

HALACHIC AND HASHKAFIC ISSUES IN CONTEMPORARY SOCIETY

50 - TECHELET - PART 1 OU ISRAEL CENTER - SPRING 2017

A] TECHELET IN TANACH - ROYALTY AND PRIESTHOOD

1. (א) וַיְדַבֵּר ה' אֶל-מֹשֶׁה לֵאמֹר: (ב) דַּבֵּר אֶל-בְּנֵי יִשְׂרָאֵל וַיִּקְחוּ לִי תְרוּמָה מֵאֵת כָּל-אִישׁ אֲשֶׁר יִדְבְּנוּ לָבוֹ תִּקְחוּ אֶת-תְּרוּמָתִי: (ג) וְזֹאת תְּרוּמָה אֲשֶׁר תִּקְחוּ מֵאֵתָם זָהָב וְכֶסֶף וְנְחֹשֶׁת: (ד) וּתְכֵלֶת וְאַרְגָּמָן וְתוֹלַעַת שָׁנִי וְשֵׁשׁ וְעִזִּים:

שמות כה

Techelet first appears¹ in the Tanach as one of the raw materials for the construction of the Mishkan.

2. וְעָשִׂיתָ פָּרֹכֶת תְּכֵלֶת וְאַרְגָּמָן וְתוֹלַעַת שָׁנִי וְשֵׁשׁ מְשֻׁזָּר מֵעֵשֶׂה חֹשֶׁב וְעֵשֶׂה אֶתָּה כְּרִבִּים

שמות כו:לא

3. וְעָשִׂיתָ מָסָךְ לַפֶּתַח הָאֹהֶל תְּכֵלֶת וְאַרְגָּמָן וְתוֹלַעַת שָׁנִי וְשֵׁשׁ מְשֻׁזָּר מֵעֵשֶׂה רָקִים

שמות כו:לו

The curtains² dividing the different areas of the Mishkan were woven from a complex cloth containing Techelet.

4. וְעָשִׂי אֶת-הָאֶפֶד זָהָב תְּכֵלֶת וְאַרְגָּמָן וְתוֹלַעַת שָׁנִי וְשֵׁשׁ מְשֻׁזָּר מֵעֵשֶׂה חֹשֶׁב

שמות כח:

The Efod - apron - of the Cohen Gadol was made from the same mixture.

5. וְעָשִׂיתָ אֶת-מְעִיל הָאֶפֶד כָּלִיל תְּכֵלֶת

שמות כח:לא

The Me'il - cloak - of the Cohen Gadol was made from PURE Techelet.

6. (לו) וְעָשִׂיתָ צִיץ זָהָב טְהוֹר וּפִתִּיחַ עָלָיו פִּתּוּחֵי חוֹתָם קִדָּשׁ לַה': (לז) וְשָׂמַתְּ אֹתוֹ עַל-פִּתְיֵל תְּכֵלֶת וְהָיָה עַל-הַמְצַנְפֹּת אֶל-מִוֵּל פְּנֵי-הַמְצַנְפֹּת וְהָיָה:

שמות כח

The Tzitz - headplate - of the Cohen Gadol was held in place by a 'Ptil Techelet' - a thread of Techelet.

7. (ה) וּבָא אַהֲרֹן וּבָנָיו בְּנֹסֵעַ הַמַּחֲנֶה וְהוֹרְדוּ אֶת פָּרֹכֶת הַמָּסָךְ וְכִסּוּ-בָּהּ אֶת אַרְוֵן הָעֵדֻת: (ו) וְנָתַנוּ עָלָיו כְּסוּי עוֹר תַּחֲשׁ וּפָרָשׁוֹ בְּגַד-כָּלִיל תְּכֵלֶת מִלְמַעְלָה וְשָׂמוּ בְּדָיו: (ז) וְעַל שְׁלֹחַן הַפָּנִים יִפְרֹשׁוּ בְּגַד תְּכֵלֶת וְנָתַנוּ עָלָיו אֶת-הַקַּעֲרֹת וְאֶת-הַכַּפֹּת וְאֶת-הַמְנַקְלִית וְאֶת קִשּׁוֹת הַנְּסֻךְ וְלָחֵם הַתָּמִיד עָלָיו וְהָיָה: ... (ט) וְלִקְחוּ בְּגַד תְּכֵלֶת וְכִסּוּ אֶת-מִנְרַת הַמְּאֹר וְאֶת-נִרְתְּוֶיהָ וְאֶת-מִלְקָחֶיהָ וְאֶת-מַחֲוֹתֶיהָ וְאֶת כָּל-כְּלֵי שְׁמֹנֶה אֲשֶׁר יִשְׁתַּוְּלָה בָּהֶם: ... (יא) וְעַל מִזְבֵּחַ הַזָּהָב יִפְרֹשׁוּ בְּגַד תְּכֵלֶת וְכִסּוּ אֹתוֹ בְּמַכְסָה עוֹר תַּחֲשׁ וְשָׂמוּ אֶת-בְּדָיו: (יב) וְלִקְחוּ אֶת-כָּל-כְּלֵי הַשְּׂרָת אֲשֶׁר יִשְׁתַּוְּבָם בַּקִּדָּשׁ וְנָתַנוּ אֶל-בְּגַד תְּכֵלֶת וְכִסּוּ אוֹתָם בְּמַכְסָה עוֹר תַּחֲשׁ וְנָתַנוּ עַל-הַמּוֹט

