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The Pentateuchal Dietary Proscription against Finless and Scaleless Aquatic Species in Light of Ancient Fish Remains

YONATAN ADLER^a AND OMRI LERNAU^b

^aAriel University, ^bHaifa University

The origins and early history of the pentateuchal prohibition against eating finless and scaleless aquatic species (Lev 11:9–12; Deut 14:9–10) has yet to merit a detailed investigation. The present study is an initiatory attempt to attend to this lacuna by analysing 56 zooarchaeological assemblages of fish remains from 30 sites throughout the southern Levant from the Late Bronze Age through to the end of the Byzantine period (ca. 1550 BCE to 640 CE). A central conclusion of the study is that consumption of scaleless fish—especially catfish—was not uncommon at Judean sites throughout the Iron Age and Persian periods. Unlike the pentateuchal prohibitions against eating pork, the ban against finless and scaleless aquatic species apparently deviated from longstanding Judean dietary habits. The pentateuchal writers appear to have legislated this dietary restriction despite the lack of an old and widespread dietary tradition at its root. This conclusion should encourage us to rethink commonly held assumptions that other pentateuchal dietary proscriptions emerged out of earlier dietary ‘taboos’.

KEYWORDS Fish, Pentateuch, Dietary laws, Bible, Judaism, Taboo

Whereas the pentateuchal prohibition against eating pork (Lev 11:7; Deut 11:8) has garnered copious scholarly attention, the proscription against eating finless and scaleless aquatic species that appears in the verses immediately afterward (Lev 11:9–12; Deut 14:9–10) has merited significantly less consideration. The present study is a first step in an endeavour to conduct a detailed investigation into the origins and early history of this proscription. We have chosen to focus on one particular line of evidence for the genesis and early evolution of this prohibition—archaeozoological remains of scaleless fish consumed by different identity groups in the southern Levant between the Late Bronze Age and the Byzantine period.

The pentateuchal prohibition

The earliest textual reference to a proscription against the consumption of aquatic species that lack fins or scales is found in a set of passages repeated twice in the Pentateuch, in both instances immediately following a prohibition against the consumption of pork:

Leviticus 11: 9–12

⁹ את זה תאכלו מכל אשר במים כל אשר
לו סנפיר וקשקשת

במים בימים ובנחלים אתם

תאכלו

¹⁰ וכל אשר אין לו סנפיר וקשקשת

בימים ובנחלים מכל שרץ המים ומכל נפש החיה אשר
במים שקץ הם לכם ¹¹ ושקץ יהיו לכם מבשרם

לא תאכלו

ואת נבלתם תשקצו ¹² כל אשר אין לו סנפיר וקשקשת במים

שקץ

הוא לכם

⁹ **These you may eat, of all that are in the waters. Everything in the waters that has fins and scales,**

whether in the seas or in the streams—such
you may eat.

¹⁰ **And whatever does not have fins and scales**
in the seas or the streams, of the swarming
creatures in the waters and among all the other
living creatures that are in the waters—they are
detestable to you ¹¹ and detestable they shall
remain. Of their flesh

you shall not eat,
and their carcasses you shall regard as detestable

¹² Everything in the waters that does not have
fins and scales

is detestable

for you.

Deuteronomy 14: 9–10

⁹ את זה תאכלו מכל אשר במים כל אשר
לו סנפיר וקשקשת

תאכלו

¹⁰ וכל אשר אין לו סנפיר וקשקשת

לא תאכלו

שטא

הוא לכם

⁹ **These you may eat, of all that are in the waters. Everything in the waters that has fins and scales,**

you may eat.

¹⁰ **And whatever does not have fins and scales**

you shall not eat;

it is unclean

for you.

Unlike the other categories of dietary prohibitions in Leviticus 11 and Deuteronomy 14:4–21 (quadrupeds, birds, flying insects and swarming creatures) where the forbidden and permitted species are in many cases singled out by name, the forbidden species of water fauna are described only by reference to two anatomic criteria—lack of fins and/or scales.¹

¹ Jacob Milgrom (1991: 659–661) pointed out that the biblical corpus in general lacks names for fish (aside from the ‘תנינים’: Gen 1:21; Isa 51:9; Ps 74:13). This curious fact he ascribes to ancient Israelites having little access to natural bodies of water and to a dearth of fish in the Eastern Mediterranean prior to the construction of the Suez Canal—both dubious claims according to the current state of archaeozoological knowledge (cf. Firmage 1990: 189–190, 200–202). For a somewhat odd suggestion that the pentateuchal authors felt obliged to set forth criteria for proscribed fish, but in ignorance of marine zoology, excluded commonly eaten species such as catfish, see Houston 1993: 234–235.

While finless and scaleless species are forbidden as food in both texts, Leviticus uses the root ר-ק-ש ('abomination') while Deuteronomy uses the root ט-מ-ט ('impure').² The relationship between these parallel legislations on dietary prohibitions has been a matter of debate among pentateuchal critics ever since the late 19th century, with some explaining that Leviticus 11 derived from and expanded upon Deuteronomy 14:3–21 (Kuenen 1886: 266), others arguing that Deuteronomy 14:3–21 derived from and abridged Leviticus 11 (Dillmann 1880: 481–482; Eerdmans 1912: 61–62; Rendtorff 1954: 45; Milgrom 1991: 698–704), and yet a third position suggesting that both texts were based upon an even earlier tradition that has since been lost (Driver 1885: 163–164).³ The dating of these texts and their redactional histories are even thornier issues, and although many scholars would date the original composition of both texts to some point during the Persian period (539–331 BCE), some would argue for a 'pre-exilic' date (7th century BCE or even earlier) for one or even both of these sources of legislation (see most recently Nihan 2011: 417–432).

