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REINTERPRETING THE USE OF GARFISH (LEPISOSTEIDAE) IN THE ARCHAEOLOGICAL RECORD OF THE AMERICAN SOUTHEAST

Tanya M. Peres and Aaron Deter-Wolf

The zooarchaeological remains of garfish (Family: Lepisosteidae) appear throughout the Southeastern United States from the Archaic through the late Prehistoric periods (c. 8000 BC–AD 1450) and have been predominantly interpreted as food remains or the residue of feasting events. However, ethnographic and ethnohistoric data from the region provide conflicting views on how these fish were used by Native Americans, and suggest a fresh examination of the role of gar is needed. By examining ethnohistoric accounts, modern ethnographic studies, and archaeofaunal remains we attempt to explore the full range of gar use in the ethnographic past and present, and suggest new interpretive possibilities for archaeologists faced with gar remains from prehistoric contexts.

‘... zooarchaeologists have inappropriately narrowed their interpretations by seeing animals only in terms of protein and calories.’ (Russell, 2012, p. 7)

Introduction

When confronted with zooarchaeological remains, the default interpretation for many archaeologists continues to be focused on the role of those animals in the diet or subsistence system of the site inhabitants. It is, however, clear from the ethnographic and ethnohistorical record that animals did not function solely as foodstuffs in ancient societies (e.g., Claassen, 2014; Deter-Wolf and Peres, 2014; Johannsen, 2011; Lupo, 2011; Moreno-Garcia and Pimenta, 2011; Russell, 2012). While some scholars assert that ethnographic analogy cannot be useful in interpreting archaeological remains (e.g., Holtorf, 2000; Tilley, 1999), Hodder (1982, p. 9) has rightly pointed out that ‘All archaeology is based on analogy.’ Without the use of comparative cultural data, archaeologists are instead left interpreting the past via our own personal and academic

experiences (Albarella, 2011; David and Kramer, 2001). When applied thoughtfully and critically, ethnographic and ethnohistorical evidence can produce strong analogies that help us better understand the possible ways in which human societies acted and functioned in the past (e.g., Reilly and Garber, 2007; Lankford *et al.*, 2011).

The zooarchaeological remains of garfish (Lepisosteidae) appear throughout the archaeological record of the Southeastern United States from the Archaic through the late Prehistoric periods (c. 8000 BC–AD 1450). These materials have been predominantly interpreted as food remains or the residue of feasting events (e.g., Jackson and Scott, 2003; Saunders *et al.*, 2005; Scarry and Reitz, 2005). However, the ethnographic and ethnohistoric data from the region provide conflicting views on how gar were being used following European contact (e.g., Altman, 2006; Cantrell, 2005; Gilbert, 1943) and suggest a fresh examination of the role of gar is needed.

If we are to more fully understand the importance of garfish to ancient Native American groups we must utilise multiple lines of evidence. In the following discussion we



Figure 10.1. Longnose gar (*Lepisosteus osseus*) from the Norris Reservoir, Tennessee (photo: Jim Negus).

first provide background on gar and contextual information on the archaeology of the American Southeast. We then employ an ethnozoarchaeological approach to explore gar use by the ancient Native American residents of the region by examining ethnohistoric accounts, modern ethnographic studies, and archaeofaunal remains. To this end we focus first on the existing archaeological interpretations, which relate almost entirely to the role of gar in general subsistence systems and feasting events. We then turn to ethnohistoric and ethnographic data on the use of gar by Southeastern Indians and comparative archaeological data in order to offer several new interpretations of gar remains from archaeological sites. We approach this study using a pan-Southeastern view rather than focusing on one specific native group, so as to explore the full range of gar use in the ethnographic past and present and the resulting possibilities for archaeologists faced with interpreting the function of gar remains from prehistoric contexts.

It is not our intent to suggest that all Southeastern Indian groups used gar the exact same way over the expanse of prehistory, but instead we seek to offer a range of potential interpretations and their archaeological correlations. The main goal of our paper is to make a critical examination of the assumptions and common ideas regarding the use of garfish by ancient Native Americans, as perpetuated in academic writings, biological literature, and popular media by weaving together these different datasets into an interpretation of garfish use in the past grounded in scientific inquiry rather than conventional wisdom.