במדבר ז

Most of the key vessels of the Mishkan were covered in cloths of Techelet before being transported.

1. Techelet actually appears 39 times in connection with the construction of the Mishkan and the clothing of the Cohanim.

2. One important difference was that the Parochet was made of wool whereas the Masach was made of gold.

8. חור כפרס ותכלת אחוז בחבלי-בוץ וארגמן על-גלילי כסף ועמודי שש מטות זהב וכסף על רצפת בהט-ושש וזר וסחרת

אסתר א:ו

Techelet is part of the royal drappings of the Persian court.

9. ומרדכי יצא מלפני המלך בלבוש מלכות תכלת וחור ועטרת זהב גדולה ותכריז בוץ וארגמן והעיר שושן צהלה ושמחה

אסתר ח:טו

Mordechai is lead from the court in royal apparel - including Techelet.

10. דבר אל-בני ישראל ואמרת אליהם ועשו להם ציצת על-פנפי בגדיהם לדורתם ונתנו על-ציצת הכנף פתיל תכלת

במדבר טו:לח

Having established that the Techelet is the mark of royalty and priesthood³, the Torah commands the Jewish people⁴ to wear a string of this Techelet on their clothes.

11. ואתם תהיו-לי ממלכת כהנים וגוי קדוש אלה הדברים אשר תדבר אל-בני ישראל

שמות יט:ו

The Jewish people are a nation of priests and royalty.

B] IDENTIFYING TECHELET - EXPLORING CHAZAL

B1] WHAT IS TECHELET?

12. תכלת האמורה בתורה בכל מקום היא הצמר הצבוע כפתוך שבכחול

רמב"ם ציצית ב:א

Techelet is a tread of wool dyed a certain blue color.

13. תכלת אין כשרה אלא מן החלזון. הביא שלא מן החלזון, פסולה.

תוספתא מנחות פרק ט הלכה טז

The Tosefta⁵ rules that Techelet must come from the Chilazon. Any other similar blue dye from other sources is invalid.

14. ת"ר: חלזון זהו - גופו דומה לים, וברייתו דומה לדג, ועולה אחד לשבעים שנה, ובדמו צובעין תכלת, לפיכך דמיו יקרים.

מנחות מד.

The Gemara⁶ quotes a Beraita which gives 5 criteria to identify the Chilazon: (i) its body looks like the sea; (ii) its shape (formation?) is like a fish/sea creature⁷; (iii) it appears once in 70 years⁸; (iv) with its blood/liquid one can die the Techelet; (v) it is thus very expensive.

15. תנו רבנן: הצד חלזון והפוצעו - אינו חייב אלא אחת, רבי יהודה אומר: חייב שתיים (רש"י הפוצעו - דוחקו זידיזו שילא דמו)

שבת עה.

Another Beraita speaks about trapping and cracking open or squeezing the Chilazon, perhaps implying that it has some kind of shell. Rashi understands that הפוצעו means squeezing the liquid out of the Chilazon.⁹

3. Some types of special clothes worn by the Cohanim, such a shaatnez - mixtures of wool and linen - were reserved only for the Cohanim in the Mikdash and not permitted to others. Fascinatingly, the ONLY situation in which shaatnez is halachically permitted is in the wearing of tzitzit - containing a blue woolen string of Techelet which could be placed on a linen garment. This is learnt from the juxtaposition of the mitzvah of tzitzit with the prohibition of shaatnez in Devarim 22:11-12.