Following these earliest references to a prohibition on scaleless and finless water fauna, no direct references to restrictions on the consumption of aquatic species are to be found until the Roman period.⁴ The earliest surviving post-pentateuchal reference to the prohibition is found in the mid-1st century CE writings of Philo of Alexandria (*Spec. Laws*, 4:101, 110–112).⁵ Following this, the prohibition is touched upon by the early rabbis of the 2nd through 4th centuries CE (e.g., *m. Hullin* 3:7; *m. Niddah* 6:9; *t. Hullin* 26–27; *b. 'Abodah Zarah* 39a) and is briefly noted by a small number of non-Judean authors as well (e.g., Pliny the Elder, *NH* 31.95;⁶ *Epistle of Barnabas*, 10; Clement, *The Instructor* 2:1; Porphyry, *De Abstinencia* 4:14).

As the above-cited pentateuchal texts comprise the only surviving textual references to a proscription or taboo against finless or scaleless water species which date to any

² Milgrom (1991: 656–659) argued that the root ר-ק-ש in Lev 11 bears a precise, technical meaning: it refers to animals whose ingestion is forbidden but whose contact does not pollute with ritual impurity. As for the use of the root ט-מ-ט in Deuteronomy 14:10, Milgrom (*ibid.*: 700–701) argued that in Deuteronomy the term lacks a restricted ritual dimension and should be read as a moral pronouncement (cf. Houston 1993: 40–43). Be that as it may, neither Leviticus 11 nor Deuteronomy 14 forbid touching the carcass of finless or scaleless species (cf. Lev 11:8; Deut 14:8).

³ For more recent considerations, see Meshel 2008; Nihan 2011: 412–414.

⁴ It bears noting that the relevant passages from Leviticus 11 are preserved in a fragmentary state among the Judean Desert biblical texts in 1QpaleoLev (1Q3) 1 and in MasLev^b (Mas1b) iv12–17; see: Barthélemy 1955: 52; Talmon 1999: 45.

⁵ See also 4 Maccabees 1:34, where unspecified 'water creatures ($\epsilon\nu\delta\rho\omega\nu$)' are said to be prohibited. No references to prohibited aquatic species have survived from Qumran. A curious passage in the Damascus Document (CD 12:13b–14a) states that "they should not eat fish unless they were torn alive and their blood shed" (והדגים אל יאכלו כי אם נקרעו חיים ונש[פ] דמם). The idea seems to be that fish blood is subsumed under the ban on 'all blood' (Lev 3:17; 7:26–27; 17:10–14; as opposed to *m. Ker.* 5:1 and *t. Ker.* 2:18 where fish blood is permitted). For the idea that fish might require the rabbinic ritual slaughter, see Genesis Rabbah 7:2.

⁶ Pliny seems to have been only vaguely familiar with the Judean practice, which he appears to have thought involved abstaining from eating fish *with* scales!

time during the first millennium BCE, we are left with very little to go on if we wish to better understand the origins and early history of the prohibition. Before we can even begin to seriously attend to the rationale behind the proscription, we must first attempt to answer some basic questions regarding when and among which group/s avoidance of finless and scaleless aquatic species first arose.⁷ One of the most critical questions is whether or not the pentateuchal prohibition was predated by an earlier taboo on finless and scaleless species which might have been practiced prior to the authoring and editing of Leviticus 11 and Deuteronomy 14.⁸ On the other hand, we might inquire as to whether or not the prohibition as it appears in the Pentateuch reflects a genuine *legislation* at all at this time, or if perhaps the proscription simply represents a sort of literary, ideational creation with no connection to actual practice. Furthermore, even once the Pentateuch came to be accepted by Judeans and Samaritans as normatively authoritative, the question remains: To what extent was the prohibition against consumption of finless and scaleless species actually adhered to?

Archaeology, with its focus on human behaviour over time and space, provides an ideal tool for approaching the questions delineated above. In our study below, we attempt to seek answers by analysing a large dataset of archaeozoological fish remains which date to the period surrounding the first appearance of this prohibition.

In order to gain suitable context, our study expands the chronological scope to cover a large range of time both before and after the appearance of the Pentateuch itself, beginning with the Late Bronze Age and ending with the Byzantine period (ca. 1550 BCE to 640 CE). Widening the lens to survey over 2,000 years of dietary behaviours surrounding the consumption or avoidance of scaleless fish among a wide range of different identity groups in the southern Levant provides the context needed to enable us to explore the origins and early history of the pentateuchal prohibition in the *longue durée*.

Method and taxonomic overview

Method

Data for the current research were collected by reviewing 56 zooarchaeological assemblages from 30 sites in the southern Levant, which together include 21,646 skeletal elements taxonomically identified to at least the level of family. Almost all of these assemblages were analysed in person by the second author of the present study, and subsequently documented in both published and unpublished reports.⁹ Analysed assemblages with less than 20 skeletal remains were excluded from the

⁷ The literature on the possible rationales behind the pentateuchal dietary laws is vast; in the words of Milgrom (1991: 718): “There are as many theories as theorists”. For an in-depth exploration of some of the main positions on the matter, including a detailed discussion on Mary Douglas’s ideas about impurity and anomaly, see *ibid.*: 718–736.

⁸ See Milgrom 1991: 727, where a similar question is posed for the entirety of the dietary prohibitions.

⁹ Note that in a few cases, certain data on published assemblages provided here are not specified in the published reports.

study in order to minimise the risk of chance anomalous results. The collected data are presented below in seven tables (Tables 1–7) categorised according to the date of each assemblage provided by the excavators. Our presentation and analysis of the data follows standard archaeological divisions of time, from the Late Bronze Age until the Byzantine period.

The collected data include: (1) total Number of Identified Specimens (NISP) of all fish remains in the assemblage; (2) NISP of scaleless fish remains deriving from the taxa described below: catfish, cartilaginous fish (sharks and rays), and in two cases eels. These NISP data are presented separately in gross numbers, along with a calculation of scaleless fish NISP as a percentage of total fish NISP.

Assemblages are presented and discussed according to their respective archaeological periods in the main body of the text, with each period followed by an accompanying table that provides the raw data which serves as the basis for the foregoing presentation and analysis.