Garfish in the Southeastern United States

Gar are members of an ancient family of bony fish that

evolved into their current form around 100 mya, earning them the distinction of being living fossils. Their thick ganoid scales are comprised of bone coated with enamel, and have been described as being ‘similar to medieval chainmail’ (Goddard, 2013a). This body armour, their prominent teeth, semi-aggressive nature, and position as top predators of freshwater environs caused William Bartram (2001, p. 205) to describe them as ‘warlike, voracious creature(s)’ (Fig. 10.1).

There are seven extant species of gars all belonging to the family Lepisosteidae. Five of these species are found exclusively in North America and include alligator gar (*Atractosteus spatula*), spotted gar (*Lepisosteus oculatus*), longnose gar (*Lepisosteus osseus*), shortnose gar (*Lepisosteus platostomus*), and Florida gar (*Lepisosteus platyrhincus*). These various species inhabit freshwater and brackish environments, and prefer slow moving rivers, streams, bayous and sluggish backwaters (Goddard, 2013a–c). Gar are long-lived and range in size from the smaller Florida gars (approximately 2 ft (0.61 m) as adults) to the much larger alligator gar (average 6.5 ft (1.98 m) but are recorded up to 10 ft (3.05 m)). In 2011, a 234 lb (151.51 kg) Alligator gar was caught by bow fishermen in Mississippi’s Yazoo River (Cleveland, 2011). In the recent past gar were fished for commercial or sport purposes in some southern states. Although their flesh is edible, gar eggs are toxic to humans, mammals and birds (Fuhrman, 1974; Rodrigue, 1978) but can be used as bait for other fish (Livingston, 1996).

Gars remains have been identified from prehistoric sites throughout the Southeastern United States from a period spanning approximately 9000 years. While the following discussion provides an overview of gar recovered archaeologically in the region, it is by no means an