4. The halacha ultimately rules that tzitzit is only obligatory for men. As for women wearing tzitzit, there are different opinions in the classic poskim. On a peshat level, the mitzvah to tie Techelet to our clothing appears to be speaking to all Jewish people - men and women.

5. 3C CE shortly after the Mishna.

6. It is not clear to what extent this gemara is aggadic. 'Once in 70 years' is apparently not literal. Are the other criteria? If it is aggadic, can we use it in the halachic process?

7. Dag is not necessarily a fish, but can be any sea creature (see Eliyahu Rabba - the commentary of the Vilna Gaon on Kelim 10:1)

8. In a parallel Beraita in Mesechet Tzitzit (1:10) the reference is to seven years. It also states that the Chilazon looks like the sky (not the sea).

9. Which could indicate that it has NO shell. However, in the case of the murex trunculus, first the shell must be cracked and then the gland on the snail squeezed.

16. דכמה דאית ביה נשמה - טפי ניחא ליה, כי היכי דליציל ציבעיה (רש"י - שדס החי טוב מדס המת)

שבת עה.

Chazal inform us that, in order for the Techelet to dye properly, the Chilazon must be alive when the 'blood' is removed.

17. השיב לו ר"ת דדס חלזון הראוי לצביעה מופקד פקיד ולא מיחייב על אותו הדם משום נטילת נשמה

תוספות שם ד"ה כי היכי דליציל ציבעיה

Tosafot explain that the 'blood' referred is not regular blood but a liquid secretion gathered on the animal in one place.

18. חלזון הזה כל מה שהוא גדיל נרתיקו גדיל עמו

פסיקתא דרב כהנא (מנדלבוים) פיסקא יא - ויהי בשלח

Chazal explain that, as the Chilazon grows, its shell/casing grows with it.

19. והתכלת האמורה בציצית צריך שתהיה צביעתה צביעה ידועה שעומדת ביופיה ולא תשתנה וכל שלא נצבע באותה צביעה פסול לציצית אף על פי שהוא כעין הרקיע ...

רמב"ם ציצית ב:א

A critical characteristic of Techelet is that the dye must be permanent. Other non-permanent dyes of an identical color¹⁰ are invalid.

B2] WHAT IS TECHELET NOT?

20. אני ה' אלהיכם אשר הוצאתי אתכם מארץ מצרים. מה ענין יציאת מצרים לענין ציצית לומר לך שאם יצבע אדם קלא אילן הוא מיני תכלת ויאמר תכלת הוא מי מודיע עלי בגלוי אומר לו הקדוש ברוך הוא אני ה' אלהיכם דעו מה עשיתי במצרים שהבחנתי בין טפה של בכור לטפה שאינה של בכור אם בין טפה לטפה הבחנתי בין תכלת לקלא אילן לא כל שכן.

פסיקתא זוטרתא (לקח טוב) במדבר פרשת שלח לך [המתחיל בדף קד עמוד ב]

There was a fake Techelet called Kala Ilan which was impossible to distinguish from real techelet made from a chilazon. Only Divine the wisdom could determine the real thing!

21. ת"ר: תכלת אין לה בדיקה, ואין נקחית אלא מן המומחה ותכלת אין לה בדיקה!! והא רב יצחק בריה דרב יהודה בדיק ליה, (סי' בגשם) מייתי מגביא גילא¹¹ ומיא דשבלילתא¹² ומימי רגלים בן ארבעים יום¹³, ותרי לה בגווייהו מאורתא ועד לצפרא, איפרד חזותיה - פסולה, לא איפרד חזותיה - כשרה

מנחות מב:

The Gemara discusses whether one can test between real and fake techelet. It first suggests that there is no test which will work. It then quotes one of the Amoraim who developed a chemical test, soaking the dyed material in alum, fenugreek sap and urine. If the dye faded it was fake.

- Kala Ilan is universally identified¹⁴ as Indigo, which produces a clear blue.

B3] WHERE IS TECHELET FOUND/MADE?

