

WHAT DID THE RAMBAM MEAN WHEN HE CALLED TECHEILES “SHACHOR” – BLACK?

By: Rafi Hecht

If you’ve ever opened the Mishneh Torah and turned to Hilchos Tzitzis, you might have paused when Rambam describes the Techeiles color as shachor, black.

We’ve been taught that Techeiles is blue, be it sky blue, sea blue, maybe even royal blue, depending who you ask. So why would one of Judaism’s greatest halachic minds describe it as black?

To unpack this, we need to rewind to the 19th century, then back through Aristotle, the Geonim, Rabbinic Hebrew, and classical Arabic. Like many good Torah conversations, this one features Rambam, a maskil with an agenda, and a future Chief Rabbi who brought the receipts.

The Straw Man from the 1800s: Ludwig Lewysohn

In 1858, Ludwig Lewysohn, a German-Jewish maskil, published *Die Zoologie des Talmuds*. One of his goals was to portray the Rambam’s halachic descriptions as outdated or scientifically flawed. When Rambam described Techeiles as “black like ink,” Lewysohn argued that the source must have been the cuttlefish - not the Murex snail - pointing to the ink sac as evidence.

Lewysohn didn’t stop there. In discussing Greek terminology, he latched onto the Septuagint’s use of the word Oporophyron (ὀλοπορφύρον) to describe dyed garments. Although Rambam never used this term, Lewysohn inserted it into the conversation and mockingly twisted “olos” to mean “juice,” suggesting the Greeks were describing “all-squid juice.” But that’s a distortion. In Greek, ὅλος means “whole,” and porphyron refers to fabric dyed with pigment from the purpura (Murex) snail, which is a source of both purple and blue dyes depending on the exposure to sunlight and oxygen during processing.

This was not an honest reading of Rambam, but a rhetorical sleight of hand. Lewysohn constructed a straw man, misrepresenting the Rambam’s meaning, then mocking the distortion he’d created. But as we’ll see, Rambam’s use of shachor was grounded in accurate chemistry and linguistic context, from Aristotle’s zoology to the semantics of Rabbinic Hebrew and Judeo-Arabic.

Rabbi Herzog’s Response: Don’t Underestimate the Rambam

Decades later, future Chief Rabbi Yitzchak Isaac HaLevi Herzog - author of the definitive dissertation on Techeiles-pushed back. “When, however, [Lewysohn] ventured to suggest the source of Maimonides’ ‘error,’” he wrote, “he

must have forgotten that he was dealing with one of the deepest and most careful thinkers that ever lived.” (The Royal Purple and the Biblical Blue, p. 92.)

Herzog went deeper. Citing a treatise by Samuel ben Hofni Gaon, he noted that Rambam frequently drew from Greek sources. In *History of Animals* (Book V, Ch. XIII:3), Aristotle describes purpura sea snails: “Most of them contain a black pigment; in others it is red, and the quantity of it small.”

Aristotle’s purpura refers to mollusks like Murex trunculus, a leading chilazon candidate. He’s not describing the final dyed wool, but the raw pigment—dark, ink-like, which then oxidizes into blue or purple.

Rambam’s use of shachor reflects this. He’s describing the starting substance, not the final hue. Not poetic exaggeration—just accurate, pre-oxidation chemistry.

A Shared Language: Hebrew, Arabic, and “Black”

Rambam lived in the Arabic-speaking world—Spain, Morocco, then Egypt. His halachic and philosophical writings were in Judeo-Arabic: Arabic grammar, Hebrew script, Torah content. His audience spoke Arabic. His thinking reflected it.

In both Rabbinic Hebrew and classical Arabic, the word for black—shachor in Hebrew, aswad in Arabic—covered more than one shade. It wasn’t only “black” as in coal. It often meant any dark, saturated tone—indigo, navy, deep violet.

Consider Surah Al-Baqarah (2:187) in the Qur’an:

“...eat and drink until the white thread becomes distinct from the black thread of dawn.”

