinu Tuvia's Midrash Lekach Tov*⁸⁷

Additionally, several complete Torah translations into Arabic exist.⁸⁸ However, these translations present difficulties:

- The names of gemstones in early Arabic are unclear, with many terms referring to multiple stones.⁸⁹
- These translations do not align well with the earlier Greek and Aramaic sources.
- They often contradict archaeological and historical knowledge of gemstones used during the Second Temple period and earlier.⁹⁰

⁸⁶ In the pasuk "*Yadav gelilei zahav memule'im b'tarshish*" (Shir HaShirim 5:14), all the Choshen stones are listed in Arabic translation. However, in precise manuscripts of the Targum, the names of the stones are written in Hebrew, and apparently, only later did a copyist translate them into Arabic. See in the critical editions:

- R. Melamed, *The Targum to Canticles According to Six Yemenite Manuscripts* (Philadelphia, 1921).
- P. S. Alexander, *The Targum of Canticles* (Minnesota, 2003).

⁸⁷ *Midrash Lekach Tov*, also called *Pesikta Zutarta* (ed. S. Buber, Vilna, 1880), Shemos, fol. 94b-95a, a collection of midrashim by R. Tuvia ben Eliezer, composed in Italy or Greece in the 12th century. It was mistakenly called "*Pesikta Zutarta*." However, in all the manuscripts I checked, this list does not appear except in one manuscript (as Buber himself noted in a footnote that it was found in only two manuscripts). Apparently, a copyist added the list based on one of the common Arabic Targumim.

⁸⁸ On Arabic Torah translations, especially R. Saadia Gaon's (Rasag's) Targum and its relation to earlier Arabic translations, see:

- Y. Blau & S. Hopkins, *Early Arabic-Jewish Biblical Translations*, *Pe'amim* 83 (2000), pp. 4–14.

⁸⁹ Some of these translators clearly copied from one another, and some translated based on their own reasoning (which seems to be the case with *Tarshish*). Most (about eight of the stones) have no connection to either the Septuagint or Targum Onkelos. See also what the Ralbag writes in footnote 91 and R. Avraham ben HaRambam in footnote 92.

⁹⁰ For example, most translators into Arabic (including Rav Saadia Gaon) translate *odem* as *yaqut ahmar*, meaning simply red corundum (ruby). This stone was entirely unknown until close to the end of the Second Temple period (see note 18 to Theophrastus, 1956 edition, p. 89), and it does not match the identification in the Septuagint. Based on archaeological sources, it would be far more reasonable to identify *odem* with carnelian, which was a very common gemstone in the ancient world (see note 113). What seemingly led to the identification of ruby was the fact that in their times, it was the most precious red stone (see Al-Biruni, pp. 29 and 42).

Additionally, it is noted that Rav Saadia Gaon translated *nofech* as *kahli* (as do the other Arabic translations), which seemingly relates to *pukh*, known in Aramaic and Arabic as *kohl* (as will be discussed further), and this is likely based on logical reasoning. Another surprising detail is that none of the Arabic translations rendered *sappir* as a blue stone—only as a white stone, following Ibn Ezra's commentary on Shemos 24:10, "*like the work of a Sapir brick*," which contradicts the Gemara's statement that *tekheiles* is similar to *sappir*. It also goes against many sources in Chazal that describe *sappir* as *sapphirinon* in Greek, which refers to a blue stone (see below under the entry *sappir*).

- Some Rishonim, such as Ibn Ezra⁹¹ and R' Avraham ben HaRambam,⁹² noted that these translations were based on speculation rather than tradition.

Furthermore, Arabic was not a spoken language among Jews during the Temple period. Thus, even if an Arabic translation was based on a received tradition, it would have necessarily been translated from an earlier language, such as Hebrew, Aramaic, or Greek. This adds another layer of uncertainty, as the accuracy of an unknown translator's knowledge of both ancient and contemporary gemstone terminology cannot be ascertained.

4. The Samaritan Translations

The Samaritans⁹³ (*Kusim*, in Chazal's terminology) have their own translations, which are mostly literal adaptations of the Torah. However, one Samaritan translation preserves an important detail regarding the *Shoham* stone (discussed later).

5. *Midrash Bamidbar Rabbah* on the Colors of the Tribal Flags

⁹¹ Ibn Ezra (Short Commentary on Shemos 28:30): *"Regarding the identity of these stones, we have no tradition, only the Gaon explained that odem is red, and there are many red stones. He explained pitda arbitrarily, without evidence. Barekes is from the root barak (sparkle), and there are many such stones. Nofech he identified as black, from the root vesamtah b'phukh (Melachim II 9:30), which is far-fetched. Sappir he claimed is a white stone, based on livnas hasappir (Shemos 24:10), which is incorrect. Yahalom, the Gaon assigned arbitrarily without evidence. It would be more reasonable to associate it with v'halamah Sisera (Shoftim 5:26), implying a stone that smashes all others. Some say achlamah is a stone that causes dreams. The Gaon said yashfeh is with the interchange of shin and samech in the Kedarite language, from v'kulanu n'mashesh kir k'ivrim. The truth is, we cannot determine them."*

And in Bereishis (2:11), Ibn Ezra writes: *"He translated Chavilah as he saw fit, for he had no tradition. Likewise, he did so for families, lands, animals, birds, and stones—perhaps he saw them in a dream, though he erred in some identifications, as I will explain in place. Thus, we do not rely on his dreams. Perhaps he did this for the honor of Hashem, since he translated the Torah into the Ishmaelite language and script, lest they say there are mitzvos in the Torah unknown to them."*

⁹² Commentary of Rabbeinu Avraham ben HaRambam, Sassoon Edition, London 1958, Shemos 28:17, p. 79: *"What Rav Saadia Gaon z"l explained about these stones is conjecture, and we do not know anything about them for certain."*

⁹³ This translation was first published in the Paris *Polyglot* of J. Morinus (1645) in Samaritan script (*Libonaa* in Bavli Sanhedrin 21b) and again in the *London Polyglot* of Brian Walton (1657). It was later printed in Hebrew letters by A. Brüll, *Samaritan Targum on the Torah*, Frankfurt 1879. This Samaritan translation is considered highly corrupt. A recent critical edition was published by A. Tal, *The Samaritan Translation of the Torah*, Tel Aviv 1980.

There is another source that is also somewhat unclear, even though it has been widely cited—*Midrash Bamidbar Rabbah* regarding the colors of the tribal flags.⁹⁴ There (Parshah 2), it states:

"Each nasi had a sign, and each flag had a color corresponding to the precious stones on Aharon's breastplate."

The Midrash then goes on to describe each of the flags, its color, and the emblem that appeared on it.

The connection between the flags and the Choshen stones already appears in *Midrash Tanchuma*⁹⁵ and is also mentioned in *Targum Yonasan* in *Parshas HaDegalim*.⁹⁶ However, the specific details of the colors of the flags appear only in *Bamidbar Rabbah*.

However, it is difficult to rely on this source, since *Bamidbar Rabbah* is a relatively late Midrash. The first part (up until Parshah 14) is a later compilation from the 12th century or possibly even later.⁹⁷ Therefore, it is entirely unknown what the origin of this tradition regarding the colors of the flags is and whether it is truly ancient.

⁹⁴ The list of flag colors also appears in a derasha attributed to the Ramban (likely written in his youth), *Derasha for a Wedding*, in: *Chiddushei HaRamban on Shas*, ed. R.M. Hershler, Jerusalem 1976, pp. 337–338; in: *Ketavim of the Ramban*, ed. R.C.D. Chavel, Jerusalem 1963, Vol. 1, pp. 136–137. It also appears twice in Rabbeinu Bachya (partially in Parshas Tetzaveh regarding the *Choshen* stones, and in Parshas Bamidbar regarding the flags), with variations and omissions. See also Zecharia ben Shlomo HaRofeh, *Midrash HaChofetz*, ed. M. Havtzelet, Jerusalem 1991, p. ??.

Beyond these sources, six manuscripts of *Bamidbar Rabbah* were examined: Paris (Bibliothèque nationale Hebr. 150), Rome (Biblioteca Angelica Or. 61), Oxford (Bodleian Library Opp. Add. Fol. 51, Opp. Add. Fol. 3—a later Yemenite manuscript that was seemingly copied from print and matches the printed text), and another manuscript in New York, *Beth HaMidrash L'Rabbanei America* (R. 1688). Between these and the printed edition, there is one significant textual difference (see below under *Leshem*).

⁹⁵ *Midrash Tanchuma*, Bamidbar 12, and *Tanchuma Yashan* (Buber), Bamidbar 13, cited in *Yalkut Shimoni* Bamidbar (Remez 746). From there, it reached Rashi (Bamidbar 2:2), Chizkuni (Bamidbar 2:2), and an elaboration (with an apparent hint to contemporary practice) in the Torah commentary attributed to the Rosh (Bamidbar 2:3): "A sign for each Nasi was a banner affixed to a spear, and from this, kings learned to make banners (*bandir* in the vernacular), and each banner was colored according to the stone in the *Choshen*."

⁹⁶ Bamidbar 2 (verses 3, 10, 18, 25).

⁹⁷ See A. Riesel (above, note 41), pp. 136 and onward. She states: "This Midrash is the latest among the 'Midreshei Rabbah' on the Torah." Later she writes: "The first section of *Bamidbar Rabbah* incorporates material from R' Moshe HaDarshan of Narbonne, who lived in the first half of the 11th century in Provence... However, it is unlikely that R' Moshe HaDarshan himself compiled the Midrash, but rather one of his students, as there is no mention of it in the works of his contemporaries, nor in Rashi's writings, despite Rashi frequently quoting the derashos of R' Moshe HaDarshan without referencing *Bamidbar Rabbah*." See also R. Tzvi Hirsch Chajes, *Igeres Bikores* (above, note 42), p. 535: "*Bamidbar Rabbah* is mostly compiled from Bavli and earlier Midrashim... Furthermore, apart from the extensive Midrashim on Bamidbar and Naso, most of it is taken from *Midrash Tanchuma*."

The distinctions made within the shades of color there indicate a level of precision,⁹⁸ so it is unlikely that it is merely a "translation" of the list of stones⁹⁹ into flag colors. It is more reasonable to assume that the editor of *Bamidbar Rabbah* had an earlier tradition regarding the colors of the flags, which for some reason only appears in relatively late Midrashim.

However, since we do not find any parallel to this list in the literature of the *paytanim*,¹⁰⁰ and despite the many parallels in *piyutim* between the Shevatim and the months, the Mazalos, and even various symbols and other elements that were depicted on their flags, the colors are not mentioned in any of them.

Rav Y. Y. Stahl¹⁰¹ proved that the list of colors is a relatively late innovation (see a detailed discussion on this later and in Appendix E).

Moreover, in all the earlier *Midrashim* that mention the connection between the Degalim and the Choshen stones—and which were cited in many later works¹⁰²—the list of colors is not found in any early source,¹⁰³ except for *Bamidbar Rabbah* and a few sources that seemingly copied from it.

Therefore, we must conclude that the color list in *Bamidbar Rabbah* was either created by its compiler or copied from another source that linked the flags to the Choshen stones, based on existing Midrashim. This means that it cannot be used as a definitive source—especially when it contradicts other traditions.

D. Additional Methods for Identifying the Stones

1. Etymological Analysis

⁹⁸ That is, at least nine of the colors align with what is known from the translations and the Septuagint (though some may be out of order).

⁹⁹ From the Septuagint, the Aramaic Targumim, or from one of the lexicon lists of *Laazim* that were common at the time.

¹⁰⁰ Examples of *piyutim* that did not use the color list: see S. Spiegel, *Avot HaPiyut*, New York – Jerusalem 1997, p. 18, which presents a long *piyut* discussing each *Choshen* stone without mentioning its colors; A. Fleischer, *Chakirei Piyut VeShirah, Tarbiz*, 39 (1970), pp. 19–21; and see also M. Kister, *Levi Shehu Or, Tarbiz*, 46 (1976), pp. 327–330.

According to R. Stahl, there are dozens of *piyutim* where it would have been appropriate to reference the color list [if it existed], yet they do not.

¹⁰¹ In an unpublished article.

¹⁰² See: A. Epstein, "Ancient Baraitot on the Flags and the Stones of the Choshen and Ephod," *Mikdamot HaYehudim*, Vol. 1, Vienna 1887, pp. 83–90 (=Vol. 2, Jerusalem 1957, pp. 76–82); M. Gaster (above, note 57), p. 96; M. Bialik, "The Order of Flags: Derashot on Bamidbar, Chapter 2," *Sidra*, Vol. 13 (1997), pp. 93–110.

¹⁰³ From the 11th century at the earliest.

In addition to ancient translations, the etymology of the Hebrew names can be analyzed and compared with similar names in other ancient Semitic languages.¹⁰⁴ Prominent languages include Akkadian and its relatives (e.g., Assyrian and Sumerian), as well as Egyptian from the period of the Exodus. These languages contain numerous gemstone names from the biblical era.¹⁰⁵ However, this method has two limitations:

1. It is not always possible to clearly identify the stone referred to in the ancient language.¹⁰⁶
2. Generally, this does not refer to an identical name, but rather to a name with a close pronunciation, and therefore it is not possible to make definitive conclusions based on this.¹⁰⁷ Nonetheless, this approach can serve as a support or a means of deciding between different proposals.

2. The Rarity and Availability of Stones in Ancient Times

¹⁰⁴ The possibility of deriving meaning from the names applies to five stones (see each under its respective entry):

Odem – from the word *adom* (red).

Barekes – from the root *barak* (sparkle) [possibly indicating a shiny stone].

Nofech – from *pukh*, which refers to eye paint made from a ground stone.

Yahalom – from *holem*, meaning "to strike" (*Yeshayahu* 41:7, *Shoftim* 5:26), referring to a strong blow [possibly indicating the stone's hardness or its use in striking, such as in a seal].

Tarshish – related to the sea [either from a maritime location or because its color resembles the sea].

¹⁰⁵ For studies following this approach, see:

- T. O. Lambdin, "Egyptian Loan Words in the Old Testament," *Journal of the American Oriental Society*, 73 (1953), pp. 145–155.
- Y. Muchiki, *Egyptian Proper Names and Loanwords in North-West Semitic*, SBLDS 153, Atlanta 1999, p. 173.
- M. Ellenbogen, *Foreign Words in the Old Testament, Their Origin and Etymology*, London 1962.

These books and articles provide parallels for many of the stones (*pitda*, *nofech*, *sappir*, *leshem*, *shevo*, *achlamah*, *shoham*, and *yashpeh*).

¹⁰⁶ For example, the Egyptian stone *mefekhet*, which was translated as *malachite* in most documents translated from Egyptian (as in Breasted's *Ancient Egyptian Texts Collection*, see note 175 below), though some have argued that it is actually *turquoise*.

¹⁰⁷ To highlight this issue, we note that based on the Hebrew names of stones, one could mistakenly conclude that *hallamish* (flint) is *hashmal* (amber), that *yahalom* (diamond) is *achlamah* (amethyst), or even that *hallamish* is *achlamah*, had we not known from the *Tanach* that these are distinct stones.

Another important factor in the study of the *Choshen* stones is the prevalence and availability of the stone in ancient times.¹⁰⁸ It is unlikely that they would have used a stone for the *Choshen* that was not considered a gemstone at the time of *Matan Torah*. However, this criterion must be applied cautiously, as it is not always clear when a particular stone began to be used in different parts of the world.¹⁰⁹

3. Descriptions of Stones in Tanach and Midrash

Details or specific descriptions of certain stones appear in other parts of the Tanach and Midrashim. These can provide valuable insights into the identification of some Choshen stones:

1. **Pitda** – Its origin is linked to Kush (*Iyov* 28:19): "The topaz of Kush cannot compare with it."
2. **Nofech** – Associated with Aram, possibly its origin (*Yechezkel* 27:16): "Aram was your merchant... with emeralds, purple, and embroidery."
3. **Sapir** – Described as having a sky-like hue (*Shemos* 24:10): "Like the Sapir brickwork, resembling the essence of heaven in purity."¹¹⁰
4. **Shoham** – Found in Chavilah (*Bereishis* 2:11–12): "The land of Chavilah... where there is bdellium and the shoham stone." It may also be considered particularly valuable (*Iyov* 28:16): "It cannot be valued in gold of Ophir, in precious Shoham or Sapir."

¹⁰⁸ Regarding stones used as gemstones in Egypt, see:

- A. Lucas, *Ancient Egyptian Materials and Industries*, London, 1989, Chapter 16.

It should be noted that Lucas lists the primary gemstones of Egypt, counting 25 stones, and all the stones proposed here as *Choshen* stones (whose identification is based on the Septuagint but not exclusively) are found in his list. These actually constitute half of the significant gemstones in Egypt.

For general information on stones used in Egypt, much can be learned from a collection of Egyptian documents:

- J. H. Breasted, *Ancient Records of Egypt* (Five volumes), Chicago 1906–1907.

For stones used in Mesopotamia (Elam, Assyria, and Aram), see:

- P. R. S. Moorey, *Ancient Mesopotamian Materials and Industries*, Oxford 1994, Chapter 2.

For a comprehensive book on stones used as gemstones and seals in ancient times in general, see:

- G. R. Rapp, *Archaeomineralogy*, New York 2008, Chapter 5.

¹⁰⁹ For example, there are stones that were known in India since antiquity but reached the West only in the classical period. There may be additional reasons why the Greeks, for some reason, did not mention a particular stone, making it difficult to draw conclusions from such omissions.

¹¹⁰ However, see below in note 183, where Rav Saadia Gaon understood this verse differently.

A comprehensive survey using this method was conducted by Rabbi N.Z. Piontek.¹¹¹

E. Identifying the Choshen Stones Using These Methods

In this section, each stone is identified based on the aforementioned sources and tools, carefully weighing their significance. The Septuagint's Greek translation will be presented first, followed by the Syriac Hexapla transliterated into Hebrew letters. Any discrepancies between the two will be noted in parentheses, followed by the proposed identification.

Odem (אדמ)

- **Septuagint:** σαρδιον (*sardion*)
 - This refers to the modern "carnelian,"¹¹² a red-to-orange opaque quartz. This identification aligns with the Hebrew name *Odem* (red) and all Aramaic translations, which derive from the root ק-ח-ו (red in Aramaic).
 - *Bamidbar Rabbah* also describes the stone as red. Carnelian was widely used as a gemstone and for seals from the time of the Exodus until the Second Temple period.¹¹³ Pliny mentions¹¹⁴ its abundance in Egypt, where it is still found today.
- The Chizkuni also translated "Odem" as "Sardina," as did Rashi in the Munich manuscript, and Rabbi Avraham the physician as "Corneol." It appears that this is also the intent of the Midrash in *Shemos Rabbah*, which writes "Shadragnin."¹¹⁵

¹¹¹ Rabbi N.Z. Piontek, "*Studies in the Identification of the Choshen Stones*," *Shmaatin*, 106 (1992), pp. 34–40.

¹¹² Nowadays, a distinction is made between "Sard" (derived from the ancient name *Sardion*), which tends to be more brown or orange, and "Carnelian," which has two types (XXX red). However, this distinction did not exist in ancient times. Theophrastus writes about *Sardion*, mentioning male and female variations, and from his description, it appears that the "female" refers to Sard while the "male" refers to Carnelian. Pliny even lists five types of Sard, ranging from red to a honey-like hue.

¹¹³ This stone was the most common among gemstones in ancient times (see **J. Spier, *Ancient Gems and Finger Rings*, Malibu (California), 1992, pg. 5**).

¹¹⁴ Chapter XXXI

¹¹⁵ This is the version found in all manuscripts and early printings. In the London manuscript (Sassoon Collection 920), it may read *Shadrangin*. See **S. Lieberman (above, note 39)**.

In *Arukh*, the word also appears as *Shadragnin*, but this entry does not appear in the original manuscripts or early printings. It was added by R' Binyamin Mussafia in *Mossaf HaArukh*, which was printed together with *Arukh* in Amsterdam, 1655. This should not be considered evidence for a more accurate version.

[When Mussafia added an entire entry that was not in the original *Arukh*, he prefixed it with the mark *Yad* to indicate it was his addition. However, later printings omitted these marks, causing these entries to become absorbed into the *Arukh* itself. Notably, most entries related to gemstones (especially those referring to the stones of the *Choshen* in *Shemos Rabbah*) originate from *Mossaf HaArukh*, not the *Arukh* itself.]

- Another identification suggested by several commentators (R' Saadya Gaon), Rabbeinu Bachya, Abarbanel) for this stone is the "Ruby"¹¹⁶ (red corundum). However, based on archaeological findings and the knowledge available from ancient literature, this stone was unknown in earlier periods. Therefore, it is unlikely that it is the "Odem" mentioned in the Torah.¹¹⁷

Pitda (פטדה)

- **Septuagint:** τοπαζιον (*topazion*)
 - From the descriptions of *Topazion* in Pliny and other ancient sources, it is clear that this refers to what is known today as **Peridot**, a transparent green gemstone made from the mineral *Chrysolite* (olivine).¹¹⁸
 - This identification aligns with the translations of this stone in the Aramaic Targumim, all of which are rooted in the verb י-ר-ק (*yarok*, meaning green).¹¹⁹ Additionally, *Bamidbar Rabbah* states that Shimon's stone was green.
 - This gemstone is found on **Zabargad Island**¹²⁰ in the Red Sea near Kush, which corresponds with the verse in *Iyov* (28:19): "It cannot be valued with the Pitda of Kush."

¹¹⁶ It is interesting to note R' Eliyahu Bachur's statement in *Sefer HaNimukim* (Berlin, 1847, p. 423, entry "Odem"): "Some say that Odem was chosen for Reuven in the Choshen because 'Rubin' (Ruby) and 'Reuven' are linguistically similar."

¹¹⁷ See P. R. S. Moorey, *Ancient Mesopotamian Materials and Industries*, pg. 82.

And it is unlikely to say that, nevertheless, the Ruby would be valid for use as the *Odem* in the *Choshen*, as argued by Z. Amar. See A. Segal, "HaAvanim HaMitgalgelot," *Makor Rishon*, issue 904, 13 Kislev 5775, p. 12. If the ancients had encountered this stone, they would certainly have classified it among the types of *Anthrax*, which included all kinds of transparent and radiant red gemstones (see below regarding *Bareket* and *Nofech*). *Anthrax* had already been used as a translation for *Nofech* (or *Bareket*).

However, this reasoning does not conclusively prove that Ruby is not included under *Odem* in *Lashon HaKodesh*. It only indicates that one cannot definitively prove that it belongs to *Odem* rather than *Bareket* or *Nofech*.

¹¹⁸ All researchers agree, based on Pliny's statement, that this is the largest of all gemstones and the only one (XXXII) that can be polished with a simple abrasive and wears down over time with use. See J.A. Harrell, "Old Testament Gemstones," *Bulletin for Biblical Research*, 21.2 (2011), pg. 163.

¹¹⁹ ירקן – In Onkelos, it is rendered as ירקן, while Targum Yonasan and Yerushalmi have ירקתא. Similarly, in Targum Iyov (28:19), פטדה is translated as מרגלא ירקא.

¹²⁰ There's a mention in the Targum on Iyov (1:15) regarding ותפול שבא, which might indicate that this island is what is known today as St. John's Island (see P.C. Keller, *Gemstones and their Origins*, New York 1990, pp. 119-127).

- It is likely that this is also the meaning of the Midrash Rabbah, which refers to the stone as *Shompozin*, a term that appears to be a corruption of *Topazion*, with a *Shin* mistakenly replacing a *Tav*.¹²¹
- Rabbi Avraham HaRofeh also translated *Pitda* as *Topazios*, and it is possible that this is what **Rav Saadia Gaon** meant in his translation as *Zamrud*, which was the Arabic term for all green gemstones, including Peridot.¹²² (*Zamrud* generally refers to Emerald, as it does in modern Arabic, but it was used more broadly in earlier times.)
- Additionally, the name *Topazion* is quite close to *Pitda*, with only a common phonetic interchange of *Zayin* and *Daled*, and a slight rearrangement of letters.¹²³

¹²¹ In **Chizkuni** and **Rashi's manuscript from Munich**, **Topaz** (טופצא, אטופצי) is translated as **ברקת**. According to Chizkuni, **Emerald** (which, per the Septuagint, is **ברקת**) is actually **פטדה**. Apparently, they followed a tradition (or a source they had) that there was a switch between this stone and the one after it—just like we will later discuss that **ברקת** was switched with the following stone rather than the previous one.

¹²² **Al-Biruni**, in *Sefer HaAvanim* (see note 183, p. 140), writes that **זמרוד** and **זברג'ד** are two names for the same stone.

¹²³ In **Tehillim (119:127)**, the word **פז** in the pasuk "**על כן אהבתי מצותיך מזהב ומפז**" is translated in the Septuagint as "**טופזיין**".

- In the Syriac-Hexapla: "**מטל הדא אחבת פוקדניך יתיר מן דהבא וטופאזיין**".
- A marginal note there says **Sumchus** translated **פז** as "**דהבא רישיא**" (fine gold).
- This differs from every other place in Tanach, where **פז** is either translated as a general **יקרה** (precious stone) or as gold.

If there's indeed a connection between **פטדה**, **פז**, and **טופז** (and it's not just a guess or a scribal error in the Septuagint where **מ** got swapped with **ט**, making **מזהב וטפז**), the word progression could be: **פטדה < פטדה < [ט]פז < טופזיין**.

However, it's hard to say that **פז** and **פטדה** are truly synonyms, since in **Iyov (28:17-19)** they are listed as distinct things:

- "**לא יערכנה זהב וזכוכית ותמורתה כלי פז... לא יערכנה פטדת כוש**".