22. ומדלות הארץ השאיר נבוצראדן רב־טבחים לכרמים וליגבים

ירמיהו נבטו

Nevuzadran left the poorest people in Eretz Yisrael after the exile to Bavel. They worked as 'kormim' and 'yogvim'.

10. Apologies to British readers for the American spelling!

11. Liquid alum (Rashi) or straw (Rambam).

12. Fenugreek sap.

13. Either of a 40-day old child or urine aged for 40 days.

14. The Sefer Aruch defines Kala Ilan as אינדקין.

23. יוגבים - אלו צידי חלזון, מסולמות של צור¹⁵ ועד חיפה

שבת כו.

The 'yogvim' were the trappers of the Chilazon who worked on the coast from Tzur down to Haifa.

24. אמר זבולון לפני הקדוש ברוך הוא: רבונו של עולם! לאחיי נתת להם שדות וכרמים ולי נתת הרים וגבעות. לאחיי נתת להם ארצות - ולי נתת ימים ונהרות. אמר לו: כולן צריכין לך על ידי חלזון, שנאמר (דברים לג:ט) [עמים הר' יקראו שם יזבתו זבחי צדק פי שפע ימים ייקחו] ושפני טמוני חול. תני רב יוסף, שפני - זה חלזון

מגילה ו.

Chazal explain that the tribe of Zevulun is blessed with the Chilazon, which lives buried in the sands off its shores.

B4] WHAT COLOR IS TECHELET?

- The Septuagint translates Techelet as 'iakinthos' - sapphire blue.

25. תכלת - נצט ירוק של חלזון

רש"י במדבר טו:לח

Rashi in Chumash says that Techelet is 'yarok'. Even though in modern Hebrew 'yarok' means green, in Rabbinic Hebrew it is a much more generic color¹⁶, which certainly include blues.

26. למה הזהירה התורה על התכלת? מפני שהתכלת דומה לספיר, והלוחות היו שלספיר. לומר לך, שכל זמן שישראל מסתכלין בתכלת הזאת, הן נזכרין במה שכת' בלוחות, ומקיימין אותן. וכן הוא אומ' והיה לכם לציצית וראיתם אותו וזכרתם

משנת רבי אליעזר פרשה יד [המתחיל בעמוד 362]

Chazal compare the Techelet to the color of sapphire - a type of blue.

27. היה ר"מ אומר: מה נשתנה תכלת מכל מיני צבעונין? מפני שהתכלת דומה לים, וים דומה לרקיע, ורקיע דומה לכסא הכבוד, שנאמר: (שמות כד:י) ויקראו את אלהי ישראל ותחת רגליו כמעשה לבנת הספיר וכעצם השמים לטהר:

סוטה יז.

Chazal also compare the Techelet to the color of the sea¹⁷ and the sky¹⁸ - also blues.

28. שכל המקיים מצות ציצית כאלו מקבל פני שכינה מגיד שהתכלת דומה לים והים דומה לעשבים ועשבים דומין לרקיע ורקיע דומה לכסא הכבוד והכסא דומה לספיר

תלמוד ירושלמי (וילנא) מסכת ברכות פרק א

In this version of the medrash brought in the Yerushalmi Chazal state that the Techelet is like the sea, which is like¹⁹ the grass!²⁰

29. מאימתי קורין את שמע בשחרית? משיכיר בין תכלת ללבן רבי אליעזר אומר בין תכלת לכרתי (תפארת ישראל - גרין זנשף דומה לזלויס)

משנה ברכות פרק א משנה ב

The Mishna describes the beginning of the time for Kriyat Shema in the mornings and brings two views - when one can distinguish between (i) Techelet and white; (ii) Techelet and 'karti' - a green color.

15. The Ladder of Tyre is a steep chalky headland south of Tzur and just north of Rosh HaNikra - the heartland of the ancient Phoenicians.

16. See Tosafot in Nidda 19b on different meanings of 'yarok' in different halachic contexts.

17. The sea is many different colors - ranging from blues and greens to greys and browns!

18. Josephus in Antiquities Book 3 Chapter 6:4 (132) writes about the curtains of the Mishkan: 'great was the surprise of those who viewed these curtains at a distance, for they seemed not at all to differ from the color of the sky'. However, the sky is also many different colors!

19. The Kli Yakar on Bamidbar 16:38 stresses that the key word is דיכמה - that these colors are similar to each other but not identical. As such, it is difficult to learn from here precise colors.