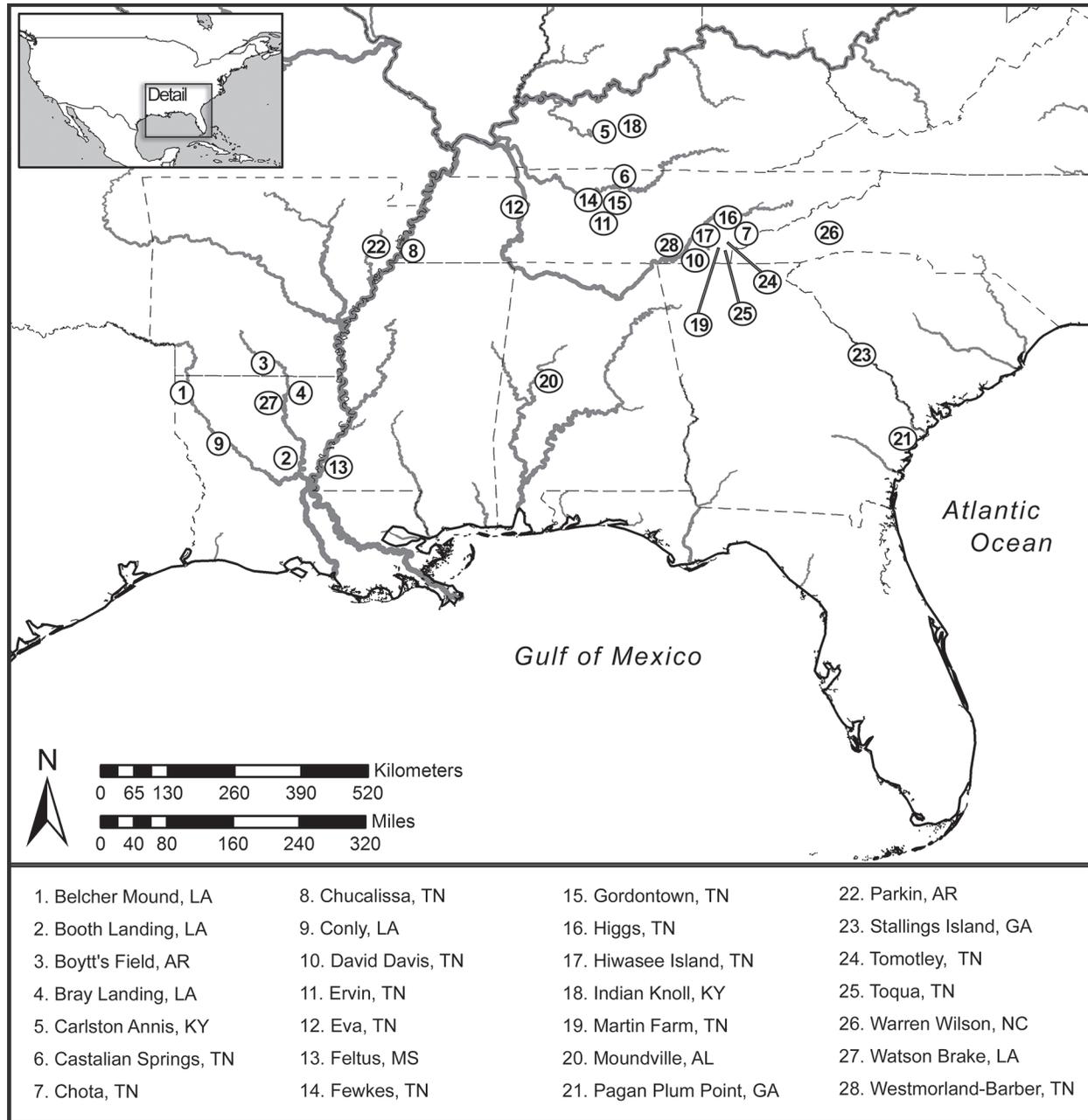


Figure 10.2. Map of the American Southeast showing approximate locations of sites referenced in this paper.

exhaustive review (Fig. 10.2; Table 10.1). There are undoubtedly other published examples of archaeologically-recovered garfish remains, particularly given the amount of data potentially contained in the grey literature of cultural resource management reports, regional archaeological society newsletters, and unpublished theses and dissertations.

A brief summary of the archaeological periods of the Southeast is warranted to help place the following discussion in chronological context. Gar remains first appear in the archaeological assemblages from the region

during the Archaic period (c. 8000–1000 BC). This portion of Southeastern prehistory is divided into sub-periods designated as Early, Middle and Late, as defined by diagnostic material culture. The Archaic has traditionally been interpreted as a period during which mobile populations engaged in a hunter-gatherer-forager economy, although more recent examination of Archaic societies have revealed a far more complicated picture, including early evidence of plant domestication, the rise of social complexity, and deliberate construction of earthen and shell mounds. The