Based on **זהב מופז** (Melachim I 10:18), one might argue that **פז** is not a gemstone but a particular refinement of gold—maybe exceptionally pure gold (like Targum Yonasan there: "**דהבא טבא**"). However, the **Peshitta** translates it there as "**מאופיר**", implying that **מופז** is just shorthand for **מאופז**, and **אופז** is synonymous with **אופיר**.

- This is supported by **Yirmiyahu (10:9)**: "**כסף מרוקע מתרשיש יובא, וזהב מאופז**", where **אופז** seems to be the place the gold was sourced from.
- Targum Yonasan (and the Peshitta) translate it as "**ודהבא מאופיר**".
- Indeed, we find "**כתם אופיר**" (Yeshayah 13:12, Tehillim 45:10, Iyov 28:16) and "**כתם אופז**" (Daniel 10:5), indicating that **אופיר** and **אופז** are interchangeable.

Given all this, it's still possible that **פז** is distinct from **מופז/מאופז** and is a name for a different precious material—perhaps even a gemstone.

Barekes (ברקת)

- **Septuagint:** σμαραγδός (*smaragdōs*)
 - This is a general term for green gemstones,¹²⁴ including emerald (*green beryl*), malachite, and others.

Nofech (נופך)

- **Septuagint:** ἀνθραξ (*anthrax*, meaning "coal" or "glowing ember")
 - Its meaning is **coal** (or ember). This is also how **Chizkuni**, **Rav Moshe Provenzali**, and **Rav Avraham HaRofeh** explained it, and this is also Rashi's opinion (Yechezkel 27:16, Avodah Zarah 8a s.v. *Einech*),¹²⁵ as found in Rashi's manuscript from Munich.
 - According to **Pliny** and other ancient works on gemstones, **Anthrax** refers to **Garnet**, a sparkling red stone.¹²⁶ It's reasonable to assume that in later periods, this term came to include other similar stones as well.¹²⁷

Nofech and Barekes According to Other Sources:

Targum Onkelos and Targum Yerushalmi translate **Nofech** as *Azmargadin* and **Barekes** as *Barkan*, which means a "shiny stone."¹²⁸ That means the Aramaic translations are the exact opposite of the **Septuagint**, which holds that **Barekes** is green and **Nofech** is a sparkling red stone.

So we have to say that at some point, the translation of these stones got swapped between one of these two sources. It seems that the mistake is in the **Septuagint**, not the Aramaic translations. Meaning, **Barekes** is *Anthrax* (Carbuncle), and **Nofech** is *Smaragdus* (Emerald).

There are several reasons to support this conclusion:

1. **Similarity of the names:** The name **Nofech** seems to be related to the stone **Puch**, as Rashi (Yeshayahu 54:11) writes that *Puch* is *Nofech*. As explained later, *Puch* is the

¹²⁴ **Pliny** (Book XVII-XX) discusses twelve different varieties of this stone.

¹²⁵ Rashi identifies the "**Einech**" with **Nofech**, writing: "*Einech—this is Nofech, Carbuncle.*" However, this requires further analysis, since seemingly, "**Anach**" refers to **Onychion**, which would indicate a different stone, not Carbuncle. Additionally, it must be determined how Rashi knew this.

¹²⁶ See the notes on **Theophrastus**, 1956 edition, note 18, p. 89, and **Harrell** (see above, note 118), pp. 153–154.

¹²⁷ Similar to **Ruby (transparent red Corundum)** and **red Spinel**. See the previous note for further discussion, as well as **King, Precious Stones** (see above, note 70, pp. 225–241).

¹²⁸ Similarly, **Rabbenu Bechaye** (Shemos 28:17) explains that **Barekes** is named for its brightness, "flashing like lightning and shining like a candle." Likewise, **Radak** (*Sefer HaShorashim*, entry *Barak*) writes, "*It is called thus because it gleams like lightning.*" From **Akkadian**, it seems that this refers specifically to a **sparkling red stone** (see further discussion near note 144).

Hebrew name for the eye-coloring substance that Chazal refer to as *Kachol* (kohl),¹²⁹ which in ancient times was made from ground **Malachite**.

2. **In Tanach, Nofech and Puch seem interchangeable:** In Yechezkel (27:16), it says: "*With Nofech, Argaman, and embroidery,*" and in Divrei HaYamim I (29:2), it says: "*Stones of Puch and embroidery.*" Similarly, in Yeshayahu (54:11), it says: "*Behold, I lay your stones with Puch and set you with sapphires... and make your windows of Kadkod.*"
According to the structure of the **Choshen's second row**¹³⁰ – "*Nofech, Sapir, and Yahalom*" – it comes out that *Puch* in Yeshayahu is in place of **Nofech** in the Choshen. This aligns with what we will explain later that *Yahalom* was translated as *Kadkod* in Targum Yonasan and Targum Yerushalmi.¹³¹
3. **The Peshitta translates Nofech as Tzidida,**¹³² **and the same translation is used for Puch in Targum Yonasan on Nevi'im:** In Yeshayahu (there), "*I lay your stones*¹³³ *with Puch.*" Also in Melachim II (9:30), "*She put Puch on her eyes,*" and in Yirmiyahu (4:30), "*Though you apply Puch to your eyes.*"¹³⁴
4. **In Iyov (42:14), Keren HaPuch is translated in the Aramaic Targum as Azmargada, and in Divrei HaYamim I (29:2), Avnei Puch is translated as Azmargadin.**
Besides being further support for Targum Onkelos and Yonasan translating **Nofech** as *Azmargadin*, it also proves that **Puch is Nofech**, since both are translated using the same term.

¹²⁹ According to the **Arukh HaShalem** (vol. 4, pp. 213–214, entry *Kachla*), "*Kachol*" was not a general term for the color blue, but rather the name of a **specific dye**, which was usually made from **antimony** mixed with ground stone, giving it a **blue or green tint**.

¹³⁰ This parallel was also noted by several **Rishonim from Ashkenaz** (see *Perush Baalei HaTosafos al HaTorah*, Shemos ch. 28, also cited in *Sifsei Kohen al HaTorah*), which states:

"*Nofech, Sapir, and Yahalom—this has the gematria of 'Yerushalayim,' for Hashem will one day rebuild it, as it says: 'Behold, I will lay your stones with Puch and establish you with Sapirim.'*"

Sifsei Kohen further concludes: "**Puch is Nofech.**"

¹³¹ It seems that the **names of the Choshen stones** were those commonly used at the time of **Yetziyas Mitzrayim**, but over the generations, some of these names were replaced with newer ones—such as:

- "**Ekdach**" instead of **Barekes** (according to Rashi),
- "**Kadkod**" instead of **Yahalom**,
- "**Chashmal**" instead of **Leshem**,
- And "**Puch**" instead of **Nofech**.

¹³² It is very likely that "**Tzidida**" in the **Peshitta** replaces "**Azmargadin**", since otherwise, the **Peshitta** would be the **only** translation that did **not** identify one of the **Choshen stones** with this very well-known ancient gemstone.

¹³³ The fact that "**Puch**" refers to **eye makeup** can also be seen in the **Dead Sea Scrolls**, in the **Isaiah Pesher (4Q164)**, where this verse is interpreted as: "*Like Puch in the eye.*" Similarly, in **Pesikta de-Rav Kahana (Pesikta Aniyah So'arah)**, it is written regarding **Puch**: "*Like this Kuhl (kohl).*"

¹³⁴ In both these cases, the **Peshitta** also translates **Puch** as "**Tzidida**", but in the pasuk "*I lay your stones with Puch*", the **Peshitta** translates it as "**B'Berula**".

5. It seems that **"Puch"** is also the name of a stone that was ground to produce the **Puch (blue pigment)**, together with other materials.

In Tanach-era times, [in Egypt and other places in the Middle East], this was done using **Malachite**,¹³⁵ which is one of the **Smaragdus** stones listed by **Pliny the Elder**. On the other hand, this kind of process was **not** done with any of the stones identified as *Anthrax/Carbuncle*, since those stones have no color at all after they are ground up.

The **Aramaic translation** should be preferred over the **Septuagint** for the following reasons:

1. The order in **Targum Onkelos** should be preferred, as it was used by **all of Klal Yisrael** for public reading in shuls. Its **mesorah** is very strong, having been preserved by people who were extremely meticulous in its transmission.¹³⁶ Therefore, it is difficult to assume that within it, a mistake such as swapping the order of the stones from one pasuk to another would have occurred. If we assume that during the time of **Bayis Sheini**, people still spoke **Lashon HaKodesh**,¹³⁷ Targum Onkelos has a special advantage over all other translations, as it was used by a population that still spoke **Lashon**

¹³⁵ For the use of **ground Malachite** as a pigment, particularly for **eye makeup/blue dye**, see:

- **Lucas**, pp. 451–452
- **Moorey**, *Ancient Mesopotamian Materials* (pg. 92)
- **Rapp**, *Archaeomineralogy* (pp. 113, 165)

¹³⁶ An example of the meticulous preservation of the **Targum Onkelos** text can be seen specifically in the **Onkelos Masorah** on this word, where a note states:

"In the first case: 'Az margazin'; in the second case: 'Az margadin.'"

Indeed, in **many manuscripts (mainly from Europe)**:

- In **Parshas Tetzaveh**, the word appears as **"Az margazin."**
- In **Parshas Pekudei**, it appears as **"Az margadin."**

The **Masorah to Targum Onkelos** is a work similar to the **Masorah on the Mikra**, noting **variant readings** and **grammatical nuances** in the **Targum**. It was compiled in an early period, and all known fragments of this Masorah were collected by **M. Klein** in *The Masorah to Targum Onkelos*, Binghamton 2000.

However, it should be noted that:

- In **manuscripts from Babylonia and Yemen**, this distinction does **not** appear—both instances contain **"Az margadin."**
- Some **European manuscripts** have **"Az margazin"** or **"Az margadin"** in **both places**.
- This **Masoretic note** appears in **only one manuscript** that includes the **Targum Masorah**, leading the **editor of the Masorah** to **question whether this note is truly ancient**.

¹³⁷ Regarding the question of whether **Lashon HaKodesh** was still a spoken language during the time of the **Mishnah**, see:

- **E. Y. Kutscher**, *A History of the Hebrew Language*, Jerusalem 1982, pp. 115–118.

HaKodesh¹³⁸—which makes it even more difficult to say that such an error occurred within it.

2. The **way the Targum was read in shuls** was by reading it **pasuk by pasuk** along with the mikra.¹³⁹ This was also the way it was written in many early manuscripts.¹⁴⁰ This

¹³⁸ Although **Rashi** (Megillah 21b) writes:

"The Targum exists only to be recited for the benefit of women and ignoramuses who do not understand Lashon HaKodesh, and the Targum is the Babylonian vernacular,"

Nonetheless, various scholars have demonstrated (see, for example, **Moshe Bar-Asher, *Lashonot Rishonim – Studies on Biblical Hebrew, the Dead Sea Scrolls, and Aramaic*, Jerusalem 2012, p. 381 and onward**) that **Targum Onkelos** was still used by **all of Klal Yisrael** during a time when **Lashon HaKodesh was still spoken**, even if we say that its **primary institution** was not intended for them.

¹³⁹ See the **Mishnah in Megillah (4:4)**: *"One should not read more than one verse at a time for the Meturgeman (translator)."*

See also **Rashi (23b)**, who explains that this is due to the concern that the **Meturgeman**, who translated orally, might make a mistake (see further discussion in the next note).

¹⁴⁰ Manuscripts such as those mentioned above in **note 79** support the traditional format of **Targum Onkelos**, where verses are read and translated **alternately**.

However, the **earliest fragments of biblical translations**, such as those found among the **Dead Sea Scrolls**, do not follow this structure. For example, fragments from **4Q156**, which contain a **literal Aramaic translation** of several verses from **Vayikra**, as well as **4Q157**, a complete **Targum of Iyov**, are written in **continuous Aramaic text** rather than interspersed with Hebrew verses.

A similar conclusion can be drawn from the **incident involving a Targum of Iyov in the time of Rabban Gamliel**, as recorded in:

- **Bavli Shabbos 115a**
- **Yerushalmi Shabbos 16:1**
- **Tosefta Shabbos 13:2**
- **Sefer Sofrim 15:2**

Each version has slight variations, but the core story remains the same:

Rabbi Yosei said: *There was an incident involving Abba Chalafta, who went to visit Rabban Gamliel in Tiberias and found him sitting at the table of Yochanan HaNatzuf, with a Targum of Iyov in his hand, reading from it. He said to him: "I remember that Rabban Gamliel, your grandfather, once stood on the upper platform of Har HaBayis, and they brought before him a Targum of Iyov. He told the builders: 'Bury it under the construction!' He too ordered that it be hidden."*

Rabbi Yosei bar Rabbi Yehuda said: *"They overturned a vat of clay on it."*

Rabbi said: *"There are two problems with this statement: First, from where would there be clay on Har HaBayis? And second, is it permitted to actively destroy it by hand? Rather, they placed it in a weak spot so that it would decay on its own."*

This episode suggests that **the Targum was written as a separate text, not interwoven with the Hebrew pesukim**, since if the **Targum had been written alongside the Mikra**, there would have been **no halachic permission to destroy it**, even if it were written in another language.

format makes it very difficult to mix up the stones from one pasuk with those in the next.

3. The translation of **Barekes** in all **Aramaic translations** (including the **Peshitta**) is *Barkan*, which fits the translation style of the first row of stones on the **Choshen**, which is a general description of the stones: *Samkan*, *Yarkan*, *Barkan* (a red stone, a green stone, a shiny stone). Therefore, it is even more difficult to assume that the **translation of Barekes was swapped with Nofech**. In truth, the list should have been *Samkan*, *Yarkan*, *Azmargadin*, and **only Nofech** should have been translated as *Barkan*, not Barekes!
4. The translation of **Nofech as Azmargadin** is also supported by **Targum Yonasan**¹⁴¹ on **Yechezkel** (and its additional Targum), which also translates **Barekes as Barkan** and **Nofech as Azmargadin**.

Additional reasons to support the Aramaic translation of these stones:

1. The name **Barekes** seems to refer to the **shine** of the stone,¹⁴² and **Azmargadin (Emerald)**—especially the type used for dye in ancient times (*Malachite*)¹⁴³—does not fit such a name. **Carbuncle (Anthrax/Garnet)**, on the other hand, is known for its **shine and glow like a burning ember**, which matches its Greek and Latin names.
2. Additional support for this comes from the **Akkadian word "Barka"** (feminine "Barkata," construct form "Barekes"), which means **red**.¹⁴⁴ If so, this strongly suggests that the

At the same time, this implies that **Targumim were primarily transmitted orally**, since writing them down is presented as an **unusual practice**.

This is further supported by **Rashi** (Shabbos 115a), who states:

"I say that even regarding the Nevi'im, if Yonasan said it, he did not write it, and it was not given to be written."

A similar inference may be drawn from the **Yerushalmi Megillah 4:1**.

Whether this **oral transmission increases or decreases the likelihood of textual errors** remains an open question.

¹⁴¹ According to the **Talmud Bavli (Megillah 3a)**, the **Targum to Nevi'im** predates **Targum Onkelos** by a significant period. The **Bavli** states that the **Targum to Nevi'im** was authored by **Yonasan ben Uziel**, a disciple of **Hillel**, who lived **long before Onkelos**.

(See also **note 77 above** and **Appendix B** regarding **Onkelos and Aquilas** for further discussion.)

¹⁴² See above, **note 128**.

¹⁴³ See above, **note 135**.

¹⁴⁴ According to **The Assyrian Dictionary of the Oriental Institute of the University of Chicago**, vol. 2, Chicago 1965 (reprinted 1998), p. 332, entry *burruqu*, the cited Assyrian text states:

Barekes stone is also red.

3. According to the **Midrash (Bamidbar Rabbah)**, the color of **Nofech** is **like the sky**.¹⁴⁵ The color of **Anthrax (Carbuncle)** is consistently¹⁴⁶ described as **red, like a glowing ember**, which fits **Barekes**, since according to the **Midrash**, it was red (with white and black mixed in).¹⁴⁷ However, among the **Smaragdus stones** listed by **Pliny**, there is the **Median Smaragdus**, which he describes as ranging from **green to blue**.¹⁴⁸ Based on the **Midrash**, this could be **Nofech**.
4. In **Shemos Rabbah**, **Barekes** is translated as *Diknatin*. Among the types of **Diknatin** is **Garnet**,¹⁴⁹ but it has no connection to **Smaragdus (Emerald)**, which appears

"If a woman is called 'Barekes,' it means that her face is red and her hair is red."

¹⁴⁵ Some have suggested that the **Midrash** refers to **green**, meaning that **Nofech** resembles **garlic cloves**, aligning with **Targum Onkelos**. However, in **Chazal's terminology**, green is typically described as **"similar to leek"** (כרתי) or **"like grass"** (עשבים).

In **Midrash HaChefetz (Yalkut Midrashim Teimani)**, it is quoted:
"Yehudah's stone is Nofech, and his banner is green, like the color of the sky."

This requires further clarification.

¹⁴⁶ See, for example, **Theophrastus (On Stones XVIII)** in **E. Caley's 1956 edition**, p. 48 (translated from Greek into English):

"Its color is red, and when held against the sun, it has the appearance of a burning ember."

This description refers to **Anthrax (Carbuncle)**.

¹⁴⁷ In **Bamidbar Rabbah**, the **flag of Shevet Levi** is described as having **one-third red, one-third black, and one-third white**, corresponding to the color of **Levi's stone—Barekes**.

When depicting a **dark-colored stone** on fabric, where **part of it appears black** but its **main shine is red**, there is no effective way to do so other than the method described. If the flag were simply **plain red**, it would not resemble a **glowing ember**, which is the way **Carbuncle (Garnet)** is typically described.

Interestingly, the **Zohar Chadash (Yisro 66a)** also describes **Barekes** in a similar way:
"It shines at times white, and at times red—red and white."

This description aligns with the identification of **Barekes as Carbuncle/Garnet**, which exhibits **both red and white reflections** when it shines.

¹⁴⁸ This mineral is identified as **Malachite**, which is a **copper oxide**. Under certain conditions, it turns **blue**, at which point it is called **Azurite (On Stones XVIII)**.

¹⁴⁹ It appears that this name (**Jacinth/Hyacinth**) was originally used to refer to a **blue stone**, primarily **blue Corundum** (which is now commonly called **Sapphire** in many languages). However, over time, the term also came to be used for a **red stone**.

separately there as the translation of **Yahalom**.

Rabbi Berechiah HaNakdan, in his work *Koach HaAvanim*, writes:

"Another type, called Jacinth (Yakinton), is a Garnet; it is red like blood." (See further discussion in **Appendix E**).

Since we have **no sources** identifying **Barekes** as a **blue stone**, we must conclude that the reference here is specifically to **red Jacinth (Diknatin)**.

Rabbi David di-Pomi, in his book *Tzemach David* (Venice, 1582), writes:

"Yakinton—called Diacinto in the vernacular—is a precious stone, similar to Ruby... The common folk, as well as many gem craftsmen and merchants, call 'Diacinto' a golden-colored stone, but this is incorrect. The true Jacinth is like a Ruby."

From this, we see that he no longer recognized **Jacinth (Yakinton)** as a **blue stone at all**, only as **red or yellow**.

By 1652, **Thomas Nicols** (see above, note 9, p. 67) already used **Hyacinth (Jacinth)** exclusively as a name for a **red stone**, and he even classifies it under **Carbuncle**, just as we suggest here. However, he also cites earlier sources that had used this name for stones **of other colors**.

Nearly a hundred years later, in an **English article on gemstones**, we find a reference to **Jacinth** as a stone with properties similar to **Garnet**. From his description, it seems that the **Jacinth he describes is a type of Garnet**, likely **Almandine**, while the stone he refers to simply as **Garnet** is what is today known as **Pyrope Garnet**.

His words are as follows (*quoted verbatim due to translation difficulty*):

R. Dingley, "Some Observations upon Gems or Precious Stones," *Philosophical Transactions*, vol. 44 (1746–1747), pp. 502–506:

"The Jacinth is of a deep tawny red, like very old Port wine, but lively and transparent... The Garnet is of the same color as the Jacinth, but more inclining to purple, and not so lively."

5. **Rashi** explains that "**Ekdoch**" (**Yeshayahu 54:12**) is a **Carbuncle**,¹⁵⁰ which matches the **Targum**, which translates *Avnei Ekdoch* as *Avnei Gmar*—meaning "**coal-like stones**" (matching *Anthrax* in Greek and *Carbuncle* in Latin).¹⁵¹

If so, we must conclude that **Carbuncle** is **NOT Puch**, because **Puch** appears there as a **separate material from Ekdoch**:

- *"I lay your stones with Puch... and your gates with Avnei Ekdoch."*

¹⁵⁰ Similarly, **Rashbam** (Bava Basra 75a, s.v. *Ekdoch*) explains that "**Ekdoch**" means a **burning stone**. This aligns with what **Rabbenu Bechaye** (Shemos 28:17) writes regarding **Barekes**:
"The prophet called it 'Ekdoch,' as it says (Yeshayahu 54:12): 'And your gates of Avnei Ekdoch,' because it burns like an ember, and it comes from the root (Yeshayahu 50:11) 'Kodchei Esh' (kindling fire)."

Similarly, **Radak** (*Sefer HaShorashim*, root *K.D.Ch.*) writes:
"Perhaps it is called this because its appearance is like fire."

However, **Chazal** in several places (**Bava Basra 75a**, **Sanhedrin 100a**, and **Pesikta Aniyah So'arah [32]**) interpret "**Ekdoch**" as referring to **engraved stones**, explaining:
"In the future, Hashem will bring precious stones... and engrave upon them."

Rashi (Sanhedrin 100a) explains:
"That Hashem will engrave them like with a drill (Mikdach)."

Similarly, **Rashbam** (Bava Basra 75a) comments:
"And this is 'Ekdoch,' from the word 'Kodach,' meaning engraving."

Additionally, it is recorded that **Aquila (Onkelos' contemporary)** translated it as "**engraved stones**," and the **Vulgate** followed this translation.

However, it seems that this interpretation is only a **Midrashic explanation**, since in **Tanach**, the root **K.D.Ch.** **always refers to fire burning**, never to **engraving** (see **Radak**, *Sefer HaShorashim*, root **K.D.Ch.**, where he lists all its biblical usages).

¹⁵¹ In **Bereishis (2:12)**, the **Syro-Hexapla** translates the word "**Anthrax**" from the **Septuagint (LXX)** into **Syriac** as "*Gumarta*."

This indicates that the equivalent of "**Anthrax**" is indeed "**Gumar**," and it seems that this is what the **Targum** means here when it translates "**Avnei Ekdoch**" as "**Avnei Gumar**."

6. At the end of **Sefer Tuvya (Tobit 13)**,¹⁵² the vision of the rebuilt **Yerushalayim** closely parallels **Yeshayahu 54**:
- In **Yeshayahu**: *"I lay your stones with Puch, set you with Sapirim... and your borders with Avnei Chefetz."*

¹⁵² **Sefer Tuvya** is one of the **Apocryphal books**, likely written at the **beginning of the Second Temple period**. The book describes the life of a Jew named **Tuvya**, who was among the exiles of **Shalmaneser in Ashur**, as well as the life of his son.

There are **two Greek versions** of the book:

1. A **short version**, found in most manuscripts.
2. A **long version**, preserved in **Codex Sinaiticus** (considered the oldest complete manuscript of the **Septuagint**) and several other manuscripts, as well as in the **Vetus Latina** (Old Latin translation).

The book has **not survived in full in Lashon HaKodesh**. Only **fragments** have been discovered among the **Dead Sea Scrolls**, in both **Hebrew and Aramaic**, but both versions align with the **long Greek text**.

The quotation referenced here follows the **long version**.

- In **Tuvya**:¹⁵³ *"Yerushalayim's gates will be built from Sapirim and Smaragdus, and all your gates from Avnei Chefetz."*
 Since **Tuvya's wording is based on Yeshayahu**,¹⁵⁴ it follows that **Smaragdus in Tuvya (Greek) corresponds to Puch in Yeshayahu**.
 Since **Tuvya was translated from Hebrew to Aramaic, then to Greek**, it seems that the early **Aramaic translator rendered Puch as Azmargadin**, which then became **Smaragdus** in the Greek translation.¹⁵⁵

¹⁵³ The passage is presented here in **free translation** from an edition based on the **Göttingen edition** (1983) and **York 2007**.

In the **London Polyglot edition** (1657), the **Hebrew translation** (done by a convert named **Paggius**) reads as follows:

"For He will build Jerusalem with sapphire stones (!), Yahalom, and Barekes, and all its walls with Ekdoch stones. Its towers and palaces will be of pure gold. And all its streets will be paved with Nofech and precious stones from Ophir..."

A comparison with the **Greek text** shows that this translation is **not accurate**.

In **Kahana's edition of the Apocrypha** (see above, **note 8**, version **B**):

*"For Jerusalem will be built as an eternal city... and the gates of Jerusalem will be built with **Sapir, Barekes, and Avnei Chefetz**. All its walls, the towers of Jerusalem, will be built from gold, and its courtyards from pure refined gold. The streets of Jerusalem will be paved with **Nofech and Ophir stones**."*

A **small fragment** of this passage appears in the **Dead Sea Scrolls copy of Sefer Tuvya (4Q196, fragment 18)**, but it is **too incomplete** to determine whether the stone translated here as **Smaragdus** refers to **Nofech or Barekes**. The text reads:

"...Sapir they shall be built... [G]old they shall be built and... ..in and with the stone of Y..."