In our analysis of the assemblages, we have taken into consideration several methodological problems inherent in any quantitative study of fish remains. A central concern is the extent to which the raw numbers present in our database represent actual dietary consumption patterns. From the moment the fish were consumed in ancient times until archaeological analysis of their remains is completed today, fish bones (as well as other bones) go through several taphonomic ‘stations’ that affect their survival, their state of preservation and their correct identification and reporting. From different methods of garbage disposal, to being eaten by dogs, to the effect of the chemical composition of the soil, to the method of collection when excavated (hand-picked, dry-sifted or wet-sifted), to the expertise of the archaeozoologist in identifying the fish—a variety of hazards threaten the loss of data. The effect of each of these factors is different for different fish taxa. These problems of taphonomy pose potential challenges to almost any study of ancient fish remains, and indeed to almost any study of ancient faunal remains.

With these integral taphonomic problems in mind, it follows that we have no way of accurately assessing the original number of fish that were consumed at any given site during any given period. If, for instance, we find 50 catfish bones which represent at least 5 individual fish in a stratigraphic layer dated to the Iron II (an era which spans almost 400 years)—these could represent 0.1%, 0.00001%, or in fact any other percentage of the total original number of catfish consumed during that period.¹⁰ We simply have no way of knowing.

While it is impossible to reach quantitative conclusions on absolute numbers of scaleless fish consumed at a site—or even ratios of scaleless fish consumption compared

¹⁰ While sometimes skeletal remains are found in a sealed context that can be attributed to a specified point in time (e.g., a pit containing the remains of a ceremonial feast: see below the assemblage from Iron II at Ramat Rahel), such circumstances are rather uncommon. Even in such best-case scenarios, taphonomic factors challenge our capacity to determine actual quantities consumed during any given point in time.

with scaled fish or other fauna—what we may profitably investigate is absolute *presence* or *absence* of scaleless fish remains within any given assemblage. Beyond this, in larger assemblages we might begin to gain a rough picture of dietary patterns at a site if we find that scaleless fish comprise either a significant or a minute percentage of the overall assemblage of fish remains retrieved. This kind of analysis should be viewed as providing general impressions, without losing sight of the taphonomic biases and pitfalls outlined above.

Geographical, chronological and other factors will be considered when referencing the cultural milieu/s associated with any given assemblage. We are well-aware of the methodological minefields that surround any attempt to identify specific archaeological contexts with precise ‘ethnic’, ‘religious’ and/or other types of identity categories. This recognition, however, should not paralyse us from pursuing questions related to such identities. In the present study, for example, we follow archaeological conventions in considering Iron II sites such as Ashkelon and Tel Miqne ‘Philistine’, while Iron II sites such as Jerusalem, Lachish and Ramat Raḥel are viewed as associated with Southern Kingdom Judean culture. More complex situations, such as Hellenistic period levels from Areas B/D at Gamla, are described on a case-by-case basis. Even in what appear to be the most clear-cut cases, however, we must consign ourselves to the grim reality that assessing the cultural identity perceptions held by the actual people who consumed the fish whose remains are analysed here will forever involve a significant degree of uncertainty.

Taxonomy

The scaleless fish most common in faunal assemblages from the southern Levant can be divided into two main taxonomic groups: catfish and cartilaginous fish (sharks and rays).

Catfish

The term ‘catfish’ refers to a large taxonomic group of fish consisting of numerous families. Catfish bones have distinctive features that are typical of members of this group, and as such are easy to identify. Faunal assemblages from the southern Levant include three families belonging to this larger group:

Clariidae: The only species of catfish native to the Levant is *Clarias gariepinus* (Burchell 1822), known as the ‘North African catfish’ or ‘Nile catfish’. The North African catfish is the largest freshwater fish in Israel today, reaching a maximum length of 150 cm and a weight of 20 kg (Golani 1997: 240). An inhabitant of lakes, large sluggish rivers, slow water streams and swamps, it resides locally in coastal rivers, in the Sea of Galilee and in other regions of the Jordan River system. It is found throughout the Levant as well as in the Nile River in Egypt and across Africa. Like other members of the family *Clariidae*, this species has evolved an accessory air-breathing organ which allows it to survive in harsh conditions such as poor oxygenation or desiccation. The North African catfish is an omnivorous fish and feeds on any available organic food source, including other fish, frogs, reptiles, birds, small mammals, snails, crustaceans, plant seeds and fruit. It can be caught with a rod and hook or in nets. Catfish remains consist mainly of vertebrae (Fig. 1)

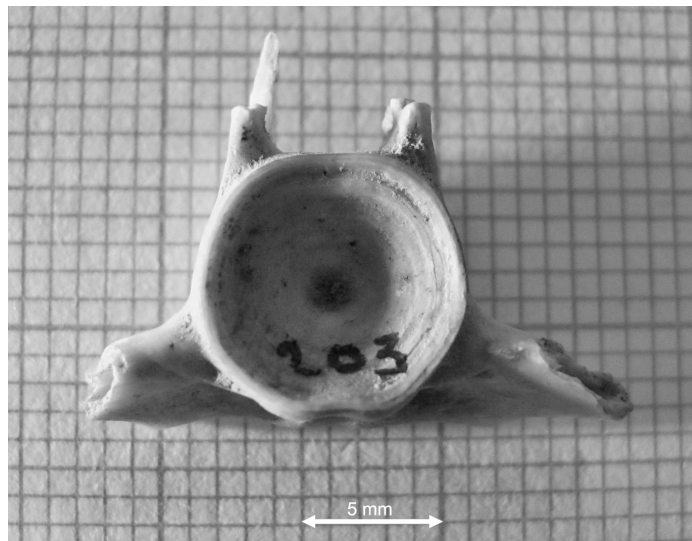


FIGURE 1 Anterior vertebra of a catfish excavated at Jerusalem.

and sometimes bones from the head regions.¹¹ *C. gariiepinus* remains are by far the most common catfish remains in all the assemblages analysed here.