20. Note that the Vilna Gaon removes this part of the text which compares it to grass.

30. תכלת - ירוק הוא, וקרוב ללצבע כרתי שקורין פורי"ש

רש"י ברכות ט:

On the issue of the difference between 'techelet' and 'karti', Rashi says that Techelet is 'yarok' and close in color to 'karti', which he translates into Old French as poireaux - leeks. So may Techelet is a greeny-blue.

31. תכלת - ירוק הוא, ומי שפניו ירוקים חולה הוא

רש"י ברכות נו:

Here, Rashi describes Techelet as the greenish color of a person's face when they are sick!

32. (ד) ותכלת חמר יפת, שהוא כדמות שחרות, כי הוא תכלית כל הצבעים ואנו נסמוך על רז"ל שאמרו שהוא ירוק

אבן עזרא שמות כה:ד

Ibn Ezra quotes a Karaite commentator that Techelet should be very dark since it is the 'tachlit' of the colors when mixed together. But then says that we rely on the tradition of Chazal that it is 'yarok'.

33. תכל - פתיל תכלת ... והוא העין שקורין בלעז בלב [blav] אזורו אולטר'ו מארי'ן [azzurro ultra marino]

ספר שרשים של הרד"ק

The Redak rules that Techelet is 'azure ultra-marine'

34. ... חוטי תכלת (היממעלבוליא)

תפארת ישראל כללי בגדי קודש של כהונה

Tiferet Yisrael (19C, Germany) translates the color of Techelet as 'Himmelblau' - sky blue.²¹ But what type of sky?

35. תכלת - 'אסמאנגון' (רז קאפח - כלצבע השמים צבהירותם שהם תכולים מאוד ונוטים לשחרות)

פ' רב סעדיה גאון שמות כה:ד

Rav Saadia Gaon²² describes the color of Techelet as bright sky-blue with a tendency towards darkness.

36. תכלת האמורה בתורה בכל מקום היא הצמר הצבוע כפתוך²³ שבכחול, וזו היא דמות הרקיע הנראית לעין השמש בטהרו

של רקיע.

רמב"ם ציצית פרק ב הלכה א

Rambam rules in Hilchot Tzitzit²⁴ that Techelet is the blue of the sky at the height of the day.²⁵

37. היתה כולה תכלת עושה לבן שלה משאר צבעונין חוץ מן השחור מפני שהוא נראה כתכלת

רמב"ם ציצית ב:ח

However elsewhere the Rambam indicates that the Techelet color is much darker and closer to black.²⁶

38. פתיל תכלת - על שם שכול צכורות. תרגומו של שכול תכלא. ומכתם היתה צלילה וכן לצבע התכלת דומה ללצבע רקיע המשחיר לעת

ערב.

רש"י במדבר טו:מא

Rashi²⁷ also says in the name of Moshe Hadarshan that the color of Techelet is a darker²⁸ hue - of the sky towards evening.

21. The Tiferet Yisrael also brings the opinion of Gezenius (19C German orientalist) who says that Techelet is 'purple-blue' (dunkelblau) but rejects this.

22. As explained by Rav Kapach (Mosad HaRav edition p91 note 2).

23. Patuach is translated variously as 'light' or 'mixed'.

24. He rules similarly in Hilchot Klei HaMikdash (8:13).

25. The Chizkuni (Shemot 24:10) and Rabbeinu Bachya (Shemot 28:6) also write that Techelet is the color of a clear blue sky.

26. In Hilchot Tzitzit the Rambam writes that the blood of the Chilazon is 'black like ink'. Many of the mefarshim ask where the Rambam knows this from, since it does not appear anywhere in Chazal. Rav Herzog suggests that the Rambam may have known this from the scientific sources on the dyeing process. It also sounds like he is talking about the secretion of the Chilazon before the dyeing process - see Igrot Moshe YD 2:133.

27. For a heated academic exchange on the color of Techelet and Rashi's position, see the various articles at http://tekhelet.com/author_article/sterman-dr-baruch/

28. The Zohar (תיקוני זוהר תקינת עשרין וחד ועשרין מב:) also describes the Techelet as חשוך.

- Ultimately, the modern poskim who have dealt with these issues - the Tiferet Yisrael, the Radzihner Rebbe and Rav Herzog agree that the Techelet should be sky-blue.²⁹
- The Radvaz³⁰ also writes that, as in all colors, Techelet is a range of blues, all of which are acceptable.