(Based on this, it may be possible to reconstruct the missing section as:

"...in and with the stone of Y...")

For a **comprehensive analysis of Sefer Tuvya**, see:

- **G. W. E. Nickelsburg, *Stories in Biblical and Early Post-Biblical Times*, in *Jewish Writings of the Second Temple Period* (M. Stone, ed.), Philadelphia 1984, pp. 40–46.**

¹⁵⁴ As is **very common** in the **Apocryphal books** (especially the **Pseudepigrapha**), their texts are often **reworkings of earlier biblical texts**.

For the **parallel between the passage in Sefer Tuvya and the words of Yeshayahu**, see:

- **R. Henderson, *Second Temple Songs of Zion*, Berlin 2014, pp. 158–162.**

¹⁵⁵ See:

- **F. Zimmerman, *The Book of Tobit*, New York 1958, pp. 139–149**, regarding the origins of the **Greek translation of Sefer Tuvya, Ben Sira, and Sefer Yehudis**, as they appear in the **Septuagint**.

For a broader discussion on the **Septuagint translation of Nevi'im**, see:

This proves that the **Aramaic translation of Puch as Azmargadin predates the Greek version of Sefer Tuvya**.¹⁵⁶

7. In the **Syriac version of Ben Sira (32:6)**, **Nofech** is translated as *Zamargada*, and it seems that the **Greek version** follows the same pattern:

- The original Hebrew: *"Like a golden chain with Nofech and Sapir,¹⁵⁷ so is a fine voice at a wine feast."*
- **Syriac**: *"Like a golden chain and a ring with Zamargada, so is a fine voice at a wine feast."*
- **Greek**: *"Like a signet of Smaragdus in golden craftsmanship, so is a song with pleasant wine."*

Ben Sira's Greek translation was done by his grandson, who had better knowledge of Lashon HaKodesh¹⁵⁸ than the Septuagint translators, meaning his translation is more reliable.

Here, he translated **Nofech as Smaragdus**, in contrast to how it was translated in the **Septuagint for the Choshen stones**. Either he had a **better mesorah or Targum**, or the mistake in the **Septuagint** had not yet occurred in his time.

8. A **similar proof** is found in **Sefer Yehudis (Judith 10:21)**, which describes **Holofernes¹⁵⁹ tent**:

- *"And Holofernes lay in his bed under a canopy woven with Argaman, gold, Smaragdus, and precious stones."*
If Sefer Yehudis was translated from Lashon HaKodesh¹⁶⁰, it is difficult to say that

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- **E. Tov, "Reflections on the Septuagint: The Nature of the Translations of Nevi'im," *Textus* 25 (2011), pp. 51–72** (especially p. 62) and the sources and articles he cites throughout.

¹⁵⁶ Further support for this comes from the testimony of **Jerome**, who stated that he translated **Sefer Tuvya** from an **Aramaic text**, and he also wrote "**Smaragdus**" in this context.

This proves that "**Smaragdus**" was already present in the **Aramaic version of Sefer Tuvya**. This provides evidence of yet another (**anonymous**) **translation** that rendered "**Nofech**" as **Smaragdus**—unless **Jerome** relied on the **Septuagint** to translate the corresponding **Aramaic term** in his version.

¹⁵⁷ Regarding the translation of "**sapir**", see also **Appendix V**.

¹⁵⁸ It is interesting to note that **Rabbi Yehuda HaNasi** speaks about one who "**adds his own nofch**" to a vessel (*Kiddushin* 48b, *Bava Kama* 99b), implying that he was familiar with the **nofech** by name—otherwise, he would not have used this term metaphorically.

It is well known that in Rabbi Yehuda HaNasi's household, they preserved **pure Hebrew**, to the extent that even the maidservant in his home was proficient in **Lashon HaKodesh** (*Rosh Hashanah* 26b, *Megillah* 18a).

For further discussion on the **maidservant in Rabbi's house**, see **E. Kutscher, *A History of the Hebrew Language*, Jerusalem, 1982, p. 192.**

¹⁵⁹ According to **Kahana's translation** (*in Sefarim Chitzonim*).

¹⁶⁰ See: **Y.M. Grintz, *Sefer Yehudit*, Jerusalem, 1957 (5717), pp. 56–63.**

the word translated into Greek as "**smaragdus**" was originally "**barekes**", since we never find **barekes** mentioned independently in Tanach—only as part of the list of the Choshen stones. Therefore, it is more reasonable to assume that in Hebrew, the word used was "**nofech**" or "**puch**", which was then translated into Aramaic as "**azmargadin**", and from there into Greek as "**smaragdus**", and into Latin.¹⁶¹

- There is support for the idea that the original Hebrew text contained "**puch**" based on the fact that some of these items appear together in other places. (We have already noted the connection between **nofech** and **puch**.) In **Yechezkel (27:16)**, we find:

"With **nofech**, **argaman**, embroidered work, **butz**, **ramot**, and **kadkod**."

Similarly, in **Divrei HaYamim I (29:2)**:

"**Avnei puch**, embroidered work, and every precious stone."

9. **Jerome**¹⁶² writes that **Symmachus the Ebionite** disagreed with the **Septuagint's** identification of **Ceraunium** (Thunderstone) as **Barekes**.¹⁶³

- **Ceraunium**¹⁶⁴ is a red or blue stone, believed to fall from the sky during storms.
- **Pliny**¹⁶⁵ wrote about this stone, noting that some believe it falls from the heavens with lightning and that it is a red or blue stone. From the descriptions given by **Pliny**, **Solinus**¹⁶⁶, and **Isidore of Seville**¹⁶⁷, it seems that this term encompasses several types of stones, one of which is the **garnet**¹⁶⁸.

¹⁶¹ However, this may not serve as proof, since it is possible that "**smaragdus**" was a translation of "**shoham**", which was also translated as "**smaragdus**" multiple times, as we will explain later. **Shoham** appears both independently and together with "**avnei milu'im**".

¹⁶² See above, note 53.

¹⁶³ Although in all other instances he agrees with the **Septuagint's** translation, here he saw fit to disagree and translate differently, which is noteworthy and requires further examination.

¹⁶⁴ Similarly, **Rabbi Avraham HaRofeh** in *Shiltei HaGibborim*, Jerusalem (5770/2010), pp. 202, 204, translates "**barekes**" as "**Tzirabano**" or "**Chirabanos**", explaining:

"In our sacred language, this stone is called 'Barekes' because it descends to the earth along with lightning ('barak')."

¹⁶⁵ Chapter LI

¹⁶⁶ Chapter XXXV

¹⁶⁷ Isidore (see above, note 66), **XVI.xii.5**, p. 326, mentions this stone.

¹⁶⁸ King, in *Avnei Chen* (see above, note 70), p. 77, writes that the "**Chiraunium**" is one of the types of **Carbunculus** (which he identifies as the ruby).

Solinus explicitly states that the **Chiraunium** found in **Spain (Lusitania)** has the same hue as the **Carbuncle**.

[It can even be inferred from **Solinus's** words that the two types of "**Chiraunium**" were named for different reasons—one (the **German** variety, which is blue) because it falls with lightning, and the other (the **Spanish** variety, which is red) because it protects against lightning. However, in reality, there is no real connection between these two types.]

- Even if it is not entirely clear that **Symmachus** referred to this specific stone, his words nevertheless cast doubt on the identification of **barekes** as "**azmargadin**" (**emerald**). However, regarding **nofech**, we have not found that he disputed the **Septuagint's translation**.

Conclusion:

From all of the above, it is clear that the **Septuagint and related translations mistakenly swapped the translations of Barekes and Nofech**.¹⁶⁹ The correct identification is:

- **Barekes = Anthrax (Carbuncle/Garnet)**
- **Nofech = Smaragdus (Emerald/Malachite)**
This is how it appears in **all the Aramaic translations** (Onkelos, Yonasan, Peshitta).

Returning to the Corrected Identifications:

- **Anthrax (ἄνθραξ) – Barekes (ברקת):**
From descriptions of this stone in ancient texts, it is clear that it refers to the **red garnet**. The name "**barekes**" fits this stone well, as it shines from within in a unique way, resembling a glowing ember. This also aligns with **Midrashic descriptions of its color** (as we previously noted in footnote **147**). This stone was known in Egypt from **very early periods** and was found in the **eastern Egyptian and Sinai deserts**, but it was only brought to **Greece and Rome** after Alexander the Great's conquests in the East.¹⁷⁰
- **Smaragdus (Σμάραγδος) – Nofech (נופך):**
According to **Pliny**, **Smaragdus** encompasses **twelve different green stones**, now identified as different minerals.¹⁷¹ However, only **two of them** were used in ancient times as **eye paint**—a characteristic associated with **nofech/puch** (as we mentioned above)—namely, **Malachite and Chrysocolla**. These two stones have a **very similar chemical composition**.
Theophrastus¹⁷² suggests that these were the **primary varieties of Smaragdus**.¹⁷³

¹⁶⁹ It is possible that this mistake arose due to the similarity between the names "**Barekes**" and "**Smaragdus**", where the **Bet** was replaced with a **Mem**, and the **Kuf** with a **Gimel**.

¹⁷⁰ See **Lux (above, note 108)**, pp. **451–452**.

¹⁷¹ In chapters **XVII–XX**.

¹⁷² In excerpts **XXV–XXVII**, pp. **97–98**, and in the **1956 edition**, expanded in **note 23, p. 97**.

¹⁷³ See **Harl (above, note 118)**, pp. **161–163**.

- From his statement that it is **found in copper mines** and from other characteristics he describes,
- Including reports from earlier sources that **it is sometimes found in very large masses** (up to **six feet by four and a half feet**, about **two meters by 1.5 meters**),
- A size that is **not possible for any green stone except Malachite**.

Even **larger Malachite columns** still exist today in an **ancient church in Istanbul**.

However, **Malachite** appears to have been used **more often** as a gemstone.¹⁷⁴ Some scholars¹⁷⁵ argue that these stones were called "**Mefikhi**" or "**Nefikhi**" in **Egyptian**, which further strengthens the identification with **Nofech**.

- **Sapir (σάπφειρος) - (ספיר):**¹⁷⁶

Based on ancient descriptions of **Sapphirus**, it is widely agreed that the term "**Sapphirus**" refers to the **Lapis Lazuli** (a deep **blue**, **opaque** stone) and not to what we call "Sapphire" today. This stone was highly valued and well-known in **ancient Egypt**.¹⁷⁷ **Theophrastus and Pliny**¹⁷⁸ explicitly state that **Sapphirus** is **not transparent** and contains **gold-like flecks**¹⁷⁹, along with other characteristics that align **only** with **Lapis**

¹⁷⁴ According to Lucas (pg. 451-452), Also the malachite, which is only rarely used as a gemstone, was primarily used for makeup; and seemingly; because of this, its name—nophek—was due to its usage and did not have a specific name as a gemstone. Only the Romans and Greeks, who greatly used malachite, gave it a specific name as a gemstone in its own right.

¹⁷⁵ Based on J. H. Breasted, *Ancient Records of Egypt*, Chicago 1906, vol. 1, pg. 274 (note e). Some Egyptologists disagreed with this (mainly based on Lucas's article, pgs. 456–458; see also note 108), and they wrote that its translation is *turquoise*, which was more significant and widespread in Egypt. However, from several Egyptian sources (cited below), it seems this name included all stones that were quarried in Sinai, including malachite and chrysocolla (*Breasted, Ancient Records of Egypt*, vol. 5, pgs. 143–144; see also *Rapp, Archaeomineralogy*, pg. 114).

¹⁷⁶ From the translation of the Syro-Hexapla here, it appears that the stone known in Greek as *sappheiros* was known in Syriac/Aramaic as *sapira* (or *sapphira*). There may be room to see in this another proof for identifying the Techeiles string (*Tash*) as sapphire, based on the translation of Job 28:6, where the word *sapir* in the verse "its stones are the place of *sapir*" was translated as *sapira* in the Targum of Job in the Q10 Dead Sea Scroll. [In the Dead Sea Scrolls version we have before us, *shabziza* appears, following Targum Onkelos on the Choshen stones, and *sapir* is translated as such in all Targumim on Kesuvim. However, in Targum Yonasan on the Neviim, it is always translated as *even tava* (a precious stone) without specification.] In two more places, *sapir* appears in the Dead Sea Scrolls within Aramaic documents (the Aramaic version of the Book of Tobit, see above; also in the text known as *The Vision of New Jerusalem*, Q554:4), and from the fact that they did not bother to translate them into Aramaic, it seems it was understood as is.

¹⁷⁷ See King, *Gemstones* (above, note 70), pg. 273; Kelly, in his notes on Theophrastus (above, note 70), note 137; Harrell (above, note 118), pgs. 136–159.

¹⁷⁸ Theophrastus in section XXI; Pliny in chapter XXXIX.

¹⁷⁹ It is possible that this phenomenon is hinted at in the verse (Job 28:6) "its stones are the place of *sapir*, and it has dust of gold," meaning that there is a kind of gold dust in the *sapir* (and not in the land spoken of there). A proof for this is that it says *lo* (לו, masculine), whereas before this, everything was in feminine language: "from it... and beneath it turns... its stones are the place of *sapir*, and it has dust of gold."

In *Pirkei DeRabbi Eliezer* (chapter 25), it is written that in Sodom there was a man "...who went to take vegetables and found gold beneath them, as it says, 'and it has dust of gold.'" Radal (ad loc., s.v. חולך וּלְוֹקָה) explains: "That he found it under the vegetables, this he expounded from what is written *afaros zahav lo*, in masculine language, whereas the whole section there discussing the land is in feminine—'*mekom sapir avaneha*.' And the commentators seem to have explained that the phrase '*afaros zahav lo*' refers to the place (*makom*), which is masculine, and therefore they did not comment on this. However, it is still not clear why the *sapir* and all that precedes it were attributed to the land, while here, the gold dust is attributed to the place. Therefore, *Pirkei DeRabbi Eliezer* explains that this refers back to the previous verse..." See there. [This means that one could reject that '*lo*' refers to the word *makom* at the beginning of the verse, rather than to the land or stones (both of which take feminine language), but this is difficult based on the verse's language.] According to what we explained—that '*afaros zahav lo*' refers to the *sapir*—there is no difficulty with the use of the masculine form.

Lazuli.

The famous **Sapphire** of today (**transparent blue Corundum**) was most likely called "**Hyacinthus**" in ancient times.¹⁸⁰

The Identity of the Choshen Stones: A Reevaluation

In several places in **Chazal**, it is explicitly stated that **Sapir** is "**Sapphirinon**", as found in **Pesikta (Piska 'Aniyah So'arah')**, where it says:

*"Sapir – Sapphirinon."*¹⁸¹

The **Sapphire** is described as **blue**, as stated in the **Bavli (Chullin 89a)** and similarly in the **Yerushalmi (Berachos 1:2)**:

*"Techeiles resembles the sea, the sea resembles the sky, and the sky resembles the Sapir stone."*¹⁸²

Similarly, **Bamidbar Rabbah** states that **Sapir** is "**black resembling blue**," meaning a **deep, dark blue**.

The Question on Rav Saadia Gaon (Rasag)

¹⁸⁰ Later on, this name began to be used for red garnet, see note 149.

¹⁸¹ Similarly, *Midrash Tanchuma* (Eikev) states: "*Me'ulefes sapirim*—which were of *sanpirinon*"; *Mishnas Rabbi Eliezer* (chapter 14) says: "Because the *techeiles* resembles *sapir*, and the staff of Hashem was of *sanpirinon*."

¹⁸² Here's the translation with a yeshivish, literal style:

A striking parallel to this Midrash (lehavdil) is found in the words of Epiphanius (*see above, note 49*), pg. 133, regarding the connection of the *sapir* stone to the tribe of Dan, where he writes: "And the stone called *sappheiros* resembles *porphyra*" (*techeiles* in Greek, see my article *The Mitzvah of Techeiles in Our Times*, Jerusalem, 2016, pg. 12), and he elaborated on why *sapir*—a stone resembling *porphyra*—was specifically given to the tribe of Dan.

These sources strongly **contradict** Rasag's translation, in which he identifies **Sapir** as a **crystal-like or transparent stone**.¹⁸³

In European languages, the term **"Sapphire"** included **Lapis Lazuli** until later periods, making it difficult to determine whether early **commentators who translated "Sapir" without modification ("Saphir" or "Shafir")**¹⁸⁴ referred to **blue Corundum** (modern Sapphire) or **Lapis Lazuli**.

The Strength of Sapir in Midrash

¹⁸³ The Ibn Ezra (Shemos 24:10) explained Rav Saadiah Gaon's (*Rasag's*) position: "The Gaon said that *sapir* is white, and his proof is 'livnas hasapir' (*whiteness of the sapphire*)," but he later rejected it: "And the correct explanation is that *livnas* is from the root of *levana* (*whiteness*)." [Similarly, in his shorter commentary: "And the Gaon said that *sapir* is white, and his proof is 'livnas hasapir'. But he said nothing, for *livnas* is not from the root of *lavan* (*white*), rather from *kach lecha livena* (*take for yourself a brick*)."] It appears that this translation of Rasag influenced the Rambam, who wrote (*Hilchos Yesodei HaTorah* 3:1–3): "For the celestial spheres are pure and clear like glass and *sapir*... and they have neither red, black, nor any other color," and it seems that he held that *sapir* is transparent without any color, like Rasag's view.

In the *Zohar*, *Raaya Mehemna* (*Pinchas* 237a), it also explains *livnas* as related to whiteness but arrives at a different conclusion: "*And beneath His feet was like the work of livnas hasapir, 'livnas'—the whiteness of sapir, which includes two colors: mercy and judgment, white and black—black like techeiles...*". Meaning, that there are two colors within the *sapir* itself. Indeed, in *lapis* (*lapis lazuli*), a white hue is sometimes found (caused by calcite or quartz crystals within the stone), besides the gold flecks that are almost always present in it.

In the book *Minerallogia Polyglotta* (*Ch. Keferstein, Halle 1849*), which lists mineral names in many languages, including Greek, Latin, Egyptian, and Chaldean, it states that among the Arabic names for *lapis* is "*maha*." If so, it is possible that Rasag was not disagreeing with the *Targum Sheri*, and his words align with Chazal, who say that *techeiles* resembles *sapir*. However, an examination of *Muhammad ibn Ahmad al-Biruni's Kitab al-Jamahir* (*The Book Most Comprehensive in Knowledge on Precious Stones*, Islamabad 1989), written at the end of the 10th century CE, in Rasag's time, regarding the Choshen stones, proves that in Rasag's time, the name "*maha*" referred exclusively to something transparent (such as quartz). For example, Al-Biruni writes there that "*maha*" is named after its clarity, derived from "*ma*" in Arabic, meaning water. [Nevertheless, it is possible that in certain periods, *lapis* was called "*maha*" due to its resemblance to still waters, and this can be inferred from the fact that according to Al-Biruni, "*maha*" means *bloor* (crystal), whereas Rasag lists them as separate stones—"bloor" as the translation of *shoham* and "*maha*" as the translation of *sapir*.]

¹⁸⁴ Like the *Chizkuni*, *Rabbeinu Bachya*, and others.

Various **Midrashim**¹⁸⁵ cite a statement from **Rabbi Pinchas**¹⁸⁶ describing the **hardness of Sapir**¹⁸⁷:

"When struck, it does not break."

This property **matches blue Corundum (modern Sapphire)**, which is the **second hardest** gemstone. However, **Lapis Lazuli** is much **softer**, making it a weaker candidate. However, as stated, **blue Corundum was not called "Sapphirus" in Chazal's time**, and was likely known as **"Hyacinthus"**.¹⁸⁸

Thus, it appears that **Rabbi Pinchas held that Sapir is not "Sapphirus" but rather the stone called "Adamas" in ancient sources**. **Pliny**¹⁸⁹ describes **Adamas** in a manner almost identical to the Midrash¹⁹⁰:

"These stones are tested on an anvil. They repel hammer blows so strongly that the iron rebounds, and the anvil itself splits."

This matches the **Midrashic account**:

"Rabbi Pinchas said: There was once a man who went to sell Sapir in Rome. The buyer said: I will purchase it on condition that I can test it. He placed it on an anvil and began striking it with a hammer. The anvil split, the hammer broke, but the Sapir remained intact."

The Identification of Adamas

"Adamas" was a **general term** for extremely hard stones, including what we now call **Diamond**¹⁹¹ as well as **transparent Corundum** (but not the blue variety).

¹⁸⁵ *Shir HaShirim Rabbah* (Parsha 5) on the verse "Me'ulefes sapirim"; *Eicha Rabbah* (Parsha 4) on "Sapir gazartem"; *Midrash Tehillim* (Buber) on Chapter 87; *Pesikta Rabbasi*, Piska 32; *Pesikta d'Rav Kahana*, Piska 18 (both on the verse "V'yisadtich b'sapirim" in the *haftarah* "Aniyah so'ara"); and this *Pesikta* is quoted in *Yalkut Shimoni* on Yeshayahu 478.

Rabbeinu Tam quoted this Midrash in several places in Shas (*Shabbos 88b s.v. Mah Patish*; *Sukkah 50a s.v. Im Barzel*; *Kiddushin 30b s.v. Im Barzel*; *Sanhedrin 34a s.v. Mah Patish*) with slight variations from the Midrashic versions.

¹⁸⁶ It appears that this was a fifth-generation Amora of Eretz Yisrael. In one Midrash (*Shir HaShirim Rabbah*), his name was mistakenly replaced with his colleague, R' Yudan (who introduced the teaching in several sources: "R' Yudan said: Every decree that was in Yerushalayim was as hard as *sapir*. And if you say that *sapir* is soft, R' Pinchas said: There was an incident with someone...").

¹⁸⁷ In the earlier Midrashim among these (*Midrash Rabba* and *Midrash Tehillim*), the term *sapir* is used, whereas in the *Pesikta*, the term *sapirinon* appears, and this version of the Midrash was also cited in *Tosafos*. However, this version is difficult, since the known *sapirinon* (*lapis lazuli*) is certainly not something very hard.

¹⁸⁸ The *hyacinthus* is described by Solinus as containing dark clouds that obstruct its transparency and as being so hard that it is impossible to engrave on it except with the help of the *adamas* stone—characteristics that align with blue corundum (*sapphire*). See King, *Precious Stones* (see above, note 70), pgs. 242–250, where he elaborates in proving that the *hyacinthus* refers to blue corundum.

¹⁸⁹ *Pliny, Book XV*.

¹⁹⁰ A free translation by the author of the article from the English translation of Pliny referenced above (note 70).

¹⁹¹ Regarding the identification of *adamas*, see: King, *Precious Stones*, pg. 39.

This could explain **Rasag's** view (and those who followed him), who seemingly understood **Sapir as a transparent stone**. However, as noted earlier, this view **contradicts the Talmud and many Midrashim**, which describe **Sapir as blue**, resembling **the sky and techeiles**, and explicitly refer to it as "**Sapphirinon**" in Greek.¹⁹²

laspis (ἰάσπιδις or ἰάσπιδιν) – Yahalom (יהלום)¹⁹³

¹⁹² There may be room to reconcile the different views of Chazal regarding *sapir*, as Chazal seem to have used the term *sapir* in Lashon HaKodesh to refer to several dark blue stones, including *sappheiros/lapis lazuli* and blue corundum (*sapphire*).

¹⁹³ This identification with *Isphis*, which resembles the pronunciation of *Yashfeh* (*jasper*), led some scholars to suggest that in the Tanach manuscript that was before the Septuagint translators, *Yashfeh* was the sixth stone, and *Yahalom* was the last stone. They supported this from Yechezkel (28:13), where *Yashfeh* is listed as the sixth stone. However, it should be noted that the other Greek translators in the Hexapla (*Symmachus*, *Aquila*, and *Theodotion*) retained the same rendering, even though they generally attempted to improve the Septuagint's text and align it more with the Masoretic version.

Another indication that *Isphis* corresponds to *Yahalom* rather than *Yashfeh* comes from the Septuagint's translation of Yeshayahu (54:11–12): "Behold, I will lay your foundations with *Pukh*... I will set your foundation with *Sapirim*... and I will make your borders with *Kadkod*..." *Kadkod*, which is rendered as *Yahalom* in Targum Yonasan on the Choshen stones, was translated as *Isphis* in the Septuagint—just as it translated *Yahalom* elsewhere. The order of stones in this verse (*Pukh*, *Sapir*, *Kadkod*) also reinforces the identification of *Yahalom* with *Kadkod*, and therefore with *Isphis*.

In the Targum Yerushalmi, *Nofech* is translated as *Kadkadina*, but Radak already pointed out (*Sefer HaShorashim*, entry *Kadkod*) that this is untenable, since *Kadkod* is listed separately from *Nofech* (Yechezkel 27:16, and likewise here, *Pukh* appears together with *Kadkod*). Therefore, it is more reasonable to suggest that there is a scribal error in the Targum Yerushalmi, and the order there should be rearranged. See further discussion in Appendix C regarding the order of stones in the Targum Yerushalmi.

The fact that *Yashfeh* corresponds to *Onychion* rather than *Isphis* [despite the strong similarity between the names *Yashfeh* and *Isphis*] is not problematic, since some types of *Onychion* were classified as types of *Jasper* according to Pliny. If so, it is reasonable that in ancient times, this stone was called *Isphis*, as it corresponds to *Yashfeh* in biblical Hebrew, and only here is this type of *Isphis* called *Onychion* to specify which variety of *Jasper* it is. [In any case, based on this, we can determine that *Yashfeh* should not be identified with *Beryllion*, but rather with an *Onychion* that has some connection to *Isphis*. This stands in contrast to the Vulgate and some manuscripts of the Septuagint (as well as some biblical commentators), which swapped *Shoham* and *Yashfeh*, leading to *Onychion* being the translation of *Shoham* and *Isphis* being the translation of *Yashfeh*.]

