

Site near Haifa was Phoenician factory for producing Biblical blue dye

Speak to B'nei Yisrael and instruct them to make for themselves fringes on the corners of their garments throughout the ages; let them attach a cord of blue to the fringe at each corner.



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A recently published article solved a mystery that has been puzzling researchers for 50 years. The research now suggests that an isolated site north of Haifa was the source of the precious indigo dye used in the Temple and was the product of cooperation between the Israelites and Phoenicians.

The article, titled “[Between Israel and Phoenicia: The Iron IIA–B Fortified Purple-dye Production Centre at Tel Shiqmona](#),” was published earlier this month in the peer-reviewed Journal of the Institute of Archaeology of Tel Aviv University. The ancient Phoenician archaeological site on the coast near Haifa was first excavated about fifty years ago. Researchers discovered artifacts dating back to the Late Bronze Age (11th Century BCE). The site is the only location on the Mediterranean that produced *techelet* dye from Murex snails,

and the rocky reefs adjacent to Tel Shikmona were the ideal habitat for the snails.

The dye was highly prized in the ancient world. The purple dye is often referred to as “Tyrian Purple” because it is thought to have originated in the Phoenician seaside city of Tyre, about 30 miles north of Haifa in modern-day Lebanon. Its production was one of the major industries for the Phoenicians.

“This color of purple never fades, and the technology that enables the dyeing of fibers was probably invented in the Levant, though people usually ascribe it to Lebanese Phoenicians,” said Prof. Ayelet Gilboa of the University of Haifa, who led the study with Dr. Golan Shalvi, a research fellow in the Zinman Institute of Archaeology in the University of Haifa.

“This is the best place along the Israeli coast with the best habitat for the snails that produce the dye,” said Gilboa. “Here, the Carmel Ridge continues into the sea, so the surface of the rocks underwater is quite high, and it’s very easy to access the shells.”

“This place was very active, and very productive,” Gilboa added. “Shikmona is the only place that we know where it was not a village producing small amounts of dye, but the whole site was a factory.”

Techelet is a blue dye highly prized by ancient Mediterranean civilizations and mentioned 49 times in the Hebrew Bible. It was used in the clothing of the High Priest, the tapestries in the Tabernacle, and in tzitzit (ritual fringes worn by Jewish men).

“This color was one of the most commercially expensive things available and really created a lot of wealth,” Shalvi explained. “This is also a color that has a historical and holy meaning for the Jews.”

Researchers found remains of a small settlement first established in the Bronze Age, around 1500 BCE. The small settlement (less than an acre) was distant from agricultural lands or any ports. Initial excavations, carried out in the 1960s and 1970s by Dr. Yosef

Elgavish, discovered large ceramic vats that were dyed purple and a large amount of Phoenician pottery.

“It was used for the *parochet* [curtain of the Holy Ark in the Temple], and the elite were wearing clothing that incorporated purple fibers, that included the high priests, the king, and really anyone who had money,” said Gilboa.

The site began to operate as a textile factory in the Late Bronze Age in the 11th century BCE and continued to operate until the 6th century BCE. This meant it was in operation throughout the period of the Judges and even into the period of the Kingdoms of Judea and Israel.

The professors suggested that the Shikmona factory provided the actual dye used in the Temple in Jerusalem.

“The Tel Shikmona factory supplied purple products, mainly purple-dyed thread, to Cyprus and Lebanon and also to socio-political elites and temples in the cities of Judea, and of course to rich residents of the Kingdom of Israel,” the professors said. “Because it was the most active purple production factory and the [closest to Jerusalem](#) – and in fact the only one known to us from these periods – it was most likely the prestigious supplier of dyes for the Temple.”

The dye can be collected by crushing the snails, or by laboriously milking the snails and collecting the excretion. 12,000 snails might yield 1.4 grams of dye, which is only enough to color the trim of a single garment. Because of this, this Royal Blue or Royal Purple dye was very expensive, making it an almost exclusive sign of kingship and royalty. Purple dye was considered a color of prestige during the Roman period so much so that at certain points in time the common masses were forbidden from wearing the color. Interestingly, the color of this dye becomes more vibrant when left in the sun, and it is possible that different versions of the color can be made by making the dye in the sun or in the shade.

The researchers now believe that during the Late Iron IIA, the Kingdom of Israel replaced a small Phoenician village with a fortified

enclosure in order to control and institutionalize the production of the dye. It is believed this took place under the ruling dynasty of the Kingdom of Samaria founded by King Omri around the mid-9th century BCE. Around the time Omri's son, the biblical King Ahab, ascended the throne, the dye factory was destroyed and rebuilt.

The rebuilt walls were in the style of other Israelite structures from that period but the pottery was in the Phoenician style, leading researchers to hypothesize that the site was under Israelite rule but Phoenicians still carried out the day-to-day labor.

“You really need to be a person who understands the sea, and this is knowledge that is passed through the generations, much earlier than Israelites came into power,” said Shalvi. “Israelites are people of the interior, of the highlands, not of the sea.”

Due to the renewed research, a new excavation has begun at Tel Shiqmona, which has just been completed, and cooperation has begun between many parties who are now working together to restore the site and make it accessible to the public. The Nature and Parks Authority, the Zinman Institute of Archeology at the University of Haifa, the Institute for the Study of Seas and Lakes, and the Antiquities Authority are all involved in this large-scale project.

Rabbi Isaac Luria, a 16th century mystic taught that the *mitzvah* (Torah commandment) of putting a thread of blue in tzitzit will return coincidentally with the Messiah.

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