B5] OTHER CHARACTERISTICS

According to Chazal, the Chilazon³¹ also has the following additions properties:

- It was used to treat hemorrhoids (Avoda Zara 28b).
- It had a hook-like part to its shape (Mishna Kelim 12:1).
- It has 'snake-like' extensions (Bechorot 38a).

C] WHY AND WHEN DID TECHELET DISAPPEAR?

39. אמר ליה אביי לרב שמואל בר רב יהודה: הא תכלתא היכי צבעיתו לה? אמר ליה: מייתנין דם חלזון וסמנין ורמינן להו ביורה [ומרתחנין ליה], ושקלינא פורתא בביעתא וטעמינן להו באודרא, ושדינן ליה לההוא ביעתא וקלינן ליה לאודרא

מנחות מב:

Techelet is mentioned hundreds of times by Chazal and was clearly available to them. In this source Abaye (4C, Bavel) is asking Rav Shmuel b. R. Yehuda (who travelled back and forth between Bavel and Eretz Yisrael) how Techelet is dyed.

40. מר ממשכי אייתי תכלתא בשני רב אחאי

מנחות מג.

Techelet was clearly still in use throughout the time of the Gemara (which was completed in around 550 CE). In this source, Mar from Moshke brought Techelet to Rav Achai. These Amoraim lived at the very end of the Talmudic period and this account would date from shortly thereafter - in the period of the Rabbanan Savorai (late 6C).

41. מצוה להביא לבן ותכלת ויעשה. אימתי? כשהוא תכלת, ועכשיו אין לנו אלא לבן, שהתכלת נגנו³²

מדרש תנחומא (בובר) פרשת שלח

The first source³³ to indicate that Techelet was no longer available is in the Midrash Tanchuma. Its dating is unclear but probably dates back to around 750 CE. By that time the Techelet was 'nignaz'.³⁴

42. משנה. התכלת אינה מעכבת את הלבן, והלבן אינו מעכב את התכלת

מנחות לח.

Already by the time of the Mishna (2C), Chazal ruled that the Techelet was not essential to the mitzvah of tzitzit. White tzitzit alone are valid. Effectively, from that time on, it was no longer required for people to be 'moser nefesh'³⁵ to make and use techelet. As such it is not surprising that its use dwindled.

There are different theories about why the techelet fell out of use:-

- Once the use of Royal Blue was severely restricted by the Byzantine authorities³⁶ and the Mishna ruled that it was not essential, it gradually fell out of use and the Jewish dye industry collapsed.³⁷

29. This was one of the issues which delayed the modern revival of the murex trunculus as the main candidate for Techelet. Snails produce PURPLE and not blue! See Part 2.

30. Shu't Radvaz 4:48.

31. It must be noted that according to some mefarshim the word 'chilazon' is used to describe different types of snail and not only the creature used to make Techelet. See Yad Rema on Sanhedrin 91. As such it may be that the 'Techelet Chilazon' does not need to satisfy all these criteria. Nevertheless, those gemarot (eg in Menachot) which specifically deal with the Techelet are clearly discussing the Techelet Chilazon and any candidate would have to satisfy those criteria.

32. What is the implication of the word נגנו? Does it mean that we simply lost the ability to make it, implying that, if we could again find it, we would be obligated to use it. Or, does it imply that it was purposely (or by Divine Hashgacha) set aside not to be used. If the latter (which does seem to be implied by 'nignaz') are we allowed to reintroduce it today? Even if we take the second approach, are we able to use a Midrashic source such as this one to decide in halacha?

33. Actually, there is an earlier Midrash in the Sifrei - Vezot Haberacha Piska 354 - which refers to the Techelet being hidden away - לבא - Techelet WAS still available after this Medrash (3C) and it may be talking about the guarding of dye-production by the Romans. See <http://tekhelet.com/Audio/Sterman-Nignaz.mp3>

34. There is no mention of Techelet in the Sheiltot of Rav Achai Gaon - c.760 CE.

35. The Byzantines severely restricted the use of Royal Blue and Tyrian Purple, even on pain of death - see below.

36. See below on Techelet in the Ancient world. The Gemara in Sanhedrin 12a relates a story of two students who were caught by the Romans smuggling Techelet and miraculously escaped death!