Nevertheless, it seems that some commentators (including Rabbeinu Bachya and the Chizkuni, see Appendix A) assumed—or received through tradition—that there was a textual swap in the Septuagint's translation, rendering *Yahalom* as *Beryllion* (or another similar stone), while *Yashfeh* was rendered as *Isphis*. This may have influenced the Midrash *Bamidbar Rabbah*, which describes *Yahalom* as white—more consistent with *Beryl* or *Onyx* than *Isphis*. It is also likely that the Peshitta's translation of *Yahalom* as *Nekaata* refers to *Onychion*, and that it translated *Yahalom* this way due to this exchange in the Septuagint between *Yahalom* and *Yashfeh*. Consequently, the Peshitta translated *Yashfeh* as *Yashfeh* [just as in *Evangelion*, the Peshitta translates the Greek *Isphis* as *Yashfeh*]. However, it should be noted that in the *Syro-Hexapla* of Shemos and Yechezkel, *Isphis* was retained, as well as in the *Syro-Hexapla* of Yeshayahu (54:12).

The **iaspis** known today as **Jasper**¹⁹⁴ is an **opaque quartz** mineral that appears in various colors, making it difficult to determine which color was in the **Choshen**.

This stone was used as a **gemstone before Egypt's First Dynasty** and is found in **eastern Egypt**.¹⁹⁵

According to **Pliny** and other sources¹⁹⁶, the **green variety** was the most common in **Chazal's time**, but there was no strict emphasis on a specific shade, as **iaspis** was always known in multiple colors.

Bamidbar Rabbah states that **Yahalom is white**¹⁹⁷, which is one of the colors of **iaspis**.¹⁹⁸

Targum Yonasan¹⁹⁹ translates **Yahalom** as "**Kadkudin**," and the word "**Kadkod**" is translated by:

- The **Septuagint**²⁰⁰,
- **Aquila**²⁰¹, and
- The **Peshitta**²⁰²

¹⁹⁴ King, *Precious Stones* (see above, note 70), pg. 137; Harrell (see above, note 118), pgs. 156–151.

¹⁹⁵ Luks (earlier, note 108), pages 454–455

¹⁹⁶ See King, *ibid.*, who proved this from many sources, and likewise the *Ral*, *ibid.* Theophrastus counts fourteen (XXXVII) formed from the 'iaspis,' and once a stone was found that was half **iaspis** and half **smaragdus**. Pliny lists types of **iaspis**, but first he prefaces that the **iaspis** is primarily a green stone, similar to the **smaragdus**, but when he ranks them according to importance and value, it only takes third place, after the purple and pink types. And so writes

Epiphanius (page 113), that its appearance is green and its shade is like the **smaragdus**. See regarding the shade of the **iaspis** in all the noted scholars' books

earlier (note 70), and especially Moor, **Ancient Mineralogy** (earlier, note 70), page 216.

¹⁹⁷ There it is written only that the flag of Zevulun was white, and based on what was written regarding the resemblance of **barekes** and the flag of Levi (Appendix E and note 147), it is possible that the **yahalom** was transparent. However, in flags made of fabric, a transparent stone can only be represented with a white flag.

¹⁹⁸ See further in Appendix E regarding Midrash Bamidbar Rabbah.

¹⁹⁹ And so it seems that this was the original version in Targum Yerushalmi, see Appendix G.

²⁰⁰ Yeshaya 54:12.

²⁰¹ Yechezkel 27:16, see Field, **Hexapla** (earlier, note 25), Vol. 2, page 842, note 36. There, in the Septuagint, instead of translating the word **kadkod** as it did in Sefer Yeshaya, it left it in Hebrew – **karkar** (with a **reish** instead of a **dalet**), and in some manuscripts, it is noted in the margin that Aquila translated it as **iaspis**.

It is very difficult to assume that Targum Yerushalmi and Yonasan translated **yahalom** as **kadkodin** based on a combination of the Septuagint (which translated **yahalom** as **iaspis**) and the Septuagint and Aquila for **kadkod** (which is also **iaspis**, as mentioned above); and it is even harder to accept that Aquila and the Septuagint translated **yahalom** based on Targum Yonasan regarding the stones of the Choshen.

This seemingly proves that there were independent traditions identifying the **yahalom** as **iaspis/kadkod(in)**.

²⁰² Yeshaya 54:12.

with the same term that the **Septuagint** translates **Yahalom**—**laspis**.

It is possible that **laspis** was called this name because **Pliny**²⁰³ states that one of its varieties comes from **Chalcedon**.

Ligurion (Λιγύριον) – Leshem (לשם)

From **Theophrastus**, the first to mention this stone²⁰⁴ **and the only one who describes it from personal knowledge** (whereas later writers merely quote him),²⁰⁵ it is clear that this name is synonymous with "**Amber**" in **modern Hebrew**²⁰⁶ or refers to one of its types. This is also evident from descriptions given by other **Greek authors**²⁰⁷, who primarily copy Theophrastus, aside from a few who elaborate slightly.

²⁰³ Chapter XXXVII.

²⁰⁴ Page 51 in the 1956 edition. In Theophrastus, the name of the stone is **lingourion** (as in the Septuagint, in addition, XXVIII, section N), but after him (from Pliny onward), the name is primarily **lincurium** or **lincurion**.

²⁰⁵ See this discussed at length (note 206 is primarily based on what is brought there): S. Walton, "**Theophrastus on Lyngurium**," *Annals of Science*, 58 (2001), pp. 357-379.

²⁰⁶ There is no place here to elaborate on this identification, but we will note that according to all the ancient authors (Demosratus and others) whom Pliny cited on this matter, as well as from the words of Strabo (37, 34) and Dioscorides (*De Materia Medica*, Book 2, 100), it is evident that the name "**Lyncurion**" is synonymous with **amber**—perhaps referring only to a specific type of amber with a special hue or a particular level of clarity. Even Pliny himself simply mentions that it is amber.

Apparently, once the meaning of this name was forgotten and people began using only other names for amber, such as "**Electrum**" or "**Succinum**," they started to assume that **Lyncurion** was a different stone. However, nowhere do we find anyone who actually saw the **Lyngurium** and wrote that it was different from **Electrum**; Pliny even explicitly writes that he does not believe that anyone in his time had seen a precious stone by this name.

Epiphanius even suggested (p. 116) that the "**Lyncurion**" is the "**Hyacinthus**" because he was unfamiliar with the **Lyncurion**; following him, Jerome proposed the same in a letter (LXIV), adding that he had never seen the **Lyncurion** mentioned in any books on gemstones. It is likely that Jerome was relying on Epiphanius for this idea, since at the end of his letter, he references Epiphanius' work and praises it. However, a difference between them is apparent—Epiphanius was familiar with the **Lyncurion** from books on gemstones, whereas Jerome states that he had never even seen it written about. In one of the **Lapidaries** (books on gemstones), when listing the stones of the **Choshen**, "**Hyacinthon**" appears in place of "**Lyncurion**."

This conclusion, that **Lyncurion/Lyncurium** is amber, is accepted by almost all scholars, and many have proven it in their notes on **Theophrastus** (1956 edition, note 26). See also, for example:

- Moor, *Ancient Mineralogy* (earlier, note 70), pp. 156-157, 145
- W. Goodchild, *Precious Stones*, New York 1908, p. 288
- G. F. Kunz, *Curious Lore of Precious Stones*, New York 1913, pp. 56, 295
- M. Manutchehr-Danai, *Dictionary of Gems and Gemology*, Regensburg 2005, entry "Lyncurion," p. 478.

²⁰⁷ See the previous note.

It is possible that the name "**Kanchirion**",²⁰⁸ found in **Targum Onkelos** and **Targum Yonasan**, and similarly in the **Peshitta** as "**Kanchinon**"²⁰⁹, is a corruption of the more common Greek name for this stone—"**Lyncurium**". Alternatively, "**Lyncurium**" may itself be a corruption of this **Aramaic name**²¹⁰.

It is also possible that the name given by the **Targum Yerushalmi**, "**Zuzin**", is a corruption of another **Greek name** for this stone—"**Succinum**" or "**Sucinon**"²¹¹.

²⁰⁸ "**Kancharinon**" in Yonasan, "**Kanchnon**" or "**Kanchinon**" in the Peshitta.

Some have written (Walton, in the aforementioned article cited in note 205) that this name derives from "**Kan**" and "**Chinon**," which together mean "**red amber**." However, I have not found any other support for this (as this is the supposed meaning of these words), and even the author himself, in correspondence with me, was unable to provide a source for this.

²⁰⁹ In the **Syriac Lexicon** of Bar-Bahlul (*Lexicon Syriacum Auctore Bar Bahlule*, from the 10th century, under the entries **Kanchnon** and **Charu'a**), it is written that the color of **Kanchnon** resembles gold—a description very similar to that of amber.

See: **Hassano Bar Bahlule, Paris 1901**.

²¹⁰ That is, the **Lamed** (ל) was switched with a **Kuf** (ק) due to the similarity in the shapes of these letters.

²¹¹ I received this hypothesis from **Prof. Z. Amar**, from his forthcoming book on gemstones in Judaism. However, one could point out—similar to the case of "**Caesar**" (where **Kuf** (ק) replaces the Latin **C**) and "**Oceanus**"—that when transliterating Latin names into **Lashon HaKodesh**, a **Kuf** (ק) is generally used in place of the Latin **C**.

(See also *Emes L'Yaakov*, Rabbi Yaakov Kamenetsky on Bereishis 6:14.)

It may be corrected differently—that the **Targum Yerushalmi** for **Leshem** should be "**Bedolcha**" (and not the translation of **Shoham**). If **Bedolach** refers to **Bdelion**, which is formed from tree resin, then this translation would align with its identification as **amber**, since even in ancient times, it was assumed to be derived from tree resin.

[Epiphanius (p. 116) quotes **Aquila**, stating that **Bedolach** is **Bdelium**. However, see *Bereishis Rabbah* 16: "**Rabbi Ivo said: You assume that Bedolach is like the perfume-makers' bdellium? Let its fellow testify about it—just as the Shoham is a precious stone, so too is this a precious stone.**"]

The term **"Chashmal"** in **Yechezkel** is translated by the **Septuagint** as **"Elektron"**²¹², another Greek term for **Amber**. If so, it is possible that **"Leshem"** is related to **"Chashmal"**²¹³. In **Akkadian**, there is a similar word **"Eshmaru"**, which is also translated as **Amber**²¹⁴.

This identification aligns with **Bamidbar Rabbah** regarding the **flags of the tribes**, where it states that **Dan's flag**, which corresponds to **Leshem** on the **Choshen**, **"resembles Asfir"**²¹⁵, meaning **"Kurkuma"** in Arabic, which is an accurate description of **Amber**.

Achatish (Ἀχάτις) – Shevo (שב)ו

²¹² **Yechezkel 1:4, 1:27.**

It is worth noting what **Rabbi Elazar of Worms** brought in *Perush HaMerkavah*, Paris manuscript, **Sifrei HaLekutim 850** (cited by **G. Scholem**, *Major Trends in Jewish Mysticism*, Tel Aviv 2016, Third Lecture, Section 7, p. 119):

In the name of his teacher, **Rabbi Yehuda HaChasid**, he writes:

"So my teacher told me that once he was standing in the synagogue, and there was a flask filled with oil and water hanging in front of them. The sun was shining on that flask, and from it emanated an unparalleled radiance. And his father said to him: 'My son, pay attention to this radiance, for thus is the nature of the brilliance of the Chashmal.'"

Anyone familiar with **amber** will recognize that this is an exact description of it. Its name derives from the Greek word **"Electrum"**, from which the word **"electricity"** originates. (One could discuss whether this knowledge was transmitted through tradition.)

The term arose because **amber was the first material observed to generate static electricity**, attracting straw and small particles when rubbed. Based on this, **Y.L. Gordon** coined the modern Hebrew word **"Chashmal"** (*electricity*).

²¹³ The name derives from its resemblance to the color of the sun, which in Greek is called **"Elektron"**—meaning **"the awakener."** This name was also given to **gold mixed with silver** for the same reason.

²¹⁴ See:

Chicago Assyrian Dictionary, Vol. 11, entry **Nisiqu**.

[It is possible that this translation in the dictionary is based on the identification of **Leshem** with **amber**, and if so, it does not serve as proof.]

²¹⁵ In the printed editions, it says **"similar to sapphire"**, which does not align with any of the other identifications and has caused confusion among many scholars studying the **Avnei HaChoshen**. However, in all the manuscripts, it is written **"similar to Asfir"** or **"similar to Atsfir"**, which is an Arabic word for **"kurkum"** (saffron), as noted earlier (based on **Meiri to Chullin 54a**; **Kafor VaFerach, Chapter 48**).

This word does not appear anywhere in **Chazal**, and it first appears in **the Rishonim**, providing additional evidence that the list of flag colors is a later addition.

It is also worth noting that in the printed editions of **Rabbeinu Bechayei**, this error appears, but in the manuscripts, it says that **Dan's banner was black** (though it is unclear where he derived this from).

- **Identification:**

This stone is still called **Agate** today, a variety of **quartz** that is **not completely opaque but not fully transparent** and has **banded patterns**.

Its typical color ranges from **gray to white**, matching the description in **Bamidbar Rabbah**:

*"Not black and not white, but mixed."*²¹⁶

²¹⁶ From **Targum Onkelos** on *Shevo*—"Tarkiya"—one might have thought that *Shevo* refers to "**Anthrakion**," which Pliny mentions as a type of **Anthrax (Garnet)**. However, this assumption is refuted by the fact that **Garnet is Barekes**, as we have already proven.

On the other hand, **Theophrastus** writes that there is a type of **Anthrakion** that has **purple and white stripes**, which seemingly classifies it as a variety of **Agate** (as per the commentary on Theophrastus, 1956 edition, end of note 33, p. 231). Pliny, too, cites Theophrastus, and elsewhere, he mentions a type of **Anthrakitis** that bears some resemblance to **Agate**.

If so, there may be no contradiction between the identifications given by **Targum Onkelos** and the **Septuagint** for *Shevo*. It is also possible that **Agate** was called "**Tarkiya**" after the land "**Trachinia**" (an ancient name for a region in Greece), which Pliny records as the origin of **Achates (Agate)**. Alternatively, one could suggest that "**Tarkiya**" refers to a variety of **Achates**, except that when a stone known as "**Ostrakias**" (Pliny, LXV) is polished, it does not acquire the same glossy appearance as **Achates**.

[We must keep in mind that none of these suggestions may be correct, but at the same time, we also cannot say with certainty that "**Tarkiya**" refers to "**Anthrakion**," as long as we have alternative explanations for the term.]

In **Aruch**, under the entry "**Bales**," a different version of **Targum Onkelos** is cited, where instead of "**Tarkiya**," the text reads "**Thrakia**" (as also found in **Paris MS 78** of Targum Onkelos). The **Aruch** adds that this corresponds to the Midrash (*Bereishis Rabbah* 12):

"They appear like Thrakia."

From the wording in **Bereishis Rabbah** and comparison to **Midrash Mishnas R' Eliezer (Chapter 11)**, it seems that "**Thrakia**" refers to something that, when polished, is **shiny like glass**—a characteristic that indeed exists in **Agate** (as well as in many other stones). However, there is no indication in these Midrashim that "**Thrakia**" specifically refers to "**Anthrakion**."

[This Midrash also appears in **Talmud Yerushalmi (Berachos 1:1)**, though there it only states: "**They appear as they did at the time of their casting**." However, in **Yalkut Shimoni (Bereishis 19)**, the two versions are combined: "**They appear as at the time of their casting, like Thrakia**."]

Based on this, it is possible that the **Targum** here refers to the "**Tarkiya**" mentioned in these Midrashim, though the exact meaning of the term remains unclear. However, there is no conclusive proof from the similarity of names that it necessarily refers to **Anthrakion**.

There is no doubt, however, that "**Tarkiya**" does **not** refer to the stone known today as **Turquoise** (*Turquoise*), which in the time of **Chazal** was called "**Klāinūs**." The name "**Turquoise**" is of later origin, and its usage became widespread closer to the time of **Rabbeinu Bechayei**.

[In truth, one might ask why **Turquoise** (which was highly valued by the Egyptians) was absent from the **Choshen**. Perhaps it was disqualified due to its association with Egyptian **idolatrous worship**.]

- **Historical Use:**
Agate was used as a **gemstone in very ancient periods**, with jewelry made from it found in **Assyria and Egypt** dating back **before Yetziyas Mitzrayim**.²¹⁷
- **Textual Variations:**
This identification appears in **Shemos Rabbah**, though with **different manuscript variations**:
"Aba Tov," "Aba Tiv," "Aba Tis."²¹⁸
However, it is clear that the original term was "**Achatis**," as it appears in the **Septuagint**.
In one late printed edition (**Vienna, 1863**), it appears as "**Achati**," which is close to the original.
- **Rashi's Manuscript Evidence:**
Rashi's Munich Manuscript refers to it as "**Yayit**," which corresponds to **Agate**, dropping the "**G**" (as it is pronounced in Hungarian).²¹⁹

Amethystos (Ἀμέθυστος) – Achlama (אחלמה)

- **Identification:**
This stone is still called **Amethyst** today, a variety of **purple transparent quartz**.
This identification fits with **Midrash Rabbah**, which describes it as:
*"Resembling clear wine."*²²⁰
- **Historical Use:**
Amethyst was a **widely used** gemstone in the **ancient world** and was quarried in **Egypt even before Yetziyas Mitzrayim**.²²¹
- **Manuscript Evidence:**
The name "**Himisyon**" in **Shemos Rabbah** appears to be a corruption of "**Amethyst**."
In **Rashi's Munich Manuscript**, **Achlama** is referred to as "**Ashmatit**", another corruption of "**Amethyst**."

²¹⁷ See **Luks**, p. 443, earlier note 108.

²¹⁸ This phenomenon recurs and further demonstrates the **inaccuracy** of this Midrash in its current form as it has reached us.

²¹⁹ See *Mineralogia Polyglotta*, p. 40.

²²⁰ We also find in **Theophrastus** that the only thing he writes about **Amethyst** is that its color resembles **wine**.

²²¹ See **Luks** (p. 445, see note 108), where he writes that already in the **First Dynasty of the Egyptian kings**, **Amethyst** was quarried in Egypt.

- **Targum Onkelos:**
Onkelos translates **Achlama** as "**Ayin Agla**" (עין עגלא). This may also indicate **Amethyst**, as **Pliny** writes that the stone was called "**Aphrodites Blepharon**" (Eye of Aphrodite), a **goddess sometimes worshiped in the form of a calf**.²²²
- **Syriac Dictionary Evidence:**
In **Bar Bahlul's Syriac dictionary**, "Ayin Agla" is described as:
*"Ayin Agla... and in the Torah²²³: Kanchinon, Karkadna, and Ayin Agla. Its color is like wine and dragon's blood."*²²⁴
- **Rejecting Alternative Interpretations:**
The term "**Ayin Agla**" does **not** refer to a stone with **concentric circles like an eye** (e.g., **Sardonyx**)²²⁵, since a **calf's eye does not have such a pattern**, but rather a **uniform color** that varies by species.²²⁶
- **Geographical Connection:**
Pliny writes that **one of the main sources of Amethyst was Armenia** and that it was the **only gemstone found there**.²²⁷ In Assyrian records, a **region in Armenia** was known as "**Achlama**".²²⁸ This suggests that the Hebrew name "**Achlama**" may have originated from its **place of origin**.²²⁹

Chrysolithos (Χρυσόλιθος) – Tarshish (תרשיש)

²²² See **I. Velikovsky**, *Worlds in Collision*, Israel 2002, regarding the connection between the **worship of Aphrodite** and the **worship of the Golden Calf**.

[Although many aspects of the theories presented in the book can be **seriously questioned**, his discussion on the connection between **calf worship** among various nations and the **cult of Venus/Aphrodite** appears reasonable.]

²²³ That is to say, in the **Torah**—in the **Peshitta translation**—this word appears in the translation of the **third row of the Choshen**.

²²⁴ That is, **Bar-Bahlul** explains that the color of "**Ein Agla**" is like **wine and argaman (purple)**. There are other interpretations for this stone, but from the description he provides of "**Ein Agla**," it is clear that it is possible that "**Ein Agla**" refers to **Amethyst**.

²²⁵ A stone of this shape is indeed called "**Ain-Tura**" (*Eye of the Ox*) in Aramaic, but there is no proof that "**Ain-Tura**" is identical to "**Ain-Agla**" (*Eye of the Calf*).

²²⁶ In the calves I examined, I observed that sometimes the **eye of a calf** is a **dark purple** color (and I have also heard this from various sources).

²²⁷ Chapter XL

²²⁸ See: J. Black, A. George, N. Postgate, *A Concise Dictionary of Akkadian* (Second Edition), Wiesbaden 2000, entry Ahlamu, pg. 8

²²⁹ See: F. Delitzsch, *The Hebrew Language in the Light of Assyrian Research*, London 1883, chap. VI, pg. 36, note 1.

According to Pliny's description, scholars agree that this is not the same as the modern **Peridot**, which is today called **Chrysolite**²³⁰. Instead, the **Chrysolithos** of Pliny is identified with **Citrine**²³¹, a **transparent yellow quartz**²³².

It is likely that this term included other **transparent yellow stones**, such as **yellow Topaz**, but the only one used as a gemstone at the time of **Yetzias Mitzrayim** was **transparent quartz**.

Based on this, we would have to say that the name "**Tarshish**" refers to its **origin in Tarshish**²³³ rather than its **similarity to the sea**, which is called "**Tarshish**" in several places in **Tanach**²³⁴.

In the **Aramaic Targumim**, the stone is translated as "**Chrom Yama**"²³⁵ or "**Chrom Yama Rabba**." The word "**Chrom**" (χρῶμα) is generally understood to mean **color**²³⁶, so the

²³⁰ Which in the past was called *****Topazius***** and it is the ****Pitdah**** (see above).

²³¹ For example, see:

- **Moor, *Ancient Mineralogy*** (earlier, note 70), p. 225.
- **Harl** (earlier, note 118), pp. 155-156.

²³² For example, **Pliny** (*Chapter XLIII*) writes that a **Chrysolithos** was found weighing **twelve "Poundo" (Pound)**, which primarily corresponds to **yellow quartz**.

²³³ For a detailed discussion on the **location of Tarshish** and its connection to the **Tarshish stone** in the **Choshen**, see:

- **Y. Elitzur, *Makom BaParasha*, Tel Aviv 2014, *Parashas Pekudei*** (pp. 165-169).

²³⁴ For example, see:

- **Yeshaya 23:1**; *ibid.* **23:14**
- **Yechezkel 27:12**; *ibid.* **27:25**
- **Yonah 1:3** and its **Targum** in these places.

Additionally, see:

- **Yerushalmi Shekalim 6:1** and **Sotah 8:3**: "*Filled with Tarshish, like the great sea.*"
- **Midrash Mishnas R' Eliezer, Chapter 4**: "*And from where do we know that the sea is called Tarshish? As it says: 'And upon all the ships of Tarshish.'*"

However, **Rashi** explains in multiple places that certain **seas** were called "**Tarshish**." See his commentary on:

- **Yeshaya 2:16, 23:10, Yonah 1:3, Daniel 10:6** (where he writes that the *Sea of Tarshish* refers to the **African Sea**, meaning modern-day **Tunisia**).

See also: **Maharsha, Chidushei Aggados, Chullin 91b**.

²³⁵ This seemingly parallels **Targum Yonasan** on the **Nevi'im**, which translates "**Tarshish**" as simply "**the sea**." See the **previous note**.

²³⁶ See **Rashi, Chullin 91b**, s.v. "**Guviso K'Tarshish**," where it appears that he also interpreted it this way.

translation would mean **"a stone of sea color"**²³⁷. Based on this, Tarshish would be a **blue or green stone**²³⁸.

We do not find the word **"Krum"** used to mean **"color"** in other places (although there may be a hint to such an understanding in **Berachos 6b**: *"What is Krum?... There is a bird in the cities of the sea... that changes into many colors."*).

Additionally, in **none** of the many **Aramaic and Greek dictionaries** of the Talmud do we find another instance where **"Krum"** was used to mean **"color."**

It seems that based on **Targum Onkelos** (or possibly based on the **simple meaning** of the name **"Tarshish,"** which means **"sea"**), **Rav Saadia Gaon** translated **"Tarshish"** as **"Azrak"**—meaning **"blue."** In an **anonymous Arabic translation** (MS 64578), I even found the phrase **"Lawn al-Sama"**—meaning **"the color of the sky."**

²³⁷ This **vocalization** is not found in **manuscripts** vocalized with **Babylonian niqqud** and appears in only **one** of the **Tiberian vocalized manuscripts** that I examined (**MS 448**). However, despite the accuracy of the **text**, its **vocalization is inconsistent**, and it is likely that the niqqud does **not** originate from a **Babylonian source**.

²³⁸ Some have suggested that **Targum** refers here to **blue beryl**, which is today called **Aquamarine** (meaning **"water of the sea"**). However, this name is **modern**, and in the time of **Chazal**, blue beryl was simply called **"beryl."**

If indeed **Tarshish** was a **blue stone**, we should follow the translation of **Sumchus** (cited in the margin of the **Syro-Hexapla** on **Yechezkel 1:16, 10:9**, and elsewhere), which renders it as **"Yoknasa"**—that is, **"Hyacinthus"**—a blue **Corundum**, which today is called **Sapphire** in English and other languages.