Bagridae: Bagrid catfish are a family whose closest natural habitat is the Nile, where two species occur: *Bagrus bayad* (Forsskål 1775), also known as ‘black Nile catfish’, and *Bagrus docmac* (*ibid.*), also known as ‘Semutundu’. These are large predatory fish that feed on insect larvae, shrimp and small fish, and can attain a maximum length of one m. These Nilotic fish had to be processed and transported over a long distance, probably first on boats to one of the Mediterranean ports, and then on land to the sites where their bones were unearthed. This was part of an extensive Egyptian venture of trade in fish, involving the entire Eastern Mediterranean coast, which flourished particularly during the Late Bronze and the Iron Ages, but also in the later periods (Van Neer *et al.* 2004). Bones of imported Nilotic fish, mainly Nile perch, have been excavated in large numbers at many sites in Israel, Lebanon and as far away as Cyprus and Turkey. This trade in basic food items reflects the complex cultural connections that prevailed in the region in ancient times.

Mochokidae: This family of catfish, also a Nile import, is commonly known as ‘squeekers’ due to an unusual habit of certain members of the large genus *Synodontis*; when agitated, many species in the genus are capable of making a squeaking noise by stridulation of the pectoral spine against the pectoral girdle. These fish are also commonly known as ‘upside-down catfish’ due to a peculiar habit of the fish to swim in an inverted position.

¹¹ As catfish have a large, heavy head bearing very little flesh, it was often cut off and left in the vicinity of the fishing grounds. Since usually only the meat-bearing carcass of the catfish was brought to market, bones from the head region tend to be rarer than vertebrae.



FIGURE 2 Centrum of shark excavated in Ashkelon.

Cartilaginous fish

The second group of scaleless fish most common in archaeozoological assemblages in the southern Levant consists of cartilaginous fish that belong to the subclass *Elasmobranchii*. This group includes two sister groups, sharks and rays, both characterised by a cartilaginous skeleton and no bones. Their surviving remains are limited to teeth and (mainly) centra, which are the calcified (not ossified) centres of vertebrae (Fig. 2). Centra are often found in archaeological excavations and are usually regarded as the remains of food, unless they have been pierced in their middle for threading, indicating that they were used for aesthetic purposes like necklaces and other objects. While both the teeth and centra of these cartilaginous fish are easy to identify in archaeozoological collections, the many species of sharks and rays in the Mediterranean are difficult to tell apart on the basis of centra alone.

Other scaleless fish taxa

Other scaleless fish taxa are extremely rare in archaeozoological assemblages in the southern Levant. Two assemblages analysed in the present study include bones deriving from freshwater eels belonging to the family *Anguillidae*, specifically the species *Anguilla anguilla*.

Analysis of the data

Late Bronze Age

Only a small number of assemblages of fish remains dating to the Late Bronze Age (ca. 1550–1130 BCE) have been analysed. The largest assemblage is from Lachish and includes

TABLE 1
Late Bronze Age

Site	Total NISP	Scaleless species NISP		Percent scaleless species	Reference
		<i>Catfish</i>	<i>Shark & Ray</i>		
Haruba (Northern Sinai)	251	-	89	35	Van Neer, Zohar and Lernau 2005: 146
Lachish (Levels S3–1, VII – VI)	549	13	62	14	Lernau and Golani 2004: 2478
Tel Rehov (Strata D-11–8)	175	-	-	0	Lernau 2016: 10–11
Timna, Site 2	57	-	1	2	Sapir-Hen, Lernau and Ben-Yosef 2018: 72
Timna, Site 200	30	-	-	0	Sapir-Hen, Lernau and Ben-Yosef 2018: 72

a significant number of remains of both catfish and cartilaginous fish (sharks or rays). A smaller assemblage from Ḥaruba (also known as ‘Ḥaruvit’) in Northern Sinai, has a significant number of shark remains. An assemblage of 175 identifiable fish bones from Tel Rehov has no remains deriving from scaleless fish. Considering the small number of assemblages and the small sample size in most of these, no meaningful observations may be drawn regarding the degree to which scaleless fish were or were not eaten in the southern Levant during the Late Bronze Age.

Iron I

A larger number of fish assemblages is available from the Iron I (ca. 1130–950 BCE). Catfish bones were found in significant numbers at sites such as Tel Beth-Shean (32 out of 117 total NISP) and Tel Kinrot (33 out of 73 total NISP), which is unsurprising considering the proximity of these sites to one of the central habitats of such fish in the region—the Jordan River system. Significant remains of cartilaginous fish (sharks and rays) were found at sites along the Mediterranean, at Ashkelon (249 out of 2,689 NISP) and Dor (19 out of 370 NISP). While we should note the almost complete absence of scaleless fish remains at Tel Rehov (especially in Iron IB loci) and the small number of such remains at Tel Miqne, there seems to be little reason to view the data from these sites as reflecting some kind of food taboo. Unfortunately, none of the assemblages available for analysis derive from sites associated with highlands’ material culture.¹²

¹² The lone possible exception is the site el-Aḥwat; while Adam Zertal (2012) associated this site with the Shardana, one of the ‘Sea Peoples’ mentioned in Egyptian and Ugaritic texts, Israel Finkelstein (2002: 196) argued that the site’s material culture “reflects both highland traditions and the influence of the Iron I Canaanite material culture of the lowlands”.

TABLE 2
Iron I

Site	Total NISP	Scaleless species NISP		Percent scaleless species	Reference
		Catfish	Shark & Ray		
el-Aḥwat	50	3	-	6	Lernau 2012
Ashkelon (Phases 20–17)	2,689	10	249	10	Lernau forthcoming ^a
Tel Beth-Shean (Iron Ia Strata N-4–3, S-4–3)	117	32	-	27	Lernau 2009
Dor (Area D2, Phases 13–8)	370	4	19	6	Raban-Gerstel <i>et al.</i> 2008: 36
Tel Kinrot (Strata VI–IV)	73	33	-	45	Thomsen 2011
Tel Megiddo (Strata VIB–VIA)	92	4	-	4	Lernau 2006: 490
Tel Miqne (Strata VII–IV)	410	4	1	1	Lernau 2017: 368
Tel Reḥov (Strata D-7–6; Iron IA loci)	44	-	-	0	Lernau 2016: 10–11
Tel Reḥov (Strata VII– VI; Iron IB loci)	578	-	1	0	Lernau 2016: 10–11, 14
Timna, Site 30	21	2	-	10	Sapir-Hen, Lernau and Ben-Yosef 2018: 72
Tel Yoqne‘am (Strata XVIII–XVII)	29	1 eel	-	3	Kolska Horwitz <i>et al.</i> 2005: 431

Iron II

A far clearer picture begins to emerge from the Iron II (ca. 950–586 BCE), the period of time during which inhabitants of the highlands coalesced politically into the two kingdoms of Israel and Judah.