Table 10.1. Summary of gar data from sites discussed in text

Site	State	Archaeological period	NISP	MNI	Elements	Context	Reference
Eva	Tennessee	Archaic	–	–	–	–	Lewis and Lewis, 1961
Hayes	Tennessee	Archaic	–	–	–	–	Faulkner, 1992
Ervin	Tennessee	Archaic	–	–	–	Feature 36	Hofman, 1986
Conly	Louisiana	Archaic	217	26	–	–	Jackson, 1989
Watson Brake	Louisiana	Archaic	1586	–	scales (n=518)	Mound B, Mound Stage 1, submound	Jackson and Scott, 2001; Saunders <i>et al.</i> , 2005
Stallings Island	Georgia/South Carolina	Archaic	–	–	–	pit features	Sassaman, 2006; Blessing, pers. comm.; Weinand and Reitz, 1992
Carlston Annis	Kentucky	Archaic	1	1	entopterygoid	Column 2, Level 9	Glore, 2005
Carlston Annis	Kentucky	Archaic	6	–	scales (4), vertebra (1), dentary (1)	column samples	Crothers, 2005
Indian Knoll	Kentucky	Archaic	–	–	heads/rostra (quantity not indicated)	two burials	Crothers, 2005
Pagan Plum Point	Georgia	Archaic	15	–	–	shell mound/midden	Martin, 1980
Moundville	Alabama	Mississippian	c. 54	–	–	Mound Q and Mound G	Jackson and Scott, 2003
Feltus	Mississippi	Mississippian	402	8	–	south plaza	Funkhouser, 2013; Kassabaum, 2013
Toqua	Tennessee	Mississippian	162	5	–	–	Bogan, 1987
Parkin	Arkansas	Mississippian	–	11	–	residential area; village near mound	Scarry and Reitz, 2005
Higgs	Tennessee	Early Woodland	1	1	–	Stratum II	Parmalee, 1973
Martin Farm	Tennessee	Mississippian	14	–	–	Feature 7, Block 2	Bogan and Bogan, 1985
Chota	Tennessee	Overhill Cherokee	13	–	–	Blocks A, C, D, F, 1974 excavation area	Bogan <i>et al.</i> , 1986
Boytt's field	Arkansas	–	1	–	scale	–	Moore, 1909
Bray Landing	Louisiana	–	1	–	scale	–	Moore, 1909
Tomotley	Tennessee	Mississippian	1	–	scale	–	Baden, 1983
Castalian Springs	Tennessee	Mississippian	3	1	scale	wall trench structure	Peres and Ingalls, 2008a
Gordontown	Tennessee	Mississippian	1	1	–	Burial 50	Breitburg, 1998
Fewkes	Tennessee	Mississippian	3	1	scale	Feature 59	Peres, 2010
David Davis	Tennessee	Mississippian	2	–	dentaries	Burial	Peres and Ingalls, 2008b

ensuing Woodland period (c. 1000 BC–AD 1000) is also divided into Early, Middle and Late sub-periods, and is marked archaeologically by population sedentism and the spread of horticulture, ceramic production, elaborate burial rituals and regional ceremonial complexes.

The Mississippian period (c. AD 1000–1450) is the final prehistoric stage in the Southeast, and witnessed the appearance of widespread regional culture as influence from the paramount site of Cahokia along the Mississippi River near St. Louis spread throughout the region, encountering and adapting to local ideological, political, social and economic systems. The hallmarks of the Mississippian

period include the widespread construction of earthen mounds and mound complexes, fortified villages, distinctive mortuary treatments, the adoption of maize agriculture, and a proliferation of art and associated ritual beliefs.

The earliest European depiction of gar from the American Southeast appears around 1585 in the folio of John White, who created both sketches and watercolour images of various indigenous people, plants, and animals from the region including Virginia and North Carolina. In two separate watercolours, White illustrates both the longnose and alligator gar (Sloan, 2007). Despite this early appearance in the ethnohistorical record, it is not until the mid-eighteenth

Table 10.2. Selected ethnohistorical and ethnographic references to gar use

Source	Food	Inedible	Arrow points	Scratching	Tattooing	Totem/emblem	Area/Culture
Bartram 2001, p. 17	X		X	X			Central Florida
Speck 1909, p. 23	X						Yuchi
Speck 1909, p. 115				X			Yuchi
Le Page Du Pratz 1947, p. 277		X	X				Louisiana
Gilbert 1943, p. 346		X					Cherokee
Swan 1865, p. 247				X			Muscogee (Creek)
Swanton 1928a, p. 528				X			Muscogee (Creek)
Swanton 1928b, pp. 354–355, 363, 554				X			Muscogee (Creek)
Romans 1999, p. 146				X			Muscogee (Creek)
Spoehr 1942, p. 93				X			Seminole
Capron 1953, p. 192				X			Seminole
Speck 1944, p. 47				X			Catawba
Adair 2005, p. 161				X			Chickasaw
Adair 2005, p. 384					X		Chickasaw
Gatschet 1882, p. 153					X		Chitimacha
Dalton 2011				X			Apalachicola (Creek)
Swanton 1928b, p. 243						X	Koasati (Coushatta)
Swanton 1928b, p. 243						X	Miccosukee

century that descriptions of gar use by Southeastern Native Americans begin to appear in accounts from both European and Euro-American explorers and travellers. Additional references to gar use by modern Southeastern Native American groups appear in ethnographic studies from the early twentieth century, a number of these reports have been previously identified in regional discussions of Native American culture (e.g., Hudson, 1976; Swanton, 1946). However, we reference original source material wherever possible (Table 10.2).