It is possible that this translation influenced later commentators who also translated **Tarshish** as **"Jacinth,"** such as **Rabbi Moshe Provenzali** and **Rabbi David di-Pomi** (see note 149). Additionally, in the Ashkenazi manuscript **"Ta'amei Avnei HaChoshen"** (Oxford MS **Opp. 647**, dated to the **14th century**), it is written that **Tarshish** is **"Yikant"** (*Jacinth*).

However, since **Aquila** translates **Tarshish** as **Chrysolithos** twice in **Yechezkel** and once in **Daniel**²³⁹, it is preferable to rely on the **clear identification in Aquila's translation** over the **less clear term in the Aramaic Targumim**, which can be interpreted in different ways²⁴⁰.

Further support for this comes from **Targum Yonasan** and **Targum Yerushalmi**, which translate it as "**Chrom Yama Rabba**"²⁴¹, meaning "**the color of the great sea.**" However, the **great sea does not have a specific color**, nor is there a known gemstone by this name.

Isidore of Seville describes **Chrysolithos** as "**like gold, but with a resemblance to the color of the sea**"²⁴², and **Plutarch** similarly compares **bronze to the color of the sea**²⁴³.

²³⁹ See **Field**, *Hexapla* (earlier, note 25), Vol. 2, pp. 928, 792, 770, on **Yechezkel 1:16, 10:9**, and **Daniel 10:6**.

The **Septuagint** version of **Daniel** has almost not survived, preserved only in a few manuscripts, in the **Syro-Hexapla (in Syriac)**, and in some **quotations in Church Fathers' writings**. Instead of the **Septuagint**, the Greek text of **Daniel** generally follows **Theodotion's translation**. When **Theodotion** encountered a word he found difficult to translate, he often left it **untranslated in Hebrew**, as he did with "**Tarshish**" here.

In the **Septuagint**, however, the word is translated as "**like the sea**" (as also explained by **Rashi**, based on the Bavli). In the **Syro-Hexapla** (which, as noted, is based on the **Septuagint**, not **Theodotion**), it reads "**Ikh Dima.**"

In the **margin**, it is written: "**A[qilos] Ikh Dehav Ke'afa**" (*like a golden stone*), which is a translation of the Greek "**Chrysolithos**" (*Chrysolite*).

In **Yechezkel 1:15**, the **Septuagint** leaves "**Tarshish**" untranslated, likely following **Theodotion's** precedent. Similarly, in the **Syro-Hexapla**, it appears as "**Ikh d'Tarshish.**"

In the **margin** (and similarly in the margin on **Yechezkel 10:9**), it reads: "**S[umchus]: Dioknatha**" (*Yoknasa / Hyacinthus*). However, **Field** cites (*Yechezkel*, *ibid.*, note 42) that **two manuscripts** record in the margin that **Aquila translated it as "Chrysolithos."**

²⁴⁰ For several attempts to reconcile "**Krum Yama**" with "**Chrysolithos**," see **R. B. Shmerler**, *Ahavas Yehonasan al HaTargumim* (Bilgoraj, 1932).

Another possibility is that this word is connected to **Akkadian**, where "**Krum**" means "**sea merchandise.**"

R. Berechiah HaNakdan, in *Ko'ach HaAvanim* under the entry "**Tarshish**," writes the following:

"Tarshish: Its appearance is like foam on the surface of the water."

Indeed, this sometimes appears **yellow**, though it is still somewhat distant from the identification.

Another possible suggestion, which I heard from **Rav D. Tal**, is that the **Kaf (כ)** replaced a **Kuf (ק)**, as in "**Krum-Yama**," meaning something like **sand on the seashore**, which is typically **yellow**.

²⁴¹ In the **Targum** on **Esther 8:15**, a stone appears with the name "**Krum Yama Ma'arava**" (*Western Sea Krum*).

²⁴² **Isidore** (earlier, note 66), p. 327, XVI.xv.2.

²⁴³ See **S. Lieberman** (earlier, note 39), p. 45, note 196.

If **Onkelos is Aquila** (as many Jewish scholars held; see **Appendix B**), then **Onkelos' "Chrom Yama" must match Aquila's "Chrysolithos"**²⁴⁴. Even if they were different people, **Aquila's authority is equal to Onkelos'**, since both rely on **Rabbi Yirmiyah, who translated before (or from) Rabbi Eliezer and Rabbi Yehoshua**. (pg. 43 of 68)

Bamidbar Rabbah states that **Tarshish** resembles **"a precious stone that women use for adornment."** Pliny writes that **Amber**²⁴⁵ **was particularly desired by women**²⁴⁶, and he also notes that **one type of Chrysolithos is "Chryselectron," which resembles Amber**.

Rabbenu Bechaye and **Ramban**, when quoting **Bamidbar Rabbah**, replace this description with **"like the light of the sun"** or **"like olive oil,"** both of which indicate **a yellow color**.

This translation as **Chrysolithos** is preserved in **Rashi on Yechezkel (1:16)**, **Rashi's Munich manuscript**, and **Chizkuni**, though with **minor textual corruption**, which led to the mistaken identification as **"Crystal"**²⁴⁷.

Similarly, in the **Peshitta on Yechezkel**, which generally follows the **Septuagint's names**, **"Chrysolithos" was replaced with "Crustallos."** It is also likely that the name **"Kriolika"** found in **Rabbenu Bechaye** is another corruption of **Chrysolithos**²⁴⁸.

Beryllion (Βηρύλλιον) – Shoham (שוהם)²⁴⁹

²⁴⁴ And one should not force an argument and say that in his **Greek translation**, **Aquila** merely copied from the **Septuagint** without understanding the names of the stones in Greek, and that only in his **Aramaic translation** did he translate their names precisely. This is because the meaning of the name **"Chrysolithos"** (*Golden Stone*) is **clear in Greek**, as reflected in its translation in the **Syro-Hexapla**.

²⁴⁵ Chapter XI

²⁴⁶ Pliny mentions **in passing** regarding the **statue of Pompey**, which was made from **pearls (VI)**, stating that **pearls were found only for women**. However, nowhere else does he mention anything like this.

²⁴⁷ See **R. Elazar of Worms, Sodai Razaya**, ed. **R. A. Eisenbach, Jerusalem 2004**, p. 112, where he writes:

"One who places a Tarshish stone in clear water during the summer, in the sunlight, will see that the stone, being pure and white, is not distinguishable in the water. And just as that stone is white and pure, so too are the Ofanim."

This description aligns specifically with **crystal**, which is a **clear and pure stone, transparent like glass**.

²⁴⁸ See **R. Avraham HaRofeh, Shiltei HaGiborim** (Jerusalem 2010 edition, p. 201), where he comments on this name:

*"And I do not know what this **Kreolika** is."*

²⁴⁹ In the **Syro-Hexapla**, the **Shoham** stone in the **Choshen** is translated as **"Anochion"**, whereas in **Yechezkel**, **Shoham** is translated as **"Beryla"**, as it is in the **Septuagint** and the **Aramaic Targumim**. It

The **Greek translation of Shoham** is **Beryllion**, which aligns with the **Aramaic translations**, as they also use the **B-R-L** root²⁵⁰. A similar form appears in the **Samaritan Targum** as "**Bari**."

appears that this was also the reading in **Origen's version of the Septuagint**, from which the **Syro-Hexapla** was copied.

It is unclear how this **swap** occurred between the translation of **Shoham** and the translation of **Yashpeh**, but it seems that the **Vulgate**, which was largely based on the **Septuagint**, was influenced by this switch. The **Vulgate** consistently translates **Shoham** as "**Onyx**", and this swap appears in other late manuscripts of the **Septuagint**.

However, it is clear that this was a **textual confusion**, as **Jerome** (the author of the **Vulgate**) quoted the **Septuagint's** reading in his **commentary on Yeshaya** (see earlier, note 52, p. 637). Yet, in his letter about the **priestly garments**, he translates **Shoham** as **Onyx**.

Similarly, **Josephus** (*Antiquities of the Jews*, see earlier, note 28) writes that **Onyx** was the **second stone in the fourth row**, while the **third stone was "Beryllion"**. However, this carries little weight, as Josephus also **swapped the second and third stones in both the second and third rows**, resulting in "**Sapphiron**" appearing at the **end of the second row**, which is clearly **impossible**.

In *The Jewish War*, **Shoham** is translated as **Beryllos**, as in the **Septuagint**, while **Tarshish** is replaced with the **translation of Yashpeh**. This may be due to confusion caused by reading the **stone names from left to right**, as they appear in Greek, or a similar scribal error.

The **Septuagint's** reading—where **Beryllion** is the translation of **Shoham**—is confirmed by **all early copies of the Septuagint**, including **Old Latin, Coptic, Ethiopian, Armenian**, and more. It is also supported by **Epiphanius**, the **Aramaic Targumim**, and the **Samaritan Targum**, which translates **Shoham** with a term similar to **Beryllion**.

Through the **Vulgate**, this confusion influenced many later commentators. Via **Latin translations into other languages**, as well as dictionaries based on the **Vulgate**, early commentators such as the **Arukh** (entry "**Anakh**": **"Onychna, which is Shoham in the Biblical language"**), **Chizkuni**, **Rabbeinu Bechayei**, and **Rabbi Moshe Provenzali** adopted the interpretation of **Shoham as Onyx**.

It is important to note that **Bamidbar Rabbah** states that **Shoham is "very dark,"** which seemingly fits **only** with its identification as **Onyx** (as **Rabbeinu Bechayei** also writes). However, the following points must be considered:

1. The identification of **Shoham** as **Onyx** is contradicted by **all** the other sources mentioned.
2. The name "**Onyx**" did **not** originally refer to a **black stone** until a **later period**. This suggests that the **list of colors in the Midrash on the flags** is a **later addition** (see more on this in **Appendix E**).

²⁵⁰ In **Targum Yerushalmi**, the **Shevo** stone is translated as "**Beryulin**" (in one manuscript and in printed editions, it appears mistakenly as "**Birzalin**"), while **Shoham** is translated as "**Bedlacha**" (*Bdellium*).

Based on comparison with **Targum Onkelos** and **Targum Yonasan**, it seems that these two stones were **swapped**, and in truth:

- The **translation of Shevo** should be "**Bedlacha**."
- The **translation of Shoham** should be "**Beryulin**."

This must be the case because it is **impossible** for **Shoham** to be **Bdellium**, as the **Pasuk in Bereishis (2:12)** lists them as **separate entities**:

This stone is still known today as **Beryl** and exists in a **range of colors, from transparent to green and blue**, with specific names for different shades.

- **Blue-green Beryl** is called "**Aquamarine**."
- **Dark green Beryl** is called "**Emerald**," which was referred to as "**Smaragdus**" in Greek

²⁵¹

Pliny lists **Beryllus** as the **last of twelve types of Smaragdus**, stating:

"Many consider Beryl to have the same or very similar properties as Smaragdus." ²⁵²

He also writes that the most **valuable Beryl** is "**the pure green of the sea**" (likely **light green**), while **less green ones were of lower quality**, and **yellow ones were worth even less**

²⁵³

Pliny explicitly states that **dark green Beryl (Emerald)** is not called **Beryl** but **Smaragdus**, meaning that the **Beryllion of Shoham** is not dark green but light green or blue-green.

Pliny also says that **Beryl** is similar in shape to **Smaragdus**, but its color is different ^{254 255}.

"There is Bdelium and the Shoham stone."

See a **detailed discussion** on this in **Appendix G**.

²⁵¹ The name "Emerald" comes through the Sefardi version "Esmiralda," which evolved from smaragdus → smaraldos → esmirald → emerald. See Dictionary of Gems and Gemology, entry "emerald, names of", pg. 274.

²⁵² Chapter XX.

²⁵³ It's important to note that Theophrastus—who lived around 300 years before Pliny, and was closer to the time of the Septuagint translation—never mentions a stone called "beryllion" in his *sefer* on stones (even though the *sefer* might not be 100% complete, still you'd expect to hear that name pop up somewhere else). According to the researcher Kunz, he lumps it together under types of smaragdus. It's also possible that the word "beryl" originally comes from Akkadian, where there's a stone called burallu (see CAD vol. 2, entry burallu, pg. 236), and that name only made it to Greek after Theophrastus's time. Most researchers though say the word "beryl" comes from low Latin, where it meant "lens." Based on that, it makes sense why the Septuagint avoided translating as "beryl" unless it absolutely had to (like in the Choshen stones, where it already translated "nofech" as smaragdus), because by the time the Septuagint was written, the term wasn't commonly used yet.

²⁵⁴ Both stones are six-sided prisms, as is described later. From that description, it's clear that "emerald" was understood as the smaragdus itself—not just a sub-category of "beryl"—because no other type of smaragdus has that six-sided prism shape besides emerald.

²⁵⁵ According to modern science, "beryl" is the main mineral, and "emerald" is just the green version of it. But Pliny grouped them based on color, so in his time "beryl" and "emerald" were seen as two types of smaragdus. You can illustrate it like this:

According to Pliny: Smaragdus includes emeralds and beryls of all colors.

According to science today: Emerald is one specific green type of beryl.

Genesis 2:11 states that **Shoham** is found in the land of **Chavilah**, which **Targum Yonasan** and **Josephus** identify as **India** ²⁵⁶. Pliny confirms that **Beryl** is found in India and is rare elsewhere ²⁵⁷.

Light green Beryl is still found in Egypt, in mines that were in use during **Yetziyas Mitzrayim** ²⁵⁸. Other **Beryl types were not found in ancient Egypt** and were likely not used ²⁵⁹.

The **Septuagint** translates **Genesis 2:12** as describing Shoham as **"the green stone"** ^{260 261}. Since the name **"Beryl"** was not widely known, the translators described it based on its color instead ²⁶².

In **Shemos 28:9, 35:27, and Yechezkel 28:13**, Shoham is translated as **Smaragdus**, the general Greek term for **green stones**. In the **Aramaic translations**, it is rendered as **Nofech**, and in the **Septuagint**, it is translated as **Barekes** (see above). This aligns with **Pliny's statement that Beryl is a type of Smaragdus**.

In the **Ephod's shoulder stones**, Shoham was translated as **Smaragdus**, the **more well-known term**. But in the **Choshen**, it was translated as **Beryllion**, which was **less familiar but more precise**, since **"Smaragdus" was already used for Nofech**.

²⁵⁶ A nice description of "beryl" appears in Ko'ach haAvanim by R' Berechiah HaNakdan, under "Beryl": "Beryl. It's a bit whitish, but that white leans toward green, and its appearance is close to sea water. Stonecutters shape it into six corners."

²⁵⁷ According to Dictionary of Gems and Gemology, light green beryl is also found in Saudi Arabia, and is sometimes even called "Arabij" because of its origin. If that's the case, then "shoham" (onyx) might match with those who say "Chavila" is in southern Saudi Arabia.

²⁵⁸ See Lux (note 108), pg. 446.

²⁵⁹ This sentence was copied into Biblical Antiquities by Pseudo-Philo (see around note 57), right at the beginning of the story about Kenaz (chapter XXV, 11), and the wording is exactly the same as the Septuagint (in Latin).

²⁶⁰ See M. Goshen-Gottstein, The Bible in the Palestinian Syriac Version, Jerusalem 1973, where the Septuagint's lithos prasinos is translated as kifah d'karta—"Karti stone"—when the Peshitta translated chatzir in Bamidbar as "parsah." That was copied over in the Syro-Hexapla as karta. [There might be room to say that the Septuagint translators had a different reading—"stone of bdolach and karti"—instead of ve'evenshoham, but prasinos translates "chatzir" (grass), not "garlic" (shum).]

²⁶¹ It doesn't necessarily mean it was a truly green stone. Philo of Alexandria (who only knew the Greek, not the Hebrew original) thought the "karti-like stone" was sapphire, which is blue. And it's well known that in ancient times, green and blue were often considered the same color. For example, Rashi writes (Bamidbar 15:41) that the color of techeiles resembles the darkening sky before night, and also writes (Shemos 25:4, Bamidbar 15:38, etc.) that techeiles is Yarok.

On this whole topic of how ancient people classified colors, see: G. Deutscher, *Through the Language Glass*, New York 2010.

²⁶² Another possible reason for this variation is that according to scholars, Bereishis was translated by a different person than Shemos (see note 5). The Bereishis translator may have chosen a word he felt was clearer rather than using "beryl" (which includes some blue types) or smaragdus (which includes types that aren't beryl), so he just described the stone instead.

"Onyx" (a type of quartz – *onychi* in Greek) — in the Writings (Iyov 28:16²⁶³; Divrei HaYamim I 29:2) **shoham** is translated as **onyx** (**ovuxi**), generally with bands in different shades; and this is **yashfeh**. This [translation] in the Writings is later than the translation of the Torah, and it appears that the translation of **shoham** there is based on an earlier mistake already found in several sources:²⁶⁴ that the translation of **shoham** was swapped with the translation of **yashfeh** [and **shoham** was translated as "onyx" instead of **yashfeh**]. And based on these sources, they translated **shoham** in the Writings as "onyx" instead of **beryl** (*berilion*). And from here it seems that the Biblical Hebrew–Greek dictionary found in the Cairo Genizah was influenced, which translated **shoham**, found there in Iyov, as **inaonychon**.²⁶⁵

The phrase "**Avnei Shoham v'Avnei Miluim**" appears twice in Sefer Shemos (25:7; 35:9), and in both, **σαρδίων** (*sardion*, a red stone; the Septuagint's translation for **odem**) appears. However, in the **Latin copy** of the Septuagint for that same perek,²⁶⁶ instead of **σαρδίων** (*sardion*), it says **βήρυλλος** (*beryllos*), and therefore it is reasonable to assume that there is a mistake here, and that the original text is preserved in the Latin copy.

This mistake is seemingly built upon the earlier error (see also above and in footnote 249), namely, that the translation **ὄνυξ** (*onyx*) was corrupted further into **σαρδόνυξ** (*sardonix*), and from there reduced to just **σαρδίων** (*sardion*).²⁶⁷

Onychion (Ὀνύχιον) – Yashfeh (ישפה)

The meaning of the Greek word "**Onychion**" is **finger nail** ²⁶⁸, referring to a **white, non-transparent stone** resembling a fingernail, usually a variety of **quartz**. In the **Syro-Hexapla on Yechezkel**, it is translated as "**Tafra**" (Aramaic for **fingernail**).

Over time, and already in **Second Temple times**, **Onychion** came to mean a **stone with multiple colors**, and today it refers primarily to **black or dark stones with white bands**, known as **Onyx** ²⁶⁹.

²⁶³ In the Syro-Hexapla manuscript, it notes that this pasuk (and a few before and after it) is missing in the Septuagint, and what appears there is actually from Theodotion's translation.

²⁶⁴ See also note 249.

²⁶⁵ See De Lange, *Greek Jewish Texts from the Cairo Genizah*, Tübingen 1996, p. 83.

²⁶⁶ Same situation probably applies in chapter 35, though nothing survived of the Latin translation there. However, I found in the early Armenian version: "stones of sardion, stones of smaragdos, and stones of fillings," which seems to preserve the original Septuagint reading where shoham was translated as smaragdos, just like in other places. This was also found in chapter 25 in a Coptic Bohairic manuscript (written around 300 years after the Churban): "stones of sardion, stones of smaragdos, and stones of fillings."

²⁶⁷ Same thing happened in Josephus's *Antiquities*, where instead of sardion, he wrote "sard-onyx."

²⁶⁸ See Pliny, chapter XXIV.

²⁶⁹ Theophrastus uses the term "onyx" only for black-and-white stones, but Pliny, quoting Satyrus, says the real onyx comes in many colors.

This identification fits with **Bamidbar Rabbah**, which describes **Yashfeh** as **a stone with many colors**.

Historical Use:

- This stone was **known in Egypt** around the time of **Yetziyas Mitzrayim** ²⁷⁰ but became **much more common** in the **classical period**.

Targum Onkelos:

- Onkelos translates **Yashfeh** as **"Pantheri"** ²⁷¹, which may be a type of **quartz/agate** that **Pliny** ²⁷² calls **"Pontica,"** a stone whose description is very similar to **Onyx**.
- If so, there is **no contradiction** between **Onkelos** and the **Septuagint**.

Possible Etymology:

- Some have suggested that **"Pantheri"** is a **Greek name** for a stone resembling a **panther's** fur pattern, as **"Panther"** means **leopard** in Greek.
- However, **Pliny** refers to such a stone as **"Prasodelius"** ²⁷³, meaning that **"Pantheri"** likely refers to a different kind of stone.

Connection to Other Translations:

- As noted earlier ²⁷⁴, many **commentators** (**Rashi in the Munich manuscript**, **Chizkuni**, **Rabbenu Bechaye**) identified **Yashfeh** as **Jasper**, due to the **similarity in pronunciation**.
- This led to confusion, where they **interchanged the translation of Yahalom and Yashfeh**—resulting in:
 - **Beryl as the translation for Yahalom**, and
 - **Iaspis/Jasper as the translation for Yashfeh**.
- Some even misread the **B for P**, leading to the translation of **Yahalom as "Perla"** (Pearl), and **Yashfeh as "Iaspis/Jasper."** ²⁷⁵

²⁷⁰ According to Lux (see note 108), pg. 443.

²⁷¹ That's how it appears in the accurate manuscripts from Bavel and Teiman. But in most European manuscripts (and all prints except the Savioneta edition), it says fantiri. Targum Yonasan also writes marganis apnaturin.

²⁷² Chapter LXVI; also quoted by Solinus and others.

²⁷³ Similar to how Chazal use the term "bardelas" (leopard).

²⁷⁴ See note 193.

²⁷⁵ It's possible this switch—where "beryllion" became the translation for "diamond"—influenced those who said that the modern Hebrew yahalom (diamond) refers to what's called diamond in modern languages. This includes the Ibn Ezra, Abarbanel, R' Moshe Provenzali, and the Shiltey Giborim. They thought the term beryllion was related to the modern German brilliant, from Greek beryllion. That's also why in any mefarshim that say "diamanti" is the diamond, the word beryllion doesn't show up at all.

Appendix A – The Proposed Identifications:

For the sake of completeness, we have brought here a table with the opinions of the great commentators regarding the stones of the Choshen. One who examines them will see that most are based on the Septuagint, as we noted in the main article and in footnote 37. We did not bother to comment on every point requiring explanation, as the primary study does not focus on the words of the commentators, and much of what they wrote has already been discussed in the body of the article.

Table contents:

Pasuk, Ksav Yad Rashi²⁷⁶, Chizkuni²⁷⁷, Rabeinu BeChayei, Abarbanel, RM Provinciali, Shiltei HaGiborim

²⁷⁶ Rashi MS. For the manuscript and its strange order of stones, see note 36. The list goes:

1. Odem,
2. Pitdah,
3. Yahalom,
4. Nofech,
5. Sapir,
6. Achlamah,
7. Tarshish,
8. Shoham,
9. Yashfeh,
10. Leshem,
11. Shevo,
12. Achlamah,
13. Barekes.

Seems like the reason is he copied it from a table format where the stones were listed in Laaz (foreign language), maybe arranged in rows like on the Choshen. The copyist probably jumped from row to row—especially because he didn't recognize the names. If we assume the third stone in each row was raised slightly (see the diagram), that would explain it better.

²⁷⁷ Chizkuni. The version quoted here is an eclectic text based on the three manuscripts mentioned in note 31.

פסוק	כ"י רש"י ²⁷⁶	חזקוני ²⁷⁷	רבנו בחיי	אברבנאל	ר"מ פרוכניצאלי	שלטי הגיבורים
אודם	שרדינא	שרדינא	רובין	רובינו	רובינו	קורניאולה
פטדה	יגונסייא	אימרלדא ²⁷⁸	פרשמא	בלאש	פראסמה	טופאציאוס
ברקת	טופצא	אשטופצא	קרבונקלא	קארבוקולו	סמיראלדו	ציראבנו ²⁷⁹
נופך	אשקרבונקל	קרבוקלא	מראקדי	אפראשמה	קארבונקיי	קארבונקיי
ספיר	שפרא	שפיר	שפילי	ספירה	צאפירו	צאפירו
יהלום	בריי	בריקלא	פירלה ²⁸⁰	דיאמנטי	דיאמאנטי	דיאמנטי

278 279 280

²⁷⁸ *Imaralda*. The Chizkuni swapped out *imaralda/smaragdus* (which the Septuagint uses for “barekes”) with *topazion* (which is the translation for *pitdah*), possibly influenced by Targum Onkelos—who held that *pitdah* is green and *barekes* is shiny.

²⁷⁹ *Tziravnu*. See note 164.

²⁸⁰ *Perla*. It seems clear that Rabbeinu Bachya is relying on earlier opinions who identified the diamond with “beryl” based on the Septuagint (see note 193), but he understood “beryl” as *perla* = pearl.

פסוק	כ"י רש"י	חזקוני	רבנו בחיי	אברבנאל	ר"מ פרוכניצאלי	שלטי הגיבורים
לשם	אלמנדינא	אלמנדינא ²⁸¹	אסטפסים	אמאטישטה	טורקיסה	טורקינה
שבו	יאיט	אמטיטא	טורקיסה	אישטופאז	טופאציאו	יאצינטו
אחלמה	אשמטיט ²⁸²	יגוינצא ²⁸³	קריסטאלו	אישמיראלדה	אמיטיסטו	אוניקו ²⁸⁴
תרשיש	קרישטל	קרישטיילא	קריאוליקה ²⁸⁵	טורקינה	יאצינטו	קריסולייטוס
שהם	אוניקלא	אוניקלא	אוניקלו	קרישטאל	אוניקו	סמיראלדו
ישפה	ישפא	יאשפיז	יספיס	גאשפי	יאספי	יאספיס

281 282 283 284 285

Appendix B1 – Targum Onkelos and Targum Aquilas

In the Babylonian Talmud (*Megillah* 3a), it is written:

"Rabbi Yirmiya said, and some say Rabbi Chiya bar Abba: The Targum of the Torah was said by Onkelos the convert, based on the teachings of Rabbi Eliezer and Rabbi Yehoshua."