All the fish assemblages from Judah available for analysis contained significant numbers of scaleless fish remains, especially catfish. These include eight assemblages unearthed in various areas on the eastern hill of Jerusalem—throughout the so-called Ophel, the eastern slope of the ‘City of David’ and in the ‘Giv‘ati Parking Lot’. Excavations at all these areas unearthed hundreds of catfish bones along with dozens of calcified remains of shark cartilage. These remains all derived from loci dating variously from the late-9th/early-8th century BCE until the Babylonian destruction of the city in 586 BCE.

Another important assemblage, deriving from a single late-7th/early-6th century BCE deposit in a small pit under the floor of the central courtyard of the palatial complex at Ramat Raḥel, includes 48 fish bones, of which 23 belong to catfish. Based on the skeletal elements and on the size of the bones, there were at least seven individual catfish inside the pit, with a total weight estimated at about 10 kg.

Scaleless fish remains were also uncovered outside of the immediate vicinity of Jerusalem, at Lachish (17 out of 120 total NISP). Dietary consumption patterns of

TABLE 3
Iron II

Site	Total NISP	Scaleless species NISP		Percent scaleless species	Reference
		Catfish	Shark & Ray		
Acre (Area K, Iron IIB)	101	-	4	4	Lev-Tov and Lernau forthcoming
Acre, (Area K, Iron IIC)	183	17	-	9	Lev-Tov and Lernau forthcoming
Ashkelon (Grids 38 and 50, all Iron II phases)	1,606	312	154	29	Lernau 2011
Jerusalem, City of David (Area C, Stratum 9a)	334	23	6	9	Lernau forthcoming ^b
Jerusalem, City of David (Area D3, Iron IIB)	53	2	2	8	Spiciarich, Sapir-Hen, and Lernau forthcoming
Jerusalem, City of David (Area G, Iron IIC Stratum 10, Layers 1–5)	726	230	-	32	Lernau 2015a
Jerusalem, City of David ('rock-cut pool', Iron IIB)	5,385	217 + 3 eel	10	4	Reich, Shukron, and Lernau 2007: 159*
Jerusalem, City of David (Y. Shiloh Strata 14–10)	183	20	-	11	Lernau and Lernau 1992: 137
Jerusalem, Giv'ati Parking Lot (Area M2; 'Phase IX' Iron IIC)	114	17	3	18	Spiciarich 2020: Table 5.30
Jerusalem, Ophel (B. Mazar, Iron IIC)	47	5	-	11	Lernau and Lernau 1989: 155
Jerusalem, Ophel (E. Mazar, Iron IIB)	290	78	1	27	Kolska Horwitz and Lernau 2018: 308
Tel Kabri (Kempinski Stratum 2, Iron II)	24	-	1	4	Lernau 2002: 421
Lachish (Levels V–II)	120	13	4	14	Lernau and Golani 2004: 2478
Tel Megiddo (Levels K-3–2, H-6–3)	64	7	1	13	Lernau 2006: 490
Tel Miqne (Stratum I)	67	-	-	0	Lernau 2017: 368
Ramat Raḥel (Phase 2)	48	23	-	48	Fulton <i>et al.</i> 2015: 36
Tel Reḥov (Strata VI–IV; Iron IIA)	503	4	-	1	Lernau 2016: 10–11

* Note that in the published report, total NISP is given as 5,414, and sharks/rays NISP is 39. We have removed from these totals 29 shark teeth, which we now have reason to believe may be fossils which had been embedded in the local limestone—and thus are a *geological* rather than an *archaeological* feature.

scaleless fish at all the Iron II Southern Kingdom sites analysed is comparable to those at sites associated with Philistine (Ashkelon) and Phoenician (Acre and Tel Kabri) material cultures.

Although far less data is currently available from sites associated with the Northern Kingdom, a small assemblage of fish remains from Tel Megiddo suggests that scaleless fish were consumed at northern sites as well. An assemblage from Iron IIA loci at Tel Rehov, on the other hand, included only a small number of scaleless fish bones (4 out of 503 total NISP).¹³

Persian period

Compared to the Iron II, a more limited number of fish assemblages is currently available from the archaeological periods that postdate the 586 BCE destruction of Jerusalem. Two important assemblages were uncovered in Jerusalem, in well-stratified debris layers unearthed beneath the ‘Northern Tower’ in Area G of the ‘City of David’. One context, dated by the excavator to the time of the ‘Babylonian occupation’ (presumably meaning 586–539 BCE), included 128 catfish bones out of a total NISP of 467. Above this, a context dated to the Persian period (ca. 539–332 BCE) included 36 catfish bones out of a total NISP of 195. A third assemblage from Jerusalem, unearthed in the ‘Giv’ati Parking Lot’ and dated to the Persian period, included 16 catfish bones along with one shark/ray remains, out of a total NISP of 133.

Outside the province of Yehud, only two assemblages of fish remains from the Persian period are available for study: from Acre and from Tel Taninnim (south of Dor).

Hellenistic period

Four assemblages of fish remains dating to the Hellenistic period (332–63 BCE) are included in our analysis. Unfortunately, only one of these derives from an unambiguously Judean context: in Jerusalem’s ‘Giv’ati Parking Lot’, a single catfish bone was identified within a small assemblage with 28 total NISP dated to the Late Hellenistic (Hasmonean) period.¹⁴

Catfish remains were found in surprisingly large proportions within the assemblage from Maresha, and in far smaller proportions within the assemblage from Acre—both cities clearly associated with Hellenistic culture. A significant number of catfish bones was also unearthed in Area B at Gamla (13 out of 72 total NISP). While in the original report it was assumed that this and other archaeological assemblages from Areas B/D should be associated

¹³ The cultural affiliation of Tel Rehov with the Northern Kingdom is less than clear: Mazar 2008: 2013–2018. It may be of interest to note that increasing frequencies of pig bones appear at Tel Rehov during the Iron IIA; see Sapir-Hen *et al.* 2013: 6, 10.