37. R. Yehoshua Trunk in Shut Yeshuot Malko 1:3 estimated that the Techelet ended at the end of the time of the the Amoraim, around 500 CE.

- In 628 CE there was a massive Christian massacre of the Jewish communities in Eretz Yisrael which forced much of the community underground and will have killed many of the Jewish artisans.³⁸
- In 639 CE Eretz Yisrael was invaded by the Arabs resulting in the gradual destruction of the imperial and Jewish dye industry.³⁹

D] DYEING IN THE ANCIENT WORLD

- Wool dyeing using snails was known to the Minoans⁴⁰ as early as 1750 BCE.
- In the Tel Al Amarna Letters from the 14C BCE there is mentioned of *takhilti* and *argamannu* in cuneiform in a catalogue of a wedding dowry.

Tyrian Purple⁴¹

- Associated by many with Argaman.
- In use by the Phoenicians⁴² as early as 1500 BCE.
- Worth its weight in silver in the ancient world.
- Tightly regulated in the Byzantine world - only emperors and those of high birth were allowed to wear it, even on pain on death!⁴³
- Porphyrogenetos - 'born in the purple'.
- Made from a mucous secretion from the hypobranchial gland of one of several species of medium-sized predatory sea snails that are found in the eastern Mediterranean Sea.⁴⁴



Tyrian coin 300 CE depicting Melkarth's dog discovering the murex

Royal blue

- Associated by many with Techelet.
- Also made by the Phoenicians.
- Sometimes referred to as 'hyacinth purple'⁴⁵, which was made from a closely related species of marine snail - *Hexaplex trunculus*, also known by the older name *Murex trunculus*.
- The last known classical purple/blue dyeing industry closed with the sack of Constantinople in 1453.



La Découverte de la Pourpre (Peter Paul Ruben, ca. 1636)⁴⁶

- It is therefore undisputed that the murex snails were used in the ancient world for dyeing blue and purple. The questions for us are:
 - Is this indeed the techelet and the argaman?
 - How sure can we be?
 - How sure do we need to be in order to use the murex trunculus dye on our tzitzit?
 - What are the up- and down-sides?

ly'H we will examine this in Part 2.

38. Suggested by R. Chaim E. Twerski in an article *Identifying the Chilazon* in The Journal of Halacha and Contemporary Society Vol. XXXIV p78, especially note 4.

39. Proposed by the Radzhiner Rebbe in the introduction to his sefer *Ptil Techelet* and also by R. Isaac Herzog in the *Royal Purple and Biblical Blue*, p 112. The Radzhiner (*Sefunei Temuni Hol* p.10) argues that some use of Techelet continued during the Geonic period as they discuss its laws and generally do not discuss theoretical issues. He suggests that this may have happened in the time of the Behag (c.750).

40. For more information on argaman and techelet in the ancient world, see *The Rarest Blue*, Dr Baruch Serman, Chapter 2.

41. From Tyre (Tzur) on the Mediterranean and now on the Lebanese coast.

42. The word 'Phoenicia' means 'land of the purple'.

43. Julius and Augustus Caesar restricted the use of the dye for the governing classes and Nero (d. 68CE) issued a decree giving the emperor exclusive rights to wear blue and purple. In 383 CE, an edict by Gratian, Valentinian and Theodosius made the manufacture of higher-quality purple and blue a state monopoly. Justinian declared the death penalty on any commoners dealing in these dyes.

44. From https://en.wikipedia.org/wiki/Tyrian_purple, which continues, 'these are the marine gastropods *Bolinus brandaris* the spiny dyemurex, (originally known as *Murex brandaris* (Linnaeus, 1758)), the banded dye-murex *Hexaplex trunculus*, the rock-shell *Stramonita haemastoma* and less commonly a number of other species such as *Bolinus comutus*. The dye is an organic compound of bromine (i.e., an organobromine compound), a class of compounds often found in algae and in some other sea life, but much more rarely found in the biology of land animals.'

45. In the Septuagint, Techelet is translated into Greek as *hyakinthos* - 'hyacinth'.

46. The Greek myth was that Hercules was walking on the shore near the Phoenician city Tyre courting a nymph, when his dog ran out and started consuming a rotten murex which was lying on the beach. The dog's muzzle became stained a beautiful crimson purple, and the nymph demanded a robe of the same color as a gift from Hercules.