This statement appears in the Jerusalem Talmud ²⁸⁶ (*Megillah* 1:9) with slight variations. There, it states:

"Rabbi Yirmiya, in the name of Rabbi Chiya bar Ba: Aquilas the convert translated the Torah before Rabbi Eliezer and Rabbi Yehoshua, and they praised him."

The primary difference between the Babylonian and Jerusalem Talmud versions of this statement is whether the translation was done by *Onkelos* or *Aquila*. Aside from this, the statements are almost identical. ²⁸⁷ Consequently, it seems that both Talmuds refer to the same

²⁸¹ *Almandina*. In printed editions and the Paris manuscript it says "Almandasa," but most other manuscripts have "Almandina"—similar to the version of Rashi that seems to match most of the stones.

²⁸² *Ashmatit*. The reading of this word isn't solid—it might actually say "Ashambrit," but I followed the version like the Chizkuni has.

²⁸³ *Yeguayntza*. In the printed editions and the Paris manuscript it's "Girgonza," but it's all the same—it refers to zircon, which was used to translate the "Lynkurion" in the Septuagint.

²⁸⁴ *Oniko*. The Shiltey Giborim doesn't explain his reasoning, but maybe he identified "Achlama" as onyx based on Targum Onkelos translating it as "Ayin Agla." See what we discussed in the main article about this.

²⁸⁵ *Kreolikah*. See in the article and in note 248—it probably should say "Chrysolite" or something like that. Rabbeinu Bachya writes "its color is like oil," which fits the description of chrysolite. See the main piece on "Tarshish."

²⁸⁶ The first one to mention this comparison was R' Yehuda ben Barzilai of Barcelona in *Sefer Haktim* (siman 175), and it looks like he held that Onkelos and Aquilas were the same person.

²⁸⁷ There's no need to say there's a contradiction between the Bavli saying "R' Yirmiyah, or some say R' Chiya bar Abba," and the Yerushalmi quoting "R' Yirmiyah in the name of R' Chiya bar Abba." You might

translation of the Torah, performed by a single person, called *Onkelos* in the Babylonian Talmud and *Aquila* in the Jerusalem Talmud.

There are at least three additional stories in the Babylonian Talmud (and Tosefta) attributed to *Onkelos*, whereas in the Jerusalem Talmud, they are said about *Aquila*.²⁸⁸ This further supports the assumption that they were one and the same, with the Jerusalem Talmud referring to him as *Aquila* and the Babylonian Talmud as *Onkelos*.²⁸⁹ This assumption is further strengthened by the fact that *Aquila* is never mentioned in the Babylonian Talmud²⁹⁰, nor is *Onkelos* mentioned in the Jerusalem Talmud²⁹¹, making it difficult to accept that they were two different individuals.

It seems that this was also the view of the Vilna Gaon. In *Gittin* (56b), he corrected the text of the Gemara from "*Onkelos... the nephew of Titus*" to "*Onkelos... the nephew of Hadrian*," presumably based on *Midrash Tanchuma (Mishpatim)* and *Yalkut Shimoni (Tehillim 798)*, which state that *Aquila* was the nephew of Hadrian.²⁹² [Similarly, *Korban HaEdah* on *Megillah* (Jerusalem Talmud) writes:

*"Aquila the convert translated – this refers to Targum Onkelos."*²⁹³]

think these are two separate statements, but actually, we find dozens of places in Yerushalmi and Midrashim where it says exactly "R' Yirmiyah b'shem R' Chiya bar Abba" (see citations). In Bavli, it's more common to say "or some say," which is just a difference in citation style. Even in Bavli, we find R' Yirmiyah quoting R' Chiya bar Abba directly; it's only in shortened versions that it says "some say."

²⁸⁸ See Appendix B3 below: three places where the wording of Onkelos and Aquila are exactly the same. Besides that, just comparing their names already makes a strong case. If they weren't the same person, you'd have to say there were two different people who were 1) converts, 2) nephews of the Roman emperor, 3) involved in the destruction of Yerushalayim (either under Titus or Hadrian), and 4) only known separately—one through Bavli/Tosefta and the other through Yerushalmi/Midrashim. Sounds like a stretch.

²⁸⁹ In the Bavli manuscripts and many Rishonim, his name is written "Anklos," which is even closer to "Aquila."

²⁹⁰ In Yerushalmi (Sukkah 3:5, also in Vayikra Rabbah 30 and Pesikta DeRav Kahana 27) it says: "R' Tanchuma translated 'hadar' as 'hidur,' a tree that grows by water." The Bavli (Sukkah 35a) also brings this drasha, but doesn't attribute it to Aquila: "Ben Azzai says: Don't read 'hadar' but 'idor,' because in Greek, 'idor' means water, and what grows on all waters? That's the esrog." The attribution to Ben Azzai is shaky—some manuscripts say it was R' Abbahu, and Ben Azzai's version is the one in *Sifra* and *Vayikra Rabbah*. The Bavli may have omitted Aquila's name because they didn't know of his Greek translation.

²⁹¹ This point was already raised by Y. Brill in his notes on the letter *Bikores* to R'Tz Chajes (note 16). To add: Even the Targum of Onkelos is never quoted in Yerushalmi. See *Torah Sheleimah*, chelek 24, "Talmud Yerushalmi veHaTargumim" chapter 14—he couldn't find even one quote of Onkelos in Yerushalmi or Bereishis Rabbah. The little Targum that is found is identical to Targum Neofiti.

²⁹² In the Gemara manuscripts, the correction of the Gra isn't found, but it's very likely the text of the Gemara was corrupted where it says "he brought Titus to judgment," since clearly the story is about Titus (Hadrian was still alive when Onkelos converted, as explained in those aggados), and that got copied mistakenly to earlier parts of the sugya.

²⁹³ R' Eliyahu Landau discusses this in depth in his intro to *Targum Avraham* by R' Avraham ben the Gra (Yerushalayim 1896). He suggests that Aquila first translated to Greek, and then later did the Aramaic, which is like a second edition.

Targum Aquilas is well known in Chazal (see note 20) as a **Greek** translation. This implies that *Aquila*/Onkelos translated the Torah into **Greek**,²⁹⁴ rather than Aramaic²⁹⁵. Indeed, the **only** source that explicitly states that *Onkelos* translated the Torah is this statement by *Rabbi Yirmiya*! Nowhere else in Chazal is there mention of an Aramaic translation of the Torah by *Onkelos*²⁹⁶, despite the fact that many quotes from the Targum appear in the Babylonian Talmud²⁹⁷. In none of these instances is the phrase "*Targum Onkelos*" used, but rather,²⁹⁸ it simply says "*as we translate*" (כדמתרגמינן).

However, it is difficult to say that the Babylonian Talmud meant that *Onkelos* translated the Torah **only** into Greek. After all, the Gemara challenges *Rabbi Yirmiya*'s statement that *Onkelos* translated the Torah by citing *Rav*, who said that *Ezra* had already translated it. *Ezra*'s translation was certainly not in Greek. This indicates that the Babylonian Talmud understood *Onkelos*' translation as being into **Aramaic** as well.

²⁹⁴ In *Bereishis Rabbah* (parsha 36), the Midrash just says "Targum" and means the Greek translation. It says: "Yefes shall dwell in the tents of Shem... Bar Kappara says: Torah should be said in the language of Yefes in the tents of Shem." R' Yudan adds: "From here is a source for Targum." Simple pshat: Bar Kappara says Torah in Greek is legit, and R' Yudan agrees. This matches Bavli (Megillah 9b), where R' Yochanan explains RSBG's view that Greek was the only foreign language allowed for sefarim. Yerushalmi (Megillah 1:9) also quotes R' Yudan, but inserts a Targum on Yefes's kids in between, which can confuse you—see R' Chaim Kanievsky's peirush. *Lekach Tov* on Bereishis 9:27 also quotes them together and explains like we do: Targum = Greek. Later in the Midrash, it brings the story about *Ezra*'s Targum ("meforash zeh Targum"), which for sure wasn't Greek. So we see that "Targum" just means any translation. See also *Sifrei* (Devarim 161): "Mikra leads to Targum, Targum leads to Mishnah"—meaning not a specific Targum but understanding through translation. Similarly, in *Bereishis Rabbah* (79, Theodor-Albeck edition), R' Chiya and R' Shimon ben Chalfita forgot words from "this Targum" and had to ask Arab merchants. Two of the words are from verses with no official Targum, so "Targum" there just means the meaning of the word. Based on this, maybe *Onkelos*'s translation was in Greek. The Gemara's question—what was *Onkelos* adding if *Ezra* already translated—only makes sense if they weren't the same language. There's even a hint that *Onkelos* translated into Greek, from two manuscripts of the Gemara (Oxford 366 and Munich 140) where it says: "The Targum of the Torah was said by *Onkelos* the convert in the name of R' Eliezer and R' Yehoshua—at that time darkness came to the world for 3 days." We find that same darkness thing said in other places about the Greek translation under Ptolemy. Putting the two together suggests *Onkelos* may have translated to Greek. In *Eichah Rabbah* (1:1), a quote is labeled "Targum Onkelos" in Greek, but Buber's edition says "Aquila." *Shir HaShirim Rabbah* and *Pesikta* also call it Aquilas. R'Tz Chajes already noted this in his notes to *Bikores*, pg. 455.

²⁹⁵ Of course, this idea (that'll be rejected soon) goes against the way Klal Yisroel has always understood it. The common belief is that *Onkelos* wrote the Aramaic Targum. This is how Rashi understands it throughout the Torah (and so do the other meforshim—see Bereishis 25:3 and there Rashi, Ramban, and Radak), and also the Rambam (see Ishus 8:4, Issurei Biah 12:13, Moreh 1:27), and basically all the Acharonim.

²⁹⁶ Except for a few places in Zohar (vol. 1:180b, and in *Sitre Torah* 88b–89a; *Tikkunei Zohar* 18:74b, 69:111a; *Zohar Chadash* vol. 1:19a). Also in *Pirkei deRabbi Eliezer* (ch. 38), but the R'dal already says there (note 95) that this line is a marginal note that slipped into the main text. In the manuscripts and parallels, it's missing (see for example M. Higger's edition of *Pirkei deRabbi Eliezer*, Horev 10, ch. 37, p. 212). The attribution to *Onkelos* also shows up in *Bamidbar Rabbah* 9:49, which is a later Midrash.

²⁹⁷ One could push back and say they didn't name the translator because everyone already knew, like R'Tz Chajes suggests (see *Bikores*, pg. 454, and *Imrei Bina*, pg. 905). But that's a big stretch, because the Bavli (Megillah 3a) makes it sound like R' Yirmiyah was being mechadesh that *Onkelos* made the Targum—it wasn't common knowledge.

²⁹⁸ Even in the writings of the Geonim, we don't find anyone clearly calling our standard Targum "by *Onkelos*," except when quoting that Gemara in Megillah.

This can also be inferred from the wording of the Gemara:

"The Targum of the Torah was said by Onkelos the convert,"

which implies that the Gemara understood *Rabbi Yirmiya* as referring to the **known** Targum of the Torah—namely, the Aramaic translation.²⁹⁹

It is possible to reconcile this by explaining that *Onkelos/Aquila*s indeed translated the Torah into **Greek**, as explicitly stated in the Jerusalem Talmud, but the Babylonian Talmud maintained³⁰⁰ that he also translated it into **Aramaic**. Alternatively, it is possible that, while he translated the Torah into Greek, he also **refined and formalized** the existing Aramaic translation that had already been in use since the days of Ezra³⁰¹, as the Gemara states:

"It was forgotten and then reestablished."

If so, we would have to say that the statement in the Babylonian Talmud differs from the one in the Jerusalem Talmud by **adding** that the well-known Aramaic Targum was said by *Onkelos* based on the teachings of these Tannaim, while at the same time, he translated it into Greek before them.

This would also resolve another difficulty: Why does *Rabbi Yirmiya*'s statement—both in the Babylonian and Jerusalem Talmud—mention only a **translation of the Torah**, while the Jerusalem Talmud and Midrashim cite *Aquila*s' translation for **all parts of Tanach**?

According to this explanation, it makes sense: He received from these sages only the **Aramaic translation of the Torah**, and this is what these statements refer to. This would also explain why, throughout the Babylonian Talmud, when quoting from the Targum, the translation is **never explicitly attributed to Onkelos**—because he did not compose it, and even his teachers only **transmitted it**, as it had already been preserved orally from before them. The Aramaic Targum is referred to as *Targum Onkelos* **only because he formalized and refined it**, despite the fact that it was composed long before him.

Rabbi A.A. Silverstone³⁰² attempted to prove that *Aquila*s was *Onkelos* and that the Aramaic Targum attributed to *Onkelos* and the Greek translation of *Aquila*s were produced by the same person³⁰³. In his work, he brought hundreds of examples where he found consistency between these translations—in their wording, style, and translation methods.

Various scholars and sages throughout the generations have taken this position, including Rabbi Nathan Adler in his introduction to *Netinah LaGer* (see Appendix B2 below) and Rabbi Binyamin Mussafia (*Musaf HaAruch*, entry *Apkletorin*).³⁰⁴

²⁹⁹ But see earlier in note 294—there's a way to read that Gemara which would avoid proving the Targum was Aramaic at all.

³⁰⁰ It seems that Bavli accepted it as a tradition, since R' Yirmiyah's words don't prove it directly.

³⁰¹ Maybe he corrected the Aramaic Targum we have because he used it while preparing a fresh Greek translation.

³⁰² See A.E. Silverstone, *Aquila and Onkelos*, Manchester 1931, chapters 5–6 (pp. 73–106).

³⁰³ See especially chapter 14.

³⁰⁴ These are the words of *Musaf HaAruch*: "...and I will clothe you in embroidery"—Targum Onkelos [should be Aquilas, see under "Applikta"]... (Eichah Rabbah 1:1). I believe the proper girsa is "Targum Aquilas" because he translated all of Tanach into Greek, while Onkelos only translated Torah into

If this understanding is correct, it significantly strengthens the authority of what is written in the Greek translation of *Aquila* (which, regarding the stones of the *Choshen*, follows the *Septuagint*, as we demonstrated in the main article). This is because everything written in it also receives validation from the Babylonian Targum of *Onkelos*. It also supports the approach of this study in aligning the Aramaic translations with the Greek translations, since *Onkelos* would have certainly been familiar with the *Septuagint* and even agreed with it.

The conclusion, based on the straightforward reading of the Babylonian Talmud, is that there **must** be a correlation between *Aquila*'s translation and *Onkelos*' translation, and that everything written in *Aquila*'s translation carries the same authority as *Targum Onkelos*.

On the other hand, since we do not see a **full** correspondence between *Targum Onkelos* and *Targum Aquila* ³⁰⁵ (as already noted by Rabbi Nathan Adler in the introduction to *Netinah LaGer*, see below), it seems more likely that *Onkelos* did not compose or edit the **entire** text of the Aramaic translation. Rather, through him, the text was clarified, while the actual formulation of the translation was done by *Rabbi Eliezer* and *Rabbi Yehoshua*, and *Onkelos* merely "stated it in their name."

A similar idea is found in *Rabbeinu Chananel*'s commentary (*Megillah* 3a):

"Onkelos the convert stated it based on Rabbi Eliezer and Rabbi Yehoshua. As they taught it to him, so he taught it to others... And we resolve: There was indeed a Targum before Ezra, but most people forgot it, and Onkelos reestablished it for public reading."

According to this, *Onkelos* was no more than a recipient from these sages, but he was not involved in composing the translation itself—his connection to the *Targum* was that he established it as the text to be used for translation. ³⁰⁶

Babylonian Aramaic. If not, then they're the same person who did both. This idea also appears in L.I. Chariton, *Targum HaShivim veTargum Aquilas*, *Tevunot* 1 (2017), pp. 815–816. But *Aruch* under "Applikta" says the correct girsa is Aquilas and "Onkelos" was a printing mistake (see note 294), so no need to say they were the same person.

³⁰⁵ There's a clear contradiction between the Targum of Aquilas and Onkelos on the pasuk "Bnei HaElokim" (Bereishis 6:2). Onkelos translates it "Bnei Rabreva," avoiding anthropomorphism, but the Syro-Hexapla says Aquilas translated it "Bnei D'Eloha" (sons of God). In Bereishis Rabbah (26), R' Shimon bar Yochai curses anyone who calls them "Bnei Elokim." Another contradiction is in Bereishis 14:5, where Onkelos and others translate "Refaim" as "Gibbarim," similar to the Septuagint's "giants." But Aquilas, according to the Syro-Hexapla, didn't translate it at all—he just wrote "Refa'ia."

³⁰⁶ According to *Rabbeinu Chananel*, when the Gemara says "Onkelos the convert said," it means he established how it should be translated. Also, when R' Yirmiyah says "MNaTzPaCh—Tzofim said them," it doesn't mean a literal saying, but an enactment. In *Yerushalmi* (*Megillah* 1:9) it says: "What is MNaTzPaCh? R' Yirmiyah in the name of R' Shmuel bar Rav Yitzchak: What the Nevi'im enacted for you."

However, if this is the case, it becomes difficult to reconcile the continuation of the Gemara³⁰⁷, which states that *Yonasan ben Uziel* translated the *Nevi'im* based on *Chagai, Zechariah, and Malachi*, and was prevented by Heaven from translating the *Ketuvim*. This clearly implies that the Targum was a **specific translation**, rather than just a received tradition.

Therefore, it is preferable to explain that, according to the Babylonian Talmud, *Onkelos the convert* was indeed involved in **editing** the Aramaic Targum, but he was not its **original author**. This would explain why the Jerusalem Talmud never cites the *Targum*, and why even the Babylonian Talmud does not bring it as a decisive source, but rather as a **support for interpreting words**—since it was not viewed as the work of a specific individual upon whom one could rely authoritatively.³⁰⁸

This Targum was transmitted by the *meturgemanim* (official translators) from the time of Ezra onward, and it is possible that different traditions were handed down, which later gave rise to the **Babylonian Targum (Onkelos)** and the **Jerusalem Targum**³⁰⁹. A comprehensive review of all Targumim and their historical development will be the subject of a separate article, *b'ezras Hashem*.

Appendix B2 – The Approach of Rabbi Nathan Adler (from the Introduction to *Nefesh HaGer* on Targum Onkelos)

Rabbi Nathan Hakohen Adler (*Rabbi of Hanover and later Chief Rabbi of England*) reaches a somewhat different conclusion in the general introduction to his work *Netinah LaGer*. Due to the significance and rarity of his words, I will quote his relevant comments (with slight modifications in punctuation for readability):

³⁰⁷ In the Bavli, after R' Yirmiyah's statement that Onkelos translated Torah, it continues with: "Yonasan ben Uziel translated *Nevi'im* based on Zechariah and Malachi." But it's not clear whether that's still R' Yirmiyah talking or if it's R' Ashi. Though Yonasan ben Uziel was the top talmid of Hillel, we don't know much else about him in Chazal besides that (see Avos d'Rabbi Nosson 14, Bavli Sukkah 28a, Yerushalmi Nedarim 5:6), and that he translated *Nevi'im*. Some speculated Theodotion—whose Greek translation Origen used—was actually Yonasan ben Uziel, since the names mean the same. That would mean the Bavli referring to "Targum Yonasan" means a Greek one. But that's just speculation. And it can't be true, because we still have Theodotion's translation of Daniel, and the Gemara says Yonasan wasn't allowed to translate *Kesuvim* because of the end-of-days hints in Daniel.

³⁰⁸ Based on all this, we also understand how Amoraim felt comfortable correcting the Targum wording (*Zevachim* 54a): "Rav translates 'Binyamin Ze'ev Yitraf' as 'Be'achasantaya itbnei Mizbechta,' Levi translates: 'Be'achasantaya itbnei Mikdashta.'" If the Targum had been written by Tannaim, they probably wouldn't have felt so free to tweak it.

³⁰⁹ In the *Sefer Ya'ar* (a peirush from a Rishon on Targum; for the author, see R' A. Shisha's article in *Tzefunos* 7, Nissan 1990, pp. 66–70, and R' D.Tz. Hillman's response in *Tzefunos* 8, Tammuz 1990, pp. 113–114), on Vayikra 21:20, he notes that Onkelos's Targum is clearly Babylonian and not Eretz Yisrael style. Maybe he learned with the Chachamim there and moved to Bavel, or maybe he did a Yerushalmi-style Targum himself and the Babylonians later adapted it.

"It is well known that Aquilas is the same as Aquila, and in Greek, he is called Akylos. He was from Asia Pontus³¹⁰ and lived during the reign of Emperor Hadrian. He converted to Judaism and translated the Torah, Nevi'im, and Ketuvim into Greek. According to the scholars of the nations, his translation was held in high regard among the Jews, as it was remarkably precise in its language and exceptionally faithful to the Hebrew text, word for word."

*"In Maor Einayim (Imrei Binah, Chapter 45) by the scholar Rabbi Azariah min HaAdumim, additional passages from his translation are brought. That scholar concludes that, despite the similarity in pronunciation between the names Aquilas and Onkelos, they were **two different individuals**, even though both were righteous converts and both were in Rome, in the imperial court."*

*"On the other hand, the scholar Graetz, in his History of the Jews, confirms that these two names refer to the **same person**. He further asserts that the Targum attributed to Onkelos is actually a translation of the Greek version attributed to Aquilas."*

"And behold, this opinion is disproven and almost contradicts reality. Because aside from the fact that anyone who understands the Greek language will see, in the remaining fragments of the translation attributed to Aquila, a major difference between it and the Targum Onkelos that we have — for he (Aquila) translated every single word exactly as it was, without turning to the right or to the left from the Hebrew — whereas the Aramaic translator, Onkelos, changed the wording many times."

"Behold, every person whom Hashem granted the ability to taste the pleasantness of the Aramaic language will clearly see that the Aramaic Targum we have, attributed to Onkelos — both of them (Aquila and Onkelos) were from one and the same individual. Except that Greek was the language of Onkelos from his youth on the island of Pontus, and after he entered the covenant of the Jewish faith, his first task was to translate the Torah (and perhaps also Nevi'im and Kesuvim) into Greek, word for word as written, without inserting any Midrashic or halachic intent."

"And many days later, after he had learned well the Aramaic language, which at that time was the spoken language among the Jews, and after he traveled from Rome to Eretz HaKodesh, where he learned much Torah from Rabbi Akiva³¹¹ and his teachers Rabbi Eliezer and Rabbi Yehoshua, and he received from them the accepted halachos and mesoros that had been handed down from their holy Rabbanim, along with the explanations of many verses that had already been translated by Ezra (but were lost), and were preserved only in the memory of our Rabbanim — he translated it again into Aramaic, as it is in our hands today."

³¹⁰ See *Sifra* (Behar 1:1): "Not like what Aquilas issued for his servants in Pontus." But there are different girs'a'os there.

³¹¹ See *Yerushalmi Kiddushin* (1:1), where it says: "R' Yosi said in the name of R' Yochanan: Aquilas the convert translated in front of R' Akiva..." Also see Ramban al haTorah (Shemos 21:29 and Devarim 21:12).

Appendix B3 – On the Various Translations in *Divrei Yemei Yerachme'el*, from the Work Called *Seder Olam*

Found in *Divrei Yemei Yerachme'el* (copied in *Seder Chachamim u'MeKoros HaYamim*, p. 174), there is a lengthy section on the translations. And since his words, in **Part I**, Oxford MS Neubauer VI, Tarcham le'P"K, relate to many matters discussed in the article, and because of their rarity, I will copy it in full:

In the days of **Ptolemy Philadelphus**, king of Egypt, there were **seventy elders** who translated the twenty-four books for him. And **Elazar**, who was killed in the days of **Antiochus the Wicked**, was one of them.³¹² This event took place **three hundred and forty-one years before the birth of the crucified one**.

And **one hundred and twenty-four years after the crucifixion**, in the days of **Hadrian**, **Aquila**, who is **Onkelos**, arose and translated from Hebrew to Aramaic. And some say he translated from Hebrew to Greek. He was the first of those who translated from Hebrew to Greek.³¹³

And **fifty-three years after Aquila**, in the days of **King Commodus**, arose **Theodosius**³¹⁴ — this is **Theodotion** — and he translated. And **thirty years after Theodosius**, in the days of **Asverus**, father of **Antoninus**, arose **Sumchus** — this is **Symmachus** —³¹⁵ and he translated. **Asverus** was called **Shavor Malka**.³¹⁶

And **eight years later**, in **Jerusalem**, they found compiled books whose authorship was unknown. And **eighteen years afterward**, in the days of **King Alexander**, arose **Origen** and translated, and he placed **two marks** in place of a break.³¹⁷ The first was called **asteriskon** —

³¹² The theory that the “Elazar HaKohen” mentioned in the story of the Torah’s translation refers to Elazar the Kohen from the Hasmonean family seems to originate in *Sefer Yosippon* (chapter 17). That sefer copied the Aristeeas Letter as found in Josephus’s *Antiquities of the Jews* (see note 8), but added various extra details.

³¹³ The intention is likely to say either the scribes who came after the Septuagint translation, or the Jewish scribes specifically.