¹⁴ With consideration to the dearth of data from this period, we note here the contents of two Hellenistic assemblages, both from Jerusalem’s Giv’ati Parking Lot, which are not included in our analysis because their total NISP is less than 20 (see the ‘Method’ section above). One assemblage, dated to the Early Hellenistic period (‘Phase VII’), contains three catfish bones out of a total NISP of 16 (Spicciarich 2020: Table 5.30). The second assemblage, dated to the Late Hellenistic period (‘Phase VI’), contains one catfish bone out of a total NISP of nine (*ibid.*).

TABLE 4
Persian Period

Site	Total NISP	Scaleless species NISP		Percent scaleless species	Reference
		Catfish	Shark & Ray		
Acre, Area K	215	17	2	9	Lev-Tov and Lernau forthcoming
Jerusalem, City of David (Area G, 'Babylonian level' Stratum 9/10, Layers 1–3)	467	128	-	27	Lernau 2015 ^a
Jerusalem, City of David (Area G, 'Persian level' Stratum 9, Layers 1–8)	195	36	-	18	Lernau 2015 ^a
Jerusalem, Giv'ati Parking Lot (Area M2, 'Phase VIII')	133	16	1	13	Spiciarich 2020: Table 5.30
Tel Tanninim (Area A)	23	1	-	4	Fradkin and Lernau 2006: 219

TABLE 5
Hellenistic Period

Site	Total NISP	Scaleless species NISP		Percent scaleless species	Reference
		Catfish	Shark & Ray		
Acre (Area K)	92	8	-	9	Lev-Tov and Lernau forthcoming
Gamla (Area B, 1st century BCE phase)	72	13	-	18	Lernau and Shemesh 2016
Jerusalem, Giv'ati Parking Lot (Area M2, 'Phase V' Late Hellenistic stratum)	28	1	-	4	Spiciarich 2020: Table 5.30
Maresha	582	386	3	67	Unpublished; analysed by O. Lernau

with a supposed Judean presence at the site as early as the late 2nd century BCE, work by Shulamit Terem on the oil lamps and other ceramic finds from these sectors of the site suggests that the town was likely settled by a non-Judean population from the 2nd century BCE until ca. 80 BCE, when according to Flavius Josephus (*War* 1:105; *Ant.* 13:394) the 'fortress of Gamla' was captured by Alexander Jannaeus (Terem 2008: 118–126).¹⁵

¹⁵ For the idea that a Judean population resided in Areas B/D at Gamla—perhaps together with non-Judean residents—as early as the late 2nd century BCE, see: Berlin 2006: 133–135; Syon 2014: 137–139. Both Berlin and Syon conceded that there may well have been non-Judeans living in Gamla up until the city's capture by Jannaeus, and Berlin even suggested that during this period the city's Judeans were characterised by "acceptance of at least some Greek habits, and thus [...] were more cosmopolitan and less observant than Judean Jews" (*ibid.*: 135).

Roman period

Only a limited number of fish assemblages date to the Roman period (63 BCE–324 CE). Excavations in two sections of the Early Roman period Jerusalem city dump on the eastern slopes of the Lower City included fish assemblages with very small numbers of scaleless fish remains: in one assemblage four catfish bones were identified out of a total NISP of 294, and in the other three catfish bones and one shark centrum were identified out of a total NISP of 114. Interestingly, none of the catfish bones were local—they belonged to two species native to the Nile (*Bagridae* and *Mokhokidae* families).

At Masada, 327 fish bones were found in loci throughout the site (no precise dates are provided), and another 1,494 microscopic fish bones were found in an analysis of fish sauce remains (*allec*) discovered in a jar fragment thought to date to the time of Herod. No scaleless fish remains at all were found among any of these. A small assemblage of 38 fish bones from late 1st century BCE loci on the northern slope of Herodium also include no scaleless fish remains.

A small fish assemblage was unearthed in a cesspit adjacent to Herod's hippodrome in Caesarea in a locus with Early Roman period remains. The collection included three catfish bones out of a total NISP of 107. As at this time Caesarea hosted a mixed population of Judeans and Greek-speaking non-Judeans, it is impossible to know who may have consumed the fish whose remains were discovered here.

Byzantine period

Only two small fish assemblages were unearthed at Judean sites dating to the Byzantine period (324–640 CE). These include a small collection of 32 fish bones unearthed during excavations carried out in structures adjacent to the Byzantine period synagogue at 'En Gedi, an assemblage which included a single catfish bone. Another small cluster of 34 bones was unearthed at Horvat Rimmon (southern Shephelah), at the southern end of a long magazine west of the main pillared hall of the ancient synagogue; all

TABLE 6
Roman Period

Site	Total NISP	Scaleless species NISP		Percent scaleless species	Reference
		Catfish	Shark & Ray		
Caesarea (Cesspit 3898)	107	3	-	3	Lernau 2015 ^b
Herodium (Area A)	38	-	-	0	Bouchnick 2015: 485
Jerusalem (Area D3, city dump)	294	4	-	1	Lernau 2018
Jerusalem (Area L, city dump)	114	3	1	4	Bouchnick <i>et al.</i> 2009: 106–107
Masada (<i>allec</i> remains)	1,494	-	-	0	Cotton, Lernau, and Goren 1996; Lernau, Cotton and Goren 1996
Masada (loci throughout)	327	-	-	0	Lernau, Cotton and Goren 1996: 35–36

TABLE 7
Byzantine Period

Site	Total NISP	Scaleless species NISP		Percent scaleless species	Reference
		Catfish	Shark & Ray		
Bab el-Hawa	21	21	-	10	Raphael and Lernau 1997: 111
Caesarea (Areas LL and TP)	100	37	1	38	Fradkin and Lernau 2008
‘En Boqe (castellum)	291	68	-	23	Lernau 2000: 169
‘En Gedi (Hadas excavations near synagogue)	32	1	-	3	Lernau 2005
Ḥorvat Karkur ‘Illit (church and surrounding structures)	527	4	-	1	Lernau 2004
Ḥorvat Rimmon (Stratum Va)	34	-	-	0	Lernau forthcoming ^d
Tamara (castellum)	351	45	-	13	Lernau 1986
Upper Zohar	726	86	-	12	Lernau 1995

of the bones belonged to a single family of scaled fish (*Mugilidae*) and may indeed derive from a single individual fish.