General subsistence, feasting and elite provisioning

Until relatively recently, the animal remains recovered from archaeological excavations in the southeastern states of the USA were frequently divided based on gross morphological characteristics (i.e. ‘worked’ vs ‘unworked’) and given little additional attention beyond being regarded as evidence for dietary preferences (Claassen, 2014; Peres, 2014). Consequently, most archaeological interpretations of gar remains from the American Southeast fall within the broad category of consumption, either as general subsistence waste or – in more recent examinations – as residues from elite feasting activities.

As noted by Faulkner (1992) for Tennessee, archaeological occurrences of gar rarely appear in large quantities. Faulkner (1992) notably identifies the underlying interpretive dilemma and writes that, given the density of gar bones and scales and the commensurate potential for archaeological preservation, their infrequent appearance may relate to the habitat of the fish or the ‘cultural beliefs and activities of the Native American fisherman’ (Faulkner, 1992, p. 5). However, few others have examined their collections with a similarly

intuitive eye. For both the Archaic and Woodland periods, archaeological finds of gar are typically interpreted as one facet of the general subsistence strategy of a hunting and gathering lifeway (Crothers, 2005; Glore, 2005; Jackson and Scott, 2001; Lewis and Kneberg, 1961; Martin, 1980; Saunders *et al.*, 2005). These instances include remains recovered from middens, residential areas, and shell or earthen mounds.

As discussed below, different interpretations of gar use may be intuited based on the represented skeletal elements. Several examples from the region were initially interpreted as subsistence remains, but may be re-examined based on the identification of scales and/or dentaries unaccompanied by additional elements (Bogan, 1987; Breitburg, 1998; Lewis and Kneberg, 1946; Webb, 1959; see below). Unfortunately, many reports of archaeologically recovered gar that treat these fish as evidence of general subsistence do not identify specific elements (e.g., Bogan and Bogan, 1985; Bogan *et al.*, 1986; Jackson and Scott, 2001; Lewis and Kneberg, 1961; Parmalee, 1960, 1973; Weinand and Reitz, 1992; Wessler, 2001). Although these data are presumably available in unpublished faunal inventories, its absence from published reports impedes re-interpretation.

Contrary to the interpretations of gar from Archaic contexts as subsistence remains and with the exception of the finds at Parkin (Scarry and Reitz, 2005), gar recovered from Mississippian sites is interpreted as evidence of feasting activities, either by the elite or in communal settings (e.g., Kassabaum, 2013; Pauketat *et al.*, 2002). This dichotomy between interpretations of gar use appears to be implicitly related to traditional interpretations of pre-agricultural societies of the Archaic and the seemingly more complex Mississippian period. The notable exception to this trend is

found at the Archaic period Stallings Island site in Georgia. Gar from Stallings Island comprise a small portion of the fish remains recovered from a number of pit features which Sassaman (2006) interprets as the loci of feasting activities associated with mortuary rituals (Blessing, pers. comm.; Sassaman, 2006).

The site of Moundville in Alabama yielded gar remains from several contexts including Mounds Q and G. Excavations of Mound Q yielded both alligator and short-nosed gar remains, accounting for 12% of the sample (Jackson and Scott, 2002, 2003). Although one of the alligator gars is estimated at over one meter in length, no specific element information is given nor is a description provided detailing how the estimation was made. All of the gar remains from Mounds Q and G were interpreted as residues of elite meals based on their recovery from elite-associated mound deposits.

A number of suspected ritual contexts have been excavated at the Feltus site in Mississippi. The zooarchaeological assemblage recovered from a large midden in the south plaza yielded elements identifiable to the gar family (Lepisosteidae) and both alligator and longnose gar. The total NISP for this midden is 402 and the MNI is eight (Funkhouser, 2013). Based on the size of gar elements from this feature, an estimated 7 ft (2.13 m) long individual is among the remains (Kassabaum, 2013); however, these elements are not identified in any of the available papers on the site. The gar, along with other taxa and artefact classes, are interpreted as evidence of communal feasting.