³¹⁴ It seems that when the writer says “Theodotion is Theodosiao... Symmachus is Somchos,” he’s trying to connect these names to known Tannaim—perhaps hinting that these were actually the ones who made the translations. Or maybe he’s just pointing out that the names happen to sound similar.

³¹⁵ In truth, the proper spelling of the name is *Symmachus*, as it appears in many manuscripts of the Bavli and Tosefta (see for example: Lieberman’s edition of Tosefta Nazir 1:2; Bava Kama 1:8, 2:1; Bava Metzia 5:7; Bava Basra 4:1). The form “Somchos” is even more common. [Also, note the confusion between vowel markers—cholem versus yud—in transliterations from Hebrew to Greek. For example, “Koreshe” (Cyrus) is written as “Cyrus” with a “y.” So *Symmachus* may have originally been *Somchos*, written *Symmachus* in Greek, similar to how *So’mchos* would sound.]

³¹⁶ Here he’s referring to the fifth and sixth translations that Origen mentions, which were found in the caves near the Dead Sea and brought to Yerushalayim.

³¹⁷ Likely, the writer meant to say “the issue” or “the question at hand.”

it was like a shining star; this was the definite one ³¹⁸. And the second was called **obelus** — it was like a bow; and it denoted a break. ³¹⁹

And they all translated **from Hebrew to Greek**, and there were some who translated **from Hebrew to Latin**, but not accurately. ³²⁰ And **lastly**, in the days of **Theodosius**, king of Rome, there arose a man named **Jerome**, a wise and understanding man. He learned the Torah of our God and translated **from Hebrew to Latin**, and **the sages of the nations accepted all his writings**.

Appendix B4 – Statements of Chazal on Onkelos and Aquilas

Tosefta, Demai, Chapter 6

"אונקלוס הגר חלק מאחיו החמיר על עצמו והולך חלקו לים המלח."

"Onkelos the convert divided from his brother, was stringent upon himself, and brought his portion to the Dead Sea."

Tosefta, Shabbat, Chapter 7

"מעשה שמת רבן גמליאל הזקן ושרף עליו אנקלוס הגר יתר משבעים מנה."

"It happened that when Rabban Gamliel the Elder passed away, Onkelos the convert burned more than seventy maneh (valuable items) for him."

Babylonian Talmud, Megillah 3a

"ואמר רבי ירמיה ואיתימא רבי חייא בר אבא: תרגום של תורה - אונקלוס הגר אמרו מפי רבי אליעזר ורבי יהושע."

"Rabbi Yirmiya said, and some say Rabbi Chiya bar Abba: The Targum of the Torah was stated by Onkelos the convert, based on the teachings of Rabbi Eliezer and Rabbi Yehoshua."

Midrash Tanchuma (Buber), Parashat Lech Lecha, Siman 6

"מעשה באונקלוס הגר ששאל לזקן אחד ואמר לו מה חיבב הקדוש ברוך הוא את הגר שאמר ואהב גר לתת לו לחם ושמלה."

"It happened that Onkelos the convert asked an elder: How greatly did Hashem cherish the convert, as it says: 'And He loves the convert, to give him bread and clothing.' (Devarim 10:18)"

Jerusalem Talmud, Demai, Chapter 6

³¹⁸ What's being said here is based on the understanding from other (Jewish) translators—namely Aquilas, Symmachus, and Theodotion.

³¹⁹ Again, "the issue" is probably the better word to use here. Also, his wording isn't precise: the *obelus* (a critical mark) is actually used to highlight a word that appears in the Septuagint but doesn't exist in the original Hebrew Tanach.

³²⁰ This is referring to the *Vetus Latina* (the old Latin translation). See also note 46 for more on this.

"עקילס הגר חילק עם אחיו והחמיר על עצמו והוליק הנייה לים המלח."

"Aquila the convert divided with his brother, was stringent upon himself, and brought his portion to the Dead Sea."

Masechet Semachot, Chapter 8

"וכשמת רבן גמליאל הזקן שרף עקילס הגר לפניו יותר משמונים מנה."

"When Rabban Gamliel the Elder passed away, Aquila the convert burned more than eighty maneh (valuable items) before him."

Jerusalem Talmud, Megillah, Chapter 1

"רבי ירמיה בשם רבי חייה בר בא תירגם עקילס הגר התורה לפני רבי אליעזר ולפני רבי יהושע"

"Rabbi Yirmiya, in the name of Rabbi Chiya bar Ba, said: Aquila the convert translated the Torah before Rabbi Eliezer and Rabbi Yehoshua."

Kohelet Rabbah, Parasha 7

"עקילס הגר שאל לר' אליעזר אמר לו הרי חיבה שחיבב הקדוש ברוך הוא את הגר בלחם ובשמלה בלבד" שנאמר ואוהב גר לתת לו לחם ושמלה."

"Aquila the convert asked Rabbi Eliezer: Behold, the affection with which Hashem cherishes the convert is only in bread and clothing, as it says: 'And He loves the convert, to give him bread and clothing.' (Devarim 10:18)"

Appendix C – The Stones in Targum Yerushalmi

It is commonly accepted among scholars of Aramaic Torah translations that *Targum Yonasan* was built upon a translation similar to *Targum Yerushalmi/Neofiti* ³²¹ and that later *meturgemanim* (official translators) from various periods added elements based on Aggadic material from the Talmud and other sources available to them. ³²² Additionally, Babylonian stylistic influences entered into the text, resulting in what is now called *Targum Yonasan*.

If so, we should assume that *Targum Yerushalmi* reflects the original source of *Targum Yonasan* ³²³. Consequently, when there are uncertainties regarding the wording or the order of the stones

³²¹ In earlier times, the "Targum Yerushalmi" was only known through short fragments quoted by Rishonim (especially the Aruch) or printed in Chumashim alongside Targum Yonasan. In 1956, a scholar of the Targumim noticed that a manuscript in the Vatican Library—dated to the year 1264 and catalogued as Targum Onkelos—was actually a full version of the Yerushalmi Targum. He published it with notes and named it "Targum Neofiti," after the collection it was found in. Since then, that version is known either by that name or as "The Complete Targum Yerushalmi" to distinguish it from the "Targum of the Fragments" printed earlier.

³²² See *Sefer Ha'Itim* (siman 175): "And the Targum of Eretz Yisrael, which includes extra aggadic passages—this was added by their chazzanim for the sake of derush, and they said it's permitted to say it in shul because it's a peirush."

³²³ See above, note 77. The author of this article seems to suggest differently: that the Targum attributed to Yonasan is actually built on the base text of Onkelos (perhaps according to the version from Nehardea, which was closer to Targum Yerushalmi), and the author added in halachos and aggados from the Bavli and various Midrashim (like *Pirkei deRabbi Eliezer*), and even full citations from the Yerushalmi Targum.

of the *Choshen* in either of these translations, the order in *Targum Yonasan* should be corrected based on *Targum Yerushalmi*. Likewise, *Targum Yerushalmi* should be given precedence when contradictions arise between these two sources, rather than correcting *Targum Yerushalmi* based on *Targum Yonasan*.

On the other hand, it is possible that *Targum Yerushalmi* also underwent some degree of textual revision, and that the **original** version of *Targum Yerushalmi* may actually have been preserved in *Targum Yonasan* rather than in the *Neofiti Manuscript* or the printed version of *Targum Yerushalmi*.

Targum Yonasan aligns with *Targum Onkelos* on ten out of the twelve stones but offers completely different translations for *Sapir* and *Yahalom*. *Targum Yerushalmi* presents the same stones as *Targum Yonasan*, differing in two instances, and in four cases, *Targum Yerushalmi* uses the same names as *Targum Yonasan* but applies them to different stones (see details below).

Below is a summary of the facts and details (see table below for further clarification):

1. **For four stones – 1) Odem, 2) Pitdah, 3) Barekes, 4) Tarshish – all three Targumim are identical.**
2. **For six stones – 1) Nofech, 2) Leshem, 3) Shevo, 4) Ahlamah, 5) Shoham, 6) Yashpeh – *Targum Yonasan* is identical to *Onkelos*, differing only in two stones (*Sapir* and *Yahalom*).**
3. **For six stones – 1) Nofech, 2) Yahalom, 3) Leshem, 4) Shevo, 5) Ahlamah, 6) Shoham – there is a dispute between *Targum Yonasan* and *Targum Yerushalmi*.**

A deeper examination of *Targum Yerushalmi* reveals that even within these disputes between it and *Targum Yonasan*, four of the names given in *Targum Yerushalmi* appear in *Targum Yonasan*, albeit in different placements. Only in two cases (*Leshem* = *Zuzin* and *Shoham* = *Bdellach*) do we find that *Targum Yerushalmi* introduces entirely new stone names that do not appear at all in *Targum Yonasan*.

Below, we present the stones that are identical in both Targumim but appear in a different order:

תרגום יונתן	תרגום ירושלמי
כדכדינין	נופך: כדכדינה יהלום 1.
אחלמה: עין עיגל	יהלום: עין עגלה 2.
שוהם: בירליוות חלא	שבו: ברולין 3.
נופך: איזמורד	אחלמה: זמרדין 4.

It should be prefaced that for the stones where *Targum Yonasan* aligns with *Targum Onkelos* (*Nofech*, *Ahlamah*, and *Shoham*; and *Yahalom* as well, as will be explained later), preference should be given to its order over that of *Targum Yerushalmi*. This is primarily for two reasons:

The full reasoning for this will IY”H appear in a separate article about the relationships between the Targumim.

1. **Manuscript Availability and Usage:** *Targum Onkelos* is found in far more manuscripts, spanning many different regions (to the extent that it is difficult to assume these manuscripts influenced each other). It appears in early manuscripts and was practically used by numerous Jewish communities for centuries. In contrast, *Targum Yerushalmi* is found in only a handful of manuscripts, which raises the possibility that they all derive from a single, erroneous manuscript.
2. **Similarity to the Peshitta:** *Targum Onkelos* is more aligned with the *Peshitta* (regarding *Ahlamah* and *Shoham*), a translation that had already been detached from Jewish influences in the time of Chazal.

Therefore, it seems appropriate to propose five corrections in *Targum Yerushalmi* concerning the order of the stones, where the textual evidence suggests *Targum Yerushalmi* is mistaken when compared to *Targum Yonasan* and *Targum Onkelos*:

1. **Nofech** → **Zamargadin** (*instead of "Kadkadina"*)
2. **Yahalom** → **Kadkadina** (*instead of "Ein Agala"*)
3. **Shevo** → **Bedolcha** (*instead of "Biryolin"*)
4. **Ahlamah** → **Ein Agala** (*instead of "Zamargadin"*)
5. **Shoham** → **Biryolin** (*instead of "Bedolcha"*)

Correction 1: Nofech → Zamargadin (*instead of "Kadkadina"*)

This correction is based on *Targum Onkelos*, which follows *Targum Yonasan* in this regard, as well as all the other sources we have cited that identify *Nofech* as a type of *pukh*-colored stone. Additionally, this correction is necessary because in *Yeshayahu* (54), both *Kadkod* and *Nofech* appear together:

"הנה אנכי מרביץ בפוך אבניך... ושמתי כדכד שמשותיך."

"Behold, I lay your stones with fair colors... and I will make your windows of Kadkod."

This indicates that they are **not** the same stone (as Radak points out in *Sefer HaShorashim*, entry *Kadkod*).

Correction 2: Yahalom → Kadkadina (*instead of "Ein Agala"*)

The fact that the *Septuagint* and *Aquila* translated *Kadkod* and *Yahalom* using the same term (*Aspis*) strongly supports *Targum Yonasan*'s translation of *Yahalom* as *Kadkodin*. Additionally, this is further substantiated by the fact that *Ein Agala* is demonstrated later to be the translation for *Ahlamah*, meaning it **cannot** be the translation for *Yahalom*.

Correction 3: Shevo → Bedolcha (instead of "Biryolin")

This follows from **Correction 5** (see below).³²⁴

Correction 4: Ahlamah → Ein Agala (instead of "Zamargadin")

This is based on *Targum Onkelos* and the *Peshitta*. Additionally, since we have already established that *Nofech* should be translated as *Zamargadin* (see **Correction 1**), the translation of *Ahlamah* must be adjusted accordingly.

Correction 5: Shoham: Birulin (instead of 'Bdolcha').

This translation to 'Birulin' is consistent in all other sources (Onkelos, Yonasan, Targum Yerushalmi, and even the Targum of the Samaritans and the Peshitta). Consequently, we will need to replace the translation of 'Shoham'—'Bdolcha'—with the translation of 'Shevo'—'Birulin' (Correction .3 above). Similar to Correction .1, this switch is proven from the fact that we find Bdolach (which in Targum Yerushalmi is translated as 'Bdolcha') alongside the Shoham stone in Bereishis (2:12) as two separate entities: "*There is the Bdolach and the Shoham stone.*" This proves that these too are not identical.

From Shemos Rabbah, which seemingly is based on or influenced by Targum Yerushalmi, it appears that these errors in Targum Yerushalmi did not occur all at once. Initially, the translation of Nofech was switched with the translation of Yahalom (and thus 'Kadkhadina' became the translation of Nofech and 'Zamargadin' the translation of Yahalom). Then, the translation of Shevo was switched with the translation of Shoham (and thus 'Birulin' became the translation of Shevo and 'Bdolcha' the translation of Shoham). This intermediate stage is what was before the editors of Midrash Shemos Rabbah³²⁵.

Later, the translation of Yahalom was switched with the translation of Ahlama (and thus 'Ayin Agala' became the translation of Yahalom and 'Zamargadin' the translation of Ahlama), and this resulted in the Targum Yerushalmi as it has reached us.

In the following table, we will present the Aramaic translations together, with the Targum Yerushalmi appearing in the Neofiti manuscript (*Yerushalmin*), the Targum Yerushalmi in the order that we propose here (*Yerushalmi' N*), and the Targum Yerushalmi in its first stage of

³²⁴ There's support for this theory from the fact that in a Tosefta fragment on Yechezkel (28:13), the word "shoham" is translated as "Birolin," the same form as in Targum Yerushalmi—unlike Onkelos, who says "Burla."

³²⁵ Even though we don't fully understand how these mix-ups happened, it seems the first stage of the confusion came from someone trying too hard to line up each gemstone with its "partner" in another pasuk—like linking *nofech* with *kadkod* from Yeshayahu 54, or *shoham* with *bedolach* from Bereishis.

errors (*Yerushalmi' N*), which was before Midrash Shemos Rabbah, along with the similar names found in Midrash Shemos Rabbah.

מקרא	אודם	פטדה	ברקת	נופך	ספיר	יהלום	לשם	שבו	אחלמה	תרשיש	שוהם	ישפה
אונקלוס	סמקן	ירקן	ברקן	אזמרגדין	שבזיז	סבהלום	קנכירי	טרקיא	עין עגלא	כרום ימא	בורלא	פנתיירי
יונתן	סמוקתא	ירוקתא	ברקתא	איזמורד	ספירינן	כדכודין	קנכירין	טרקין	עין עיגל	כרום ימא רבא	כירלת חלא	מרגנית אפנטורין
ירושלמי	סמקתה	ירקתה	ברקתה	זמרגדין	ספרינה	כדכדינה	זוזין	בדלחא	עין עגלה	כרום ימה רבה	ברולין	מרגליתה
ירושלמי	סמקתה	ירקתה	ברקתה	כדכדינה	ספרינה	זמרגדין	זוזין	ברולין	עין עגלה	כרום ימה רבה	בדלחא	מרגליתה
ירושלמי	סמקתה	ירקתה	ברקתה	כדכדינה	ספרינה	זמרגדין	ברולין	זוזין	עין עגלה	כרום ימה רבה	בדלחא	מרגליתה
ירושלמי	סמקתה	ירקתה	ברקתה	כדכדינה	ספרינה	עין עגלה	זוזין	ברולין	זמרגדין	כרום ימה רבה	בדלחא	מרגליתה
שמו"ר				כדכדינן	ספירינן	אזמרגדין	ברולין			קרומשסין	בדולחין	מרגליטוס

Here's the literal translation in a yeshivish style:

From Midrash Shemos Rabbah, it would seem more probable that in the intermediate stage, *Birulin* was the translation of *Leshem*, and *Zuzin*, which is the translation of *Leshem* as we have it, may have originally been the translation of *Shevo* (see Targum Yerushalmi? in the table). There is also support for this in the Targum *Yerushalmin* before us, as it states: "*Leshem Zuzin, Birulin, Zamargadin*," but this still requires much clarification.

Appendix D – On the Names of the Stones in Shemos Rabbah

In this appendix, we will review the identifications suggested in Midrash Shemos Rabbah and attempt to trace them through two related aspects: the source of the proposed identification and

its original text.³²⁶ Regarding the source, it seems that nearly all the names appear in the Septuagint or Targum Yerushalmi. Therefore, it appears that the author combined these two—sometimes choosing the translation from one and sometimes from the other, for reasons that can only sometimes be deduced.

- **Odem – Sardagnin.** This is how it appears in Manuscript S, but in other manuscripts, it appears as *Shadragnin* with additional errors due to the similarity between ט and ט in the manuscripts. It appears that this is a corruption of *Sardion*, and the identification in the Midrash follows the Septuagint. Apparently, the Midrash preferred this name over *Samkata* from the Targum because *Samkata* is a general term for all red stones.
- **Pitda – Shumpozyn (as found in Manuscript R and old prints),** and in manuscripts, it also appears as *Shumifizin* (A, B, S, and W) or *Shimifizin* (P). It seems this is a corruption of *Topazion* in the Septuagint, where *υ* was replaced with *ψ* (which are easily confused in manuscripts, just as in *Tarshish*, where *Krumshasin* in the manuscript was changed to *Krumtasin* in the prints). Here, too, the Greek name was used, as the Aramaic name—*Yarkata*—is a general term for green stones.
- **Barekes – Deykentin (in Manuscripts P and R, and in prints with a נ instead of a υ).** The ancients wrote that there are different types of this stone (*Jacinth*), and based on what was written regarding *Barekes*, it appears that here it refers to the red type, which would align with the switch we proposed in the Septuagint. The name *Deykentin* was used for a red stone only in the Rishonim's times,³²⁷ which seems to support the idea that this Midrash is not ancient, since in Chazal's times, this name was used for blue corundum—a fact that was never suggested as a translation for *Barekes* in any source.

³²⁶ I checked six manuscripts and five old printed editions:

- Oxford, Bodleian Library Neubauer 2335 ["A"],
- Oxford, Bodleian Library 5977 ["S"],
- London, Sassoon Collection 920 ["B"],
- Jerusalem, National Library Hebr. 24°187 ["P"],
- Tel Aviv, Ratzon Halevi Collection 10 ["R"],
- Paris, National Library.

The printed editions were: Constantinople 1517, Venice 1545, Amsterdam 1641, and Vienna 1863. All of them have clear textual errors, and no two match exactly. Most of the mistakes show up in words the scribes didn't understand, so they often swapped similar-looking letters.

³²⁷ For how the name *Diye Kantin* developed, see above, note 149.

- **Nofech – Kadkhodin.** This is how it appears in two manuscripts (B, Sh), but in other manuscripts, a *ṛ* appears in place of one or two of the *ṛ*, a *ḥ* appears in place of the first *ḥ*, and similar errors appear (thus creating, for example, *Barkhadin* in R). However, based on Targum Yerushalmi here, *Kadkhodina* seems to be correct. We already wrote above that it appears there is a mistake here in Targum Yerushalmi, as *Kadkhodina* was originally the translation of *Yahalom*, which would indicate that Shemos Rabbah used Targum Yerushalmi after this error had already occurred.
- **Sapir – Sapirion.** Here, the Midrash uses the form that appears in Targum Yonasan, as well as in the Midrashim, while in Targum Yerushalmi, it is *Sapirina*.³²⁸ It is possible that this spelling comes from the Septuagint rather than from Targum Yonasan, or that at this stage, Targum Yerushalmi had *Sapirion*, which was later shortened to *Sapirina*.
- **Yahalom – Zamargadin.**³²⁹ In Appendix C, we suggested that this was indeed how it appeared in the first stage of Targum Yerushalmi's corruption (*Yerushalmi'b*), and this was the Midrash's source for this identification. However, in the original Targum Yerushalmi, *Zamargadin* was the translation of *Nofech*, as it appears in Onkelos and Yonasan.
- **Leshem – Birulin.** This is how it appears in most manuscripts. In the prints and in Manuscript R, it appears as *Kuchlin*, which seems to be a corruption through the exchange of *ḥ* and *ḥ*, and the merging of *ṛ* and *ṛ* into a *n* (common occurrences in manuscripts, especially in words unfamiliar to the scribes). Based on this, we can assume that in the Targum Yerushalmi before the Midrash, *Birulin* was the translation of *Leshem*, and not the translation of *Shevo*, as it appears before us.
- **Shevo – Akatis.** This is inferred from a comparison with the Septuagint, though we have not found this version in any manuscript. Nevertheless, we see that *ḥ* was switched with *ḥ* (as in *Nofech*), and *o* often switches with *ḥ* (as we see in Manuscript P, where *Margalisum* appears instead of *Margalitos*).
- **Achlama – Hemysyon.** Comparing with the Septuagint, this seems to refer to *Amethyston* (with a *ṛ* at the end instead of a *o*, as it appears in the Septuagint on Yechezkel). However, it is unclear how it became *Hemysyon*—perhaps *ḥ* was exchanged with *ḥ*, and the original was *Amisyon*.³³⁰

³²⁸ That's the spelling in the Neofiti manuscript, and also in the Aruch under the Targum Yerushalmi entry for *Kadkod*—it says "Samporina" or "Sampolina."

³²⁹ In one manuscript and in some printed editions it says "Asmarghadin," which is closer to the Greek spelling, but in most other manuscripts the Aramaic and Latin forms use a "z" instead.

³³⁰ A similar form appears in a group of Septuagint manuscripts called "miniscules" (i.e., lowercase Greek script—as opposed to the older "majuscule" or "uncial" uppercase ones that better preserve the original wording). There it says "Amethisos" with only one 'th'—which might have been the version used by the Midrash.

- **Tarshish – Krumshasin.** Comparing with the Septuagint, this seems related to *Chrysolithos*, though it may also be related to *Chrum Yama*. In Manuscript R, the version is *Krumtasin* (where *υ* was replaced with *ψ*, or vice versa), and the same appears in the prints. Some have suggested that this is a corruption of the name *Chrum Thalassin*, meaning "sea-colored" in Greek, which parallels *Chrum Yama* in the Targumim. However, no known Greek sources mention a stone by this name.
- **Shoham – Bidulchin.** This is inferred from comparison with Targum Yerushalmi, but manuscripts have *Paralokin*³³¹ or *Padlokin* (only in Manuscript A).³³²
- **Yashpe – Margalitos.** This translation is seemingly based on Targum Yerushalmi, where it appears as *Margalita*, the only source where we find this translation alone.³³³ The name in Midrash Shemos Rabbah resembles the Greek *Margaritos* (Pearl)³³⁴ but with *ך* instead of *ל*, likely influenced by the Aramaic form in Targum Yerushalmi. Among Chazal,

³³¹ Bacher (see above, note 39) and Lieberman suggested that this refers to *prilocus* (i.e., "white-edged") that Pliny describes as a stone with a white border. But it's unlikely that such a rarely used name (mentioned only by Pliny) would be used in translations. More likely it was a description rather than the name of a stone type.

³³² It seems they wrote "P" instead of "B" (a common scribal issue when the yud is placed inside the bet), and a kuf instead of a ches. This is plausible given the number of foreign names being copied, which are often distorted by copyists.

³³³ In Targum Yonasan we find "Marganit Apentorin," and see below in Appendix Z where we suggest that the Yerushalmi Targum renders *Yashfeh* as "Margalita," which likely comes from shortening that same Targum Yonasan phrase.

³³⁴ Based on this Midrash and the Yerushalmi Targum, it's reasonable to say *Yashfeh* means pearl. That would match a Midrash saying that the color of *Yashfeh* is like a blend of all the stones of the Choshen. But pearls can't be engraved or cut into a square shape, and they weren't commonly used as gemstones in Egypt until Pompey's conquest (see Lux, note 103, p. 458). So it's not likely that pearls were used by the Yotzei Mitzrayim.

this name was often used as a general term for precious stones.³³⁵

From our analysis, we find that of the stones in Midrash Shemos Rabbah:

1. Four stones (*Odem, Pitda, Shevo, and Achlama*) appear to be translated based on or influenced by the Septuagint, and possibly three more (*Barekes, Sapir, and Tarshish*).
2. Three stones (*Nofech, Shoham, and Yashpe*) follow Targum Yerushalmi.
3. Two more stones (*Yahalom and Leshem*) derive from it but are not in their correct places.

Thus, approximately half the names are translated based on Targum Yerushalmi, and half based on the Septuagint.

This phenomenon can be explained in two ways:

1. The Midrash primarily followed Targum Yerushalmi (*Yerushalmi'b*), supplementing it with the Septuagint where the Targum was vague.

³³⁵ In some Chazal sources, the word “margalit” clearly doesn’t mean pearl—for example:

- “A quarry of precious stones and margaliyos” (Yerushalmi Shekalim 5:2),
- “He saw a margalit and thought it was a burning coal” (*Sifrei Zuta* Bamidbar 27:18).

But in other places, it clearly does refer to pearls:

- “The mann was white like a margalit” (Yoma 75a),
- “A margalit from the sea” (Gittin 31b),
- “A margalit or precious gem, which is the main one?” (Avodah Zarah 8b).