Larger fish assemblages were uncovered at Byzantine period sites not identified as Judean, and all of these, with only one exception, included large proportions of scaleless fish remains: Upper Zohar (southern Judean Desert) (12%), Tamara (northern Negev Desert) (13%), ‘En Boqe (southern Judean Desert) (23%), Caesarea (38%) and Bab el-Hawa (Golan Heights) (100% of the 21 bones identified). Only at Ḥorvat Karkur ‘Illit (northern Negev Desert) was a relatively large assemblage found to contain very few scaleless fish remains (four catfish bones out of a total NISP of 527).

Discussion

Our foregoing survey of the currently available data on fish assemblages in the southern Levant from a period of over 2,000 years provides the first opportunity to conscript archaeological evidence to explore the background to the pentateuchal proscription against the consumption of scaleless fish. While the state of the evidence as it stands today leaves many questions still open, we believe that we are already in a good position to draw significant preliminary conclusions on the matter.

Prevalence of scaleless fish in south Levantine assemblages

Our first observation is that consumption of scaleless fish, particularly catfish of the species *Clarias gariepinus*, is well-attested in archaeozoological assemblages in the southern Levant throughout the 2,000+-year period studied here. This is also true of periods that predate the eras analysed in the present study (e.g., the Early Bronze and Middle Bronze Ages; Lernau forthcoming^e; Lernau 2009) as well as periods that postdate

the timeframe investigated here (e.g., the Early Islamic and Crusader periods; Lernau forthcoming^e; forthcoming^f). Catfish were clearly exploited as a suitable source of nutrition for various population groups living in the region over considerable periods. This observation leads to the conclusion that if clear patterns of little-to-no catfish remains among a particular identity group during a specific period of time begin to be manifest, the possibility that some kind of conscious dietary abstention might be at play becomes an option to consider.

During the earliest periods covered by our survey, the Late Bronze Age through Iron Age I, scaleless fish are present in at least modest amounts (i.e., they comprise more than 5% of the total NISP) in half of the sites analysed. Unfortunately, none of the sites with fish remains available for analysis can be said to be clearly associated with highland material culture in the region that gave rise to the kingdoms of Israel and Judah during the Iron Age II.

The picture becomes clearer in the Iron Age II. At over three-quarters of the sites with available evidence, scaleless fish remains are present in modest to moderate amounts: 13% on average (excluding outliers below 5% and above 30%). Significantly, all the fish assemblages from sites within the Southern Kingdom—first and foremost Jerusalem—presented evidence of modest to (more often) moderate amounts of scaleless fish remains. While more limited data is available to-date from sites associated with the Northern Kingdom, there is little reason to think that scaleless fish were consumed to a lesser degree there than in Judah (the assemblage from Iron IIA loci at Tel Rehov notwithstanding). From the time following the end of the Iron II, three assemblages from layers postdating 586 BCE in Jerusalem contain remains that suggest that consumption of catfish in Jerusalem continued into the Persian period.

The background to the pentateuchal proscriptions against consumption of scaleless fish and pork

These findings are extremely significant as they help illuminate the background of the pentateuchal dietary restrictions, and particularly the important differences between the fish prohibition and the proscription against consumption of pork.

An important recent metanalysis of the data regarding frequencies of pig remains within Late Bronze and Iron Age faunal assemblages in the southern Levant has highlighted the complicated and culturally ambiguous pattern regarding where and when pig tended to be either present or absent (Sapir-Hen *et al.* 2013; with updates in Sapir-Hen 2019). The study found that from the Late Bronze IIB until the end of the Iron Age (ca. 1300–586 BCE), pig was either completely absent or else was found in negligible amounts (less than 2%) at many sites in the southern Levant. Significantly larger frequencies of pig were found only in Late Bronze Age assemblages associated with Egyptian colonisation (Beth-Shean and Timna Site 2), at Iron I Philistine urban centres (but not at rural sites in Philistia), and at Iron IIB (780–680 BCE) sites within the lowland territory of the Northern Kingdom and at the Philistine site of Tell eš-Šafi—but not at Southern Kingdom sites or at northern sites associated with Phoenician or Aramean material culture. During the Iron IIC (ca. 680–586 BCE), pig was either absent, or else present in extremely small frequencies (2% or less)

at all analysed sites in the region—whether within the geopolitical territories of Judah, Philistia or Edom (Horbat Qitmit). All of this suggests that by the time the pentateuchal pork restriction was first composed, the prohibition would have been well in keeping with longstanding dietary habits common among at least some of the people thought to have been ancestors of the authors and editors of the Pentateuch.

The present study clearly demonstrates that the background behind the pentateuchal prohibition against scaleless water fauna is quite different from the parallel prohibition against pork. During the Iron II, scaleless fish were being eaten in Judah and (judging from the finds at Megiddo) in Israel as well. In Jerusalem, scaleless fish continued to be eaten into the Persian period. Unlike the pentateuchal pork prohibition, the pentateuchal prohibition on scaleless aquatic species *deviated from* dietary practices manifest at Judahite/Yehud sites from the Iron II through the Persian period. Although the pentateuchal proscription against scaleless and finless water fauna appears immediately after the prohibition against pork in both Leviticus (11:7–12) and Deuteronomy (14:8–10)—within the exact same literary pericopae—our study clearly demonstrates a stark difference between these two proscriptions with regard to their respective *Sitz im Leben*.