(ḥattā yatabayyana lakumu al-khayṭu al-abyaḍ mina al-khayṭi al-aswad mina al-fajr)

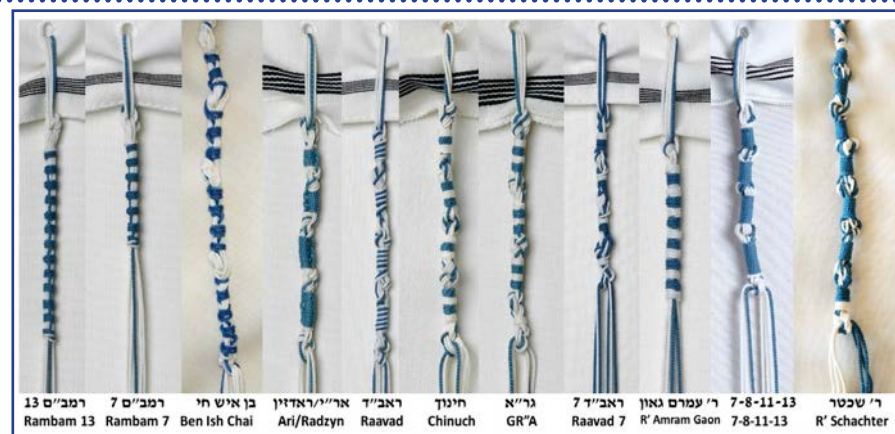
The metaphor is nearly identical to Berachos: white and black threads as visual cues for twilight. Arabic commentators explain aswad here as the dark blue of pre-dawn—not pitch black, but just... very dark.

Another case: Surah Aal-E-Imran (3:106):

“On the Day [some] faces will turn white, and [some] faces will turn black.”

(Yawma taswaddu wujūhun wa tabyaddu wujūh...)

It’s metaphorical—white for clarity or favor, black for confusion or disgrace. Again, aswad implies shade and darkness,



not literal soot.

So when Rambam called Techeiles or the chilazon’s blood shachor, he may have been using a linguistic register that spanned Hebrew and Arabic. “Black” wasn’t fixed. It was a shade range, understood by his readers. Whether or not Rambam consciously tailored his descriptions, his word choice aligned with how dark colors were described in both cultures.

But Isn’t Techeiles Blue?

Yes—and so is Kala Ilan, the plant-based indigo that imitates it. Yet Rambam calls Kala Ilan shachor too. That’s no slip.

It shows shachor, in Rambam’s language, didn’t mean jet black. It meant dark—inky, saturated, dense. Think navy, indigo, bluish-black.

That fits Rabbinic Hebrew. In Berachos 1:2, we read:

“מאימתי קורין את שמע בשחרית? משכיבין בין תכלת ללבן.”

From when does one recite Shema? From when one can distinguish between Techeiles and white.

The key is contrast. Techeiles is dark enough to stand apart from white at dawn—not because it’s black, but because it’s deeply shaded. And this usage extends into Islamic sources too.

Dark Like Ink—Not Black Like a Hat

Murex dye starts out nearly black—viscous and murky. Only after exposure to air and sunlight does it turn into Techeiles blue. Rambam wasn’t off. He was describing the material in its live, undyed form.

Kesef Mishneh echoes this: Rambam calling both Kala Ilan and Techeiles shachor wasn’t an error. It reflected the terminology available in the 12th century. The working material looked dark, even if the final color wasn’t.

The Bigger Picture: Language, Color, and Meaning

Modern language prefers precision. Something’s black or it’s blue. Ancient tongues were broader.

Linguists Berlin and Kay found that early color systems used only two terms: dark (black) and light (white). Then came red, then green or yellow. Blue often came last.

Biblical Hebrew reflects this. The core color terms were:

שָׁחֹר (shachor – dark),

לָבָן (lavan – light),

אָדָם (adom – red),

יָרוֹק (yarok – which covered green, yellow, and sometimes blue).

So shachor wasn’t just coal-black—it spanned dark hues: greens, blues, grays. It described shade, not strict tone.

This frames Rambam’s phrasing well. When he called the raw chilazon secretion shachor, he was referring to its inky appearance—what it looked like before oxidation transformed it into holy blue.

Rambam’s use of shachor wasn’t a mistake. It was exact—for his time, his readers, and his linguistic world. He spoke with nuance in a system that grouped colors by tone, not tint.

So yes—Techeiles is blue. But the substance it comes from is dark, inky, shachor.

And Rambam got it right.

Rafi Hecht holds degrees from Lander College for Men and Stevens Institute of Technology. He has written extensively on Techeiles, runs BlueFringes.com, and has contributed to Ptil Tekhelet’s digital efforts. In 2021, he led the Porphyrology.com project restoring Rabbi Herzog’s doctorate, earning a letter of thanks from President Isaac Herzog. He can be reached at bluefringes613@gmail.com.