The phrase “precious stones and margaliyos” appears in many places, and seems to imply that margaliyos aren’t regular stones—rather pearls, which come from living creatures. This fits with Roman law too: for instance, in Justinian’s Code (81.91.2.43), a person who bequeaths “precious stones” does not include pearls (*margaritas*) unless specified. So while originally margalit may have meant pearl, later it could have become a general word for gemstones—perhaps distinguishing between transparent and opaque stones, which Roman law also distinguishes (see section 17).

In Targum Yonasan, *Yashfeh* is translated “Marganit Apentorin,” which sounds like it means “a precious stone.” In other places, he translates *Even Shoham* as “Margalin Deburlin” (Shemos 25:7; 28:9; 35:9; 39:6), and elsewhere “Avnin Tavin Deburlin” (Bereishis 2:12; Shemos 35:27). So both expressions probably mean the same. That suggests “Margalita” in Yerushalmi Targum could also just mean “a precious stone.”

[However, in Yerushalmi Targum we don’t actually find the word “Margalin.” In places where Targum Yonasan says “Margalin,” Yerushalmi usually says “Avnin Tavin” or just “Avnin.” The only time it uses “Margalin” is when translating *Kesita* (Bereishis 33:19).]

2. The Midrash primarily followed the Septuagint but corrected it based on Targum Yerushalmi where contradictions arose.

Here is the literal translation in a yeshivish style:

Appendix E – On the Colors in Bamidbar Rabbah

- **Odem – Red like blood.** This fits with all other sources.
- **Pitda – Green.** This fits with all other sources.
- **Barekes – One-third red, one-third black, one-third white.** As we wrote in the article, it is possible that this mixing of colors is merely an attempt to depict a sparkling red stone on a background, which would align with our identification of it as a red garnet, which has an internal red shimmer. This would force one trying to illustrate it to use these three colors. It is also possible that the three colors correspond to the three families of Levi, and only the red matches the color of its stone in the Choshen.
- **Nofech – Like the color of the sky.** According to the identification of the Aramaic Targumim, *Izmargadin*, we would have to say that *Nofech* is a blue *Izmargadin*, and perhaps this is the *Smaragdus Madi* that Pliny describes as having a color that reaches that of the sea—seemingly referring to *Azurite*.³³⁶ Some have suggested, based on the Targumim, that it should say "*like the color of garlic*", meaning a green stone. Interestingly, in Midrash HaChofetz, the text reads "*green like the color of the sky*," which requires further investigation.
- **Sapir – Black, similar to blue.** This description fits *Lapis*, which is dark blue. It is possible that "black" here does not mean completely black but rather dark, as we find the Rambam referring to the color of *Techeiles* as black (throughout Hilchos Tzitzis, Perek 2), even though he also describes it as "like the color of the sky."
- **Yahalom – White.** The source for this is unclear. If the editor of the Midrash had *Shoham* as the translation of *Shoham* (as found in some manuscripts of the Septuagint and the Vulgate) and *Ispis* as the translation of *Yashpe* (as noted by Rabbeinu Bachayei and Chizkuni), then the translation of *Yahalom* would have been *Beryllos*, which was later corrupted to *Perla* in some commentaries, which is a white stone. If this is correct, it would seemingly indicate that this Midrash is late, since *Beryllion* had not yet been corrupted to *Perla*, nor was the name *Perla* used until a later period. Nevertheless, this tradition can also align with the Septuagint, as there is a type of *Jasper* that is white—though it is more likely that the Septuagint referred to green *Jasper*, which was

³³⁶ See note 148.

more valuable in its time, and they did not mention white *Ispis* at all, only other colors.

- **Leshem – Similar to *Aspir* (or *Atspir*).** This is the reading in all manuscripts, but in the prints, it was corrupted to "*similar to Sapir*".³³⁷ This is ruled out by the fact that no one identified *Leshem* as a blue stone (except possibly based on this corrupted text). *Al-Atsfar* is the translation of *Charia* according to the Rambam (Peirush HaMishnayos, Kilayim 2:8), and the Meiri (Chullin 54a) writes that it refers to *Karkom HaRa*, which is also called *Morika* in Chazal (Chullin 47b and an ancient commentary quoted in Shitas HaKadmonim there). This is the spice known as *Curcuma longa* (Turmeric), whose color indeed closely resembles *Amber*, which the Septuagint identifies as *Leshem*.
- **Shevo – Neither black nor white, but a mix of black and white.** This is an excellent description of *Agate*, which usually has white and gray stripes, and it fits with all other sources.
- **Achlama – Similar to clear wine that does not have a strong redness.** This description fits *Amethyst*, which is *Achlama* in the Septuagint. Theophrastus and Pliny³³⁸ compare the color of *Amethyst* to that of wine.
- **Tarshish – Similar to a precious stone that women use for adornment.** There is only one stone that is specifically associated with women, and that is *Amber*, which Pliny repeatedly states³³⁹ is attractive only to women. Even in the days of Isidore of Seville (636 CE), *Amber* was used to make beautiful necklaces that were popular among country women.³⁴⁰ This description matches the Septuagint's identification—*Chrysolithos*, which resembles *Amber*. In Rabbeinu Bachayei (Parshas Tetzaveh and Parshas Bamidbar), instead of "*similar to a precious stone that women use for adornment*," he writes "*similar to the light of oil*," which likely indicates a yellow stone. Additionally, in the Drasha of the Ramban,³⁴¹ it says "*similar to the light of the sun*," and it is likely that one of these versions is a corruption of the other. In Midrash HaChefetz, there is yet another variant: "*like a glowing white*." The many variations suggest that the text was already confused in the times of the Rishonim.
- **Shoham – Very black.** This description perfectly matches *Shoham* (as it is understood today), which is *Shoham* according to the Vulgate, and this is also the position of several commentaries (Rabbeinu Bachayei, Chizkuni, and others). However, the problem is that in earlier periods, *Shoham* was a name for a white or multi-colored stone, and the black type was only called *Shoham* from the time of the Rishonim onward. This is further

³³⁷ In the printed Rabbeinu Bachya it says Dan's stone "resembles sapphire," but all the manuscripts I checked say his banner color was black.

³³⁸ Theophrastus.

³³⁹ Chapters XI and XII.

³⁴⁰ Isidore (see above, note 66), pg. 324, section XVI.vii.7.

³⁴¹ This line was mistakenly left out in printed editions, but it appears in the manuscript.

evidence that this Midrash ³⁴² is from a later period.

- **Yashpe – Similar to all colors.** This appears to describe *Ispis*, which is *Yashpe* according to many commentaries (as we noted in the main article regarding *Yahalom*, as it was before the author of the Midrash). However, even if *Yashpe* is *Shoham*, as we suggested based on the Septuagint, this description is fitting, as Pliny describes this stone as possessing many colors.
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Appendix F – On the Confusion in the Translation of *Barekes* and *Nofech* as Reflected in Sefer Ben Sira

In the Hebrew manuscripts of Sefer Ben Sira ³⁴³ (the beginning of Perek 35/32), there are four pesukim, which seemingly divide into two units of two pesukim, where one pasuk appears to be repeated. In the Greek text of Ben Sira, as well as in the Peshitta, instead of each unit of two pesukim, only one pasuk appears. This indicates that in reality, we have before us two pesukim, each of which was, for some reason, duplicated.

The Pesukim:

(Unit 1):

א.	כחותם על כיס זהב,	שיר/שירת א-ל על משתה היין.
	Like a seal on a golden pouch,	a song of Hashem over the wine feast."
ב.	כומז אודם על ניב/זיר/טס זהב,	משפט שיר על משתה היין.
	Like a crimson clasp on a golden plate,	a poetic judgment over the wine feast.

³⁴² A black flag might hint at a clear or colorless stone, since in heraldry (see note 103), a black flag corresponds to a clear stone like diamond (called "adamas").

³⁴³ I copied the pesukim in Ben Sira from the Leiden edition:
P. C. Beentjes, *The Book of Ben Sira in Hebrew*, Leiden 1997.

(Unit 2):

ג.	כרביד /כדביר זהב בו נופך וספיר, כך נאים דברים יפים/נואי דברים על משתה היין.	
	Like a gold necklace with Nofech and Sapir,	so too, beautiful words over a wine feast.
ד.	מלואות/מלא/כל מלא פז וחותם ברקת,	קול מזמור על נועם תירוש.
	Filled with fine gold and an engraved Barekes,	the voice of a melody over the pleasantness of wine.

Comparison of the Hebrew Versions and Translations

Unit 1 (Pesukim A & B):

Hebrew Version A:	כחותם על כיס זהב,	שיר/שירת א-ל על משתה היין.
	Like a seal on a golden pouch,	a song of Hashem over the wine feast.
Peshitta:	איך חתמא על כיסא דדהבא,	הכנא הי תשובחתא דא-להא על משתיא דחמרא.
	Like a seal on a golden pouch,	thus is the praise of Hashem over the wine feast.

Identification of the Stones of the Choshen According to the Septuagint and the Aramaic Translations

משפט שיר על משתה היין.	כומז אודם על ניב/זיר/טסן זהב,	Hebrew Version B:
a poetic judgment over the wine feast.	Like a crimson clasp on a golden plate,	
מלחמותא דמוסיקרותא בבית פוחרא דחמרא.	טבעא דאנתרקס עלי חשלטא דדהבא,	Syro-Hexapla
the battles of music in the winehouse.	Like a ring of Anthrax set in gold,	
מקהלת זמר במשתה היין.	כחותם של אנתרקס במשבצת זהב,	Septuagint
a choir of song at the wine feast.	Like a seal of Anthrax in a golden setting,	

Unit 2 (Pesukim C & D):

כך נאים דברים יפים/נואי דברים על משתה היין.	כרביד/כדביר זהב בו נופך וספיר,	Hebrew Version A:
so too, beautiful words over a wine feast.	Like a gold necklace with Nofech and Sapir,	
הכנא " מ'לא שפירתא על משתא דחמרא.	איך עקא דדהבא וטבעא וזמרגדא	Peshitta:
thus is the beauty of a wine feast.	Like a gold necklace with a ring and Zamargadin,	
קול מזמור על נועם תירוש.	מלואות/מלא/כל מלא פז וחותרם ברקת,	Hebrew Version B:
the voice of a melody over the pleasantness of wine.	Filled with fine gold and an engraved Barekes,	
קינתא דמוסיקרותא מהניא בחמרא.	בתוקנא דדהבא טבעא דאזמרגדא,	Syro-Hexapla:
the lament of music is effective with wine.	In a golden setting, a ring of Zamargadin,	
קול זמר עם יין נעים.	כחותם של סמרגדוס בתוך מלאכת	Septuagint:

	זהב,	
the voice of song with pleasant wine.	Like a seal of Smaragdus within golden craftsmanship,	

Analysis of the Variants

It is evident that the **Peshitta** in both units aligns with the first Hebrew version, while the **Septuagint** appears closer to the second.³⁴⁴ It seems that the **Peshitta** was translated from the first Hebrew version, which is the original (or at least closer to the original), while the Greek text was a freer translation, expanding and omitting as it saw fit.³⁴⁵ Later (in the medieval period or earlier), the Greek text was retranslated into Hebrew, forming the second Hebrew version.³⁴⁶

For our purposes, it appears that the word "*Anthrax*" was added in the first pasuk of the Greek version. When it was retranslated into Hebrew, since they did not know how to translate "*Anthrax*", they wrote "*Odem*", as *Anthrax* is a red stone.³⁴⁷

In **Unit 2**, in Hebrew Version A, the phrase "נאים דברים יפים" was translated in the Peshitta as "מלא שפירתא". In the Greek version, this was (mistakenly?) rendered as "יין נעים", which was then retranslated into Hebrew in Version B as "נועם תירוש".

What is most relevant to us is the translation of the stone in the second statement (Unit 2). In **Hebrew Version A**, it says "נופך וספיר", and "נופך" was translated into Greek and Syriac as "אזמרגדא".³⁴⁸ It seems that when the Greek "*Smaragdus*" was later retranslated into Hebrew, they wrote "ברקת" instead of "נופך", possibly influenced by the Septuagint's translation of *Barekes* in the Choshen stones. However, it is difficult to say the reverse—that Hebrew Version B is the original and Hebrew Version A was created through translation from Syriac—since the Syriac text of the rest of Ben Sira is a precise translation from Hebrew, whereas here, it is far removed from Hebrew Version B.

³⁴⁴ In Unit A, for example, version A has "chotam" (seal), which the Peshitta translates literally, while version B says "odem" (ruby), which the Greek version uses.

³⁴⁵ This is also clear from the Greek translator's introduction—he claims to be Ben Sira's grandson—and researchers have shown many examples of this.

³⁴⁶ More examples of this phenomenon—where there are two Hebrew versions of Ben Sira, and one is a back-translation from Greek or Syriac—have been found by scholars. Some can be seen in the intro to the *Apocrypha* (Oxford 1913 edition).

³⁴⁷ Another proof that version B was made later based on the Greek is that the Greek says "anthrax" (ruby) for *odem*, even though the Septuagint always uses "sardion" for *odem* in the Choshen. That makes it more likely that the original Hebrew didn't say "odem" at all—just "chotam"—and the Greek translator (freely) added "anthrax." Later, someone translating it back into Hebrew rendered "anthrax" as *odem*, knowing it was a red stone. The word *odem* is suspicious here, because we don't find it as a standalone gem anywhere else in Tanach (unlike *nofech* in the next line).

³⁴⁸ For some reason, the word *sapir* (sapphire) is missing from the Peshitta and the Greek. Maybe it was a later addition to the Hebrew version, possibly copied in tandem with *nofech* from the Choshen list.

One could argue that Version B (*Barekes*) is the original and that Version A (*Nofech*) resulted from a translation from Greek to Hebrew, with the Peshitta translating from the newer Version A. However, this is difficult, as where did the Peshitta get *Zamargadin* for *Nofech*?

It is possible that the **Syriac text** is a free translation of Version B, which was then translated more precisely by the **Septuagint**, and later, the Syriac translation was retranslated into Hebrew, forming Version A. This would mean that the word *Barekes* was translated by the **Septuagint** as *Smaragdus*, and similarly, the Peshitta translated it (perhaps under the influence of the Septuagint), and then in a later Hebrew retranslation, *Smaragdus* was rendered as *Nofech*, following **Onkelos' translation** of the Choshen stones.³⁴⁹

According to **Ben Sira scholars**, the Syriac translation was produced in the **2nd century CE**,³⁵⁰ which serves as evidence for the early Jewish tradition of translating *Nofech* as *Smaragdus* rather than *Barekes*.

Appendix G – A Comparative Table of the Aramaic Translations:

מקרא	אונקלוס ¹	יונתן במדבר ²	'יונתן'	ירושלמי ³	פשיטתא
אודם	סמקן	סמוקא	סמוקתא	סמקתה	סומקא
פטדה	ירקן	ירוקא	יר(ו)קתא ⁴	ירקתה	זרגא ⁵
ברקת	ברקן	ברוקא	ברקתא	ברקתה	ברקא
נופך	אזמרגדין ⁶	אזמורד	איזמורד ⁷	*זמרגדין ⁸	צדידא
ספיר	שבזיז ⁹	שבזיז	ספירינון	ספרינה ¹⁰	ספילא

³⁴⁹ That would also explain how *sapir* got in here—because *nofech* appears in the verse about *sapir*, so they added both by association.

³⁵⁰ See:

W. Th. Van Peursen, *Language and Interpretation in the Syriac Text of Ben Sira*, Leiden 2007, chapter 1.

מקרא	אונקלוס	יונתן במדבר	'יונתן'	ירושלמי*	פשיטתא
יהלום	סבהלום ¹¹	סבהלום	כדכודין	*כדכדינה ¹²	נקעתא ¹³
לשם	קנכירי	קנכירין	קנכירינן ¹⁴	זוזין ¹⁵	קנכינון ¹⁶
שבו	טרקיא ¹⁷	טרקין	טרקין ¹⁸	*בדלחא ¹⁹	קרכנא ²⁰
אחלמה	עין עגלא	עינעיגל	עין עיגל	*עין עגלה ²¹	עין עגלא
תרשיש	כרום ימא ²²	כרום ימא	כרום ימא רבא	כרום ימה רבה ²³	תרשיש
שהם	בורלא	בירלוות חלא	בירלוות חלא ²⁴	*ברוליין ²⁵	ברולא ²⁶
ישפה	פנתירי ²⁷	אפנטור	מרגניית ²⁸ אפנטורין	מרגליתה ²⁹	ישפה

1. **תרגום אונקלוס – Targum Onkelos:** Like the Targum of Onkelos, we also find in Targum Yonasan to Yechezkel (28:13) a list of all the stones, except for the third row. Similarly, in the Tosefta to that Targum. Below, we will note the minor differences between these sources.
2. **יונתן במדבר – Yonasan Bamidbar:** In Targum Yonasan on Bamidbar chapter 2 (verses 3, 10, 18, 25), there is a translation of the Choshen stones. While in the parshiyos of Tetzaveh and Pekudei his translation mostly follows the Yerushalmi, in Bamidbar it follows Onkelos. Since his wording is in between the two sources, it seems to reflect an intermediate stage between the Babylonian Targum and the Eretz Yisrael-based ones (Yonasan and Yerushalmi).
3. **ירושלמי – Yerushalmiya:** For the order of stones in Targum Yerushalmi according to our system, see Appendix B. Every stone whose order we've changed is marked with an asterisk. The names here are brought as found in MS Neofiti on Parshas Tetzaveh, and below we will note major differences between this and other versions of Targum Yerushalmi in manuscripts and print.
4. **ירקתא – Yarkesa:** Appears only in the manuscript of Pekudei.
5. **זרגא – Zarga:** The meaning of “Zarga” is unclear. It may be the result of two corruptions: $\tau < \iota$ (a common graphical error in Syriac), and $\lambda < \kappa$ (a phonetic shift). We find this root elsewhere in the Peshitta, which translates “chakhliili einayim mi'yayin” (Bereishis 49:12) as “zargan einohai min chamra,” indicating a meaning related to redness or radiance.
6. **אזמרגדין – Azmargadin:** In some manuscripts of Tetzaveh (also in Pekudei) it appears as “Azmargazin,” and so it is in the translation tradition; see there. Also in Targum Divrei HaYamim (I 29:2), there are versions where “puch” is translated this way: “Azmargazin.” Similarly in Machzor Vitry §287 (Nuremberg 1923, p. 313): “Nofech – we translate as Zmargazin.” In the Tosefta to Targum Yechezkel it appears as “Izmorad,” the same as

Targum Yonasan on the Choshen stones.

7. **אזמורד – Azmorad**: It seems this form of the name “Azmagadin” — lacking the gimel between the reish and the dalet — is later, and perhaps influenced by Arabic, where it’s also “Zamarad.”
8. **זמרגדין – Zimargadin**: In Yerushalmi MS Neofiti this is the translation of Achlamah.
9. **שבזיז – Shavziz**: In some European manuscripts, it appears as “Shavzin,” but from other sources it’s clearly an error where zayin and nun were switched. The identity of “Shavziz” is unknown, and many suggestions have been offered, none satisfying (e.g. the Aruch HaShalem suggests it’s a Persian word for greenish color). Because of this, the name “Shavziz” was replaced in other translations with terms like “Sapphirinon,” and in other translations of Tanach (Shemos 24:10; Yeshayahu 54:11; Yechezkel 1:26; 10:1), it is rendered simply “Even Tava” (precious stone). Only in the Writings (Iyov 28:6, 16; Shir HaShirim 5:14; Eicha 4:7) is sapphire translated as “Shavziz,” seemingly following Targum Onkelos for the Choshen stones, even though the meaning of the term was already unknown in the era of those Targumim.
10. **ספרינה – Saphrina**: “Samporina” in the Targum Keta’im (fragments), and “Sampolina” in the printed editions by mistake. The Aruch (entry “Kadkod”) writes that the Yerushalmi Targum for sapphire is “Saphrina,” and under “Sapphirinon” he says this is the Yerushalmi translation for sapphire in the Choshen and in “Livnas HaSapir” (Shemos 24:10).
11. **סבהלום – Savalum**: Completely unknown; no interpretations have been offered.
12. **כדכדינה – Kadkadina**: “Kadkadna” in the fragments; “Kadkudina” in the Aruch (entry Kadkod). In both it is the translation of Nofech.
13. **נקעתא – Nekaata**: Possibly “Onychion.” In the source preceding the Peshitta, “Yahalom” may have originally been translated as “Yashfeh,” and the translations were swapped so that “Yashfeh” would translate as “Yashfeh” (matching the Hebrew), and thus “Yahalom” was rendered “Nekaata.” We’ve already seen such switches in other sources — see also note 193.
14. **קנכירינן – Kankhirinon**: In Pekudei it’s “Kankhirin,” same as in Bamidbar, and this name is closer to the one in Onkelos. It seems to be a development from Onkelos toward the Peshitta: Kankhiri → Kankhirin → Kankhirinon → Kankhinon.
15. **זוזין – Zuzin**: In MS Neofiti (Tetzaveh and Pekudei) it says “Leshem Zuzin,” which requires explanation. Possibly “Leshem” wasn’t translated, and “Zuzin” is the translation of “Shvo,” not of “Leshem.”

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16. **קנכינון – Kankhinon**: See the note on Yonasan here — this name is intermediate between Onkelos [Kankhiri] and Yonasan [Kankhirinon].
17. **טרקיא – Tarkaia**: The Aruch (entry Bales) writes regarding the word “Tarkaya”: “And some say Tarkaya means brightness, and is the Targum of Leshem, Shvo, and Achlamah.” Also in the Complutensian Polyglot Bible (Spain, 1514), which is believed to be based on accurate manuscripts, see: L. D. Merino, *Targum Manuscripts and Critical Editions*, in *The Aramaic Bible*, Sheffield 1994, p. 77. Indeed, in Pekudei it says “Tarkaya,” and I found the same in Paris MS (Sefarad), Ebr. 78 — an Italian MS from the 14th century.
18. **טרקין – Tarkin**: In print, by mistake, it appears as “Arkin” in Tetzaveh.
19. **בדלחא – Badlacha**: In the Yerushalmi we have, this is the translation of Shoham — which is problematic, since the pasuk says, “like the appearance of bedolach and the stone of shoham,” indicating they are separate items.
20. **קרדנא – Karkadna**: Seems to primarily refer to a type of red garnet, as we see in the Peshitta for “On-Galyon,” where the Greek name “anthrax” (which is garnet — see entries for Barekes and Nofech) was translated as “Karkadna.” It is likely that this Syriac name derives from one of Pliny’s names for anthrax — “Karkadonios.” However, we’ve already noted that “Nofech” or “Barekes” are garnet, and not “Shvo.”
21. **עין עגלה – Ein Agla**: In the Yerushalmi we have (MS Neofiti and Targum fragments), this is the translation of Yahalom.
22. **כרום ימא – Krum Yama**: In the Tosefta to Targum Yechezkel it appears as “Krum Yama Rabba,” as in Targum Yonasan and Yerushalmi.
23. **כרום ימא רבא – Krum Yama Rabba**: Same in Targum Yonasan, but in the regular Yerushalmi Targum (the fragments), it follows Onkelos, without “Rabba.”
24. **בירליות חלא – Birliyos Chala**: “Birlas Chala” in Pekudei. The meaning of the word “Chala” is unclear, with many possible explanations — among them, “burla [that is] in sand,” but none are conclusive. Possibly influenced by the Yerushalmi translation “Badlacha.”
25. **בירולין – Birulin**: This is the translation of the stone in the Tosefta to Yechezkel and the London Polyglot. But in manuscript fragments it appears as “Birzalin.” Notably, in the Targum to Iyov (28:16), “with precious Shoham” is translated as “with precious Birulin.”
26. **ברולא – Berula**: Note that the name resembles the Onkelos translation — “Burla” — but the vav comes after the reish, as in the Yerushalmi translation — “Berulin.” This name is the Syriac substitute for “Berylion” from the Septuagint, carried over into the
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Syro-Hexapla as “Berula” (this appears in MS Ambrosianus on Yechezkel, and in other manuscripts of Tetzaveh and Pekudei as “Berull”).

27. **פנתירי – Pantiri**: So it appears in manuscripts considered accurate [Babylonian and Yemenite], though in most European manuscripts it is “Pantiri,” and in Targum Yonasan it is written with a tes. In Targum Yechezkel it’s “Pantirin,” and in the Tosefta there, “Apantir,” similar to Targum Yonasan — “Marganiyas Apanturin,” and like Targum Yonasan in Bamidbar — “Apantur.”
28. **מרגניית אפנטורין – Marganyas Apanturin**: In Pekudei, it’s “Marganis Apanturin”; it’s possible that this is a corruption of “Marganisa Panturin,” which later became “Apantur” in Bamidbar.
29. **מרגליתה – Margalita**: It seems this name developed across earlier Targumim, from Onkelos to Yonasan to Yerushalmi, like so: Pantiri > Apantur > Marganyas Apanturin > Margalita. Meaning that only in the final stage was the word “Pantur” dropped. [This is true only if we assume that the Yerushalmi Targum was influenced by a Targum prior to Yonasan, and not the reverse — that Yonasan was influenced by Yerushalmi. If so, what appears in Yonasan would be a blend of the two earlier Targumim: “Margalita” and “Pantiri,” from which he created the new form “Marganyas Apanturin.”] This translation also appears in *Shemos Rabbah* Midrash — “Margalitos,” and it likely originated from here. Another source linking “Yashfeh” with “Margalit” is the Peshitta to Yechezkel (28:13), which seemingly translates “Yashfeh” there as “Marganita” (unlike the other stones which it translated based on the Septuagint).