Evidently, the pentateuchal writers were capable of legislating a dietary restriction that was not rooted in centuries-old patterns of consumption. If the proscription against scaleless fish could take form in the writings of pentateuchal authors despite the lack of a long-standing, widespread dietary tradition at its root, we should consider the possibility that perhaps other pentateuchal dietary prohibitions as well were established by these writers quite independently of pre-existent eating habits. This realization should encourage us to reexamine whether the absence of pigs among certain groups of south Levantine sites in the Bronze and Iron Ages ought best be explained with the commonly posited hypothesis of a cultural ‘taboo’ against pork in these early stages, rather than with alternative hypotheses that relate to more practical ecological or socio-economic factors (as has been argued by Hesse 1990; Hesse and Wapnish 1997; Sapir-Hen *et al.* 2013; Finkelstein, Gadot and Sapir-Hen 2018; Sapir-Hen 2019).¹⁶

Consumption of scaleless fish in Persian period Yehud

We should stress here the significance of the evidence demonstrating that scaleless fish were being consumed in Jerusalem during the Persian period. These finds do not lend support to the common scholarly assumption that it was specifically during the Persian period that the Pentateuch had come to attain authoritative status among rank-and-file Judeans. Jerusalem was undoubtedly populated by Judeans at this time, and it would seem

¹⁶ In recent years, Avraham Faust has been among the most vocal supporters of the notion that a ‘taboo’ against pork was observed as early as the Iron I, and probably even earlier, writing of this period: “the Israelites (or proto-Israelites) completely avoided pork at this time, most likely building on an existing taboo to distinguish themselves from the Philistines” (Faust 2018: 293). Faust, like others before him, conflated lack of pork remains with deliberate ‘avoidance’, and consequentially posited that a ‘taboo’ is manifest in the archaeological record. For a detailed critique of several of Faust’s other arguments in this study, see Finkelstein, Gadot and Sapir-Hen 2018.

little more than a case of special pleading to attribute all consumption of scaleless fish in Jerusalem to some postulated non-Judean residents or visitors.¹⁷ A better explanation might be sought in the postulation that the finds in question date to a time before the pentateuchal laws (or at least this particular one) had gained binding status among the Judean populace at large.

Avoidance of scaleless fish in the Greco-Roman and Byzantine periods

Since there are insignificant fish assemblages from Hellenistic period sites in Judea, little may be said regarding consumption or avoidance of scaleless fish among Judeans during this time. Based on written sources, it is fairly certain that by the 1st century CE, the pentateuchal prohibition against eating finless and scaleless aquatic fauna was already well-known and widely observed among Judeans, although it is hard to tell from these sources the exact extent to which the prohibition was strictly kept. While the absence of any scaleless fish remains at Masada and Herodium may reflect observance of this prohibition, the presence of a very small number of catfish bones and one shark centrum in the garbage dump of 1st century CE Jerusalem may be indicative of at least some degree of non-observance among Judeans—assuming that these are the food remains of fish consumed specifically by Judeans in the city.¹⁸

Evidence from Judean sites postdating the Great Revolt are limited to the two very small assemblages unearthed from the environs of the Byzantine-era synagogues at ‘En Gedi and at Ḥorvat Rimmon. The single catfish bone found in the assemblage from ‘En Gedi may be indicative of less-than-universal observance of the pentateuchal prohibition at this time.

Remaining questions

Having presented our preliminary conclusions on the basis of the currently available data, we turn now to outline some of the central unanswered questions. Perhaps the most important issue is when Judeans actually began to avoid eating scaleless fish. Regardless of when the pentateuchal texts in Leviticus 11 and Deuteronomy 14 were first conceived, written down and eventually edited into the form we have today, the question of actual, widespread knowledge of and *adherence to* these rules must be addressed separately as a distinct issue. Considering our conclusions above, we are best advised to seek answers

¹⁷ Nehemiah 13:16 narrates: “And the Tyrians [who] abode therein (“יהצרים ישבו בה”) were bringing fish (“דגים”) and all kinds of merchandise and selling [them] on the Sabbath to the people of Judah, and in Jerusalem”. As it is essentially unknown when this story was composed or by whom, its relevance for understanding historical realities in Persian period Jerusalem is rather limited. For a Hellenistic dating of this stratum of Nehemiah, see Wright 2004: 221–242. For an extended treatment regarding how the evidence presented in the current study relates to our understanding of the earliest emergence of Judaism, see the chapter on the Judean dietary laws in Adler forthcoming.

¹⁸ Note that Flavius Josephus reported that Judeans “accused by the people of Jerusalem of eating profane food (κοινοφάγιας)” would flee and seek refuge among the Samaritans (*Ant.* 11:346); this suggests that non-compliance with the pentateuchal food laws was not unheard of at this time, although such behaviour could be expected to elicit severe social reprimand.

to this question in future analyses of fish assemblages from sites located in the Judean heartland that are well-dated to within the Persian and Hellenistic periods. While the archaeological record on these periods has in general been spotty to date, we hold out the hope that future fieldwork will provide the opportunity to study fish assemblages dating to this timeframe.

A second issue that remains to be answered is the extent to which the pentateuchal prohibition, after it had already become widely known and accepted within Judaism (at least in theory), was actually observed in practice—and the extent to which it was ignored. This question may be particularly relevant to the period postdating the Bar Kokhba Revolt, a time when, according to some scholars, observance of Torah law in general waned to the point of almost complete abandonment among rank-and-file Judeans in Roman Palestine (Schwartz 2001).¹⁹

Concluding remark

We conclude our study with a personal request addressed to archaeologists working in the field. If you happen to find yourself excavating at a site located in the Judean heartland, in archaeological levels which that date to the critical Persian or Hellenistic periods, please take into consideration the precious fish remains that are very likely to be missed unless proper steps are taken. When an occupation layer is reached, make sure to regularly dry-sieve a good number of soil samples (using 0.5–1.0 cm mesh). If fish bones are found—switch to more careful wet-sieving (using a finer 1.0 mm mesh). Your efforts stand a good chance of being well-rewarded with critical new fish assemblages that may serve as the basis of important future studies on this fascinating topic.

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¹⁹ For a decline in ritual purity observance at this time, see Adler 2017.

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