As described above, the predominate archaeological assumptions regarding the use of gar among Southeastern Indians focuses on their role as foodstuffs, either within generalised subsistence strategies or as a part of feasting. However, these interpretations are not supported in either the ethnohistoric nor ethnographic data from the region. In reviewing the available literature we were able to identify only two ethnographic accounts of Native American gar consumption. Speck (1909, p. 23) recounts that for the Yuchi, gar are among those fish species ‘eagerly sought for by families and sometimes by whole communities at a time.’ While describing the flora and fauna of Central Florida, naturalist William Bartram describes the ‘great brown spotted garr [*sic*], accoutred [*sic*] in an impenetrable coat of mail’ (Bartram, 2001, p. 175). According to Bartram, the Native Americans of the region would ‘sometimes’ prepare gar by burying them whole beneath hot embers. Once fully cooked ‘the skin with the scales easily peel off, leaving the meat white and tender’ (Bartram, 2001, p. 176). This method of preparation would leave an archaeological signature of carbonised gar scales, and possibly other burnt bones. However, none of the gar remains enumerated in the above discussion were noted as being burned, carbonised, or calcined.

The accounts by Speck (1909) and Bartram (2001) are directly contradictory to other ethnographic data. In what

appears to be the earliest textual account of these fish, Le Page Du Pratz (1947, p. 277) describes gar flesh as ‘hard and not relishing’. It is admittedly unclear whether this statement reflects the preferences of Du Pratz or his Native American informant(s). However, by the historic period, certain Southeastern tribes had specific prohibitions against gar consumption. Gilbert (1943, p. 346) includes gar in the list of foods the Cherokee regarded as unclean: ‘since these creatures were subject to blood revenge on the part of their victims’. More recently, Cherokee linguistic studies by Altman (2006) and Cantrell (2005) have revealed that gar are not among the 11 named fish species considered edible or otherwise significant in Cherokee folklore. In their discussion of the gar remains from the early historic Cherokee town of Chota, Bogan and colleagues (1986) specifically note that gar were taboo, and therefore differentiate them from the general subsistence remains at the site.

Even in lieu of compelling ethnographic evidence for gar consumption, it is possible that gar were consumed by various Native American groups throughout the span of prehistory. However, the absence of corroborating ethnohistorical evidence reveals that the widespread interpretation of gar consumption is based on assumptions rather than supporting data. Traditional interpretations of gar as foodstuffs may also relate to historic Euro-American consumption, where they appear in several iterations of regional southern cuisine (e.g., Starr, 1989; Spitzer, 2010). Of longnose gar, Livingston (1996, p. 183) writes that despite being ‘permeated with tendons and fascia’, when properly prepared the flesh is ‘mild, boneless, and can be obtained in large quantities for social gatherings’. Commercial alligator gar fisheries existed historically in Alabama, Arkansas, Mississippi, Louisiana, and eastern Texas, and still operated as recently as 2001 in Louisiana (Ferrara, 2001).

Tools and personal decoration

Discussions of gar in online fishing forums and popular literature (e.g., Spitzer, 2010) regularly propose that historic Native Americans used the scales of these fish as arrow points. This function is at least partially intuitive, and relates to the triangular shape of the hard, bony scales (Fig. 10.3). Larger scales feature a small protrusion at their base that may be interpreted as a hafting element. The function of gar scales as arrowheads appears in ethnohistorical accounts from central Florida (Bartram, 2001) and Louisiana (Le Page Du Pratz, 1947) and has been generally proposed for archaeological assemblages (Agogino, 1992). However, of the archaeological reports listing identified gar remains, only Moore (1909) applies this interpretation for the finds of isolated alligator gar scales at Boytt’s Field, Arkansas and Bray Landing, Louisiana. Webb (1959) mentions this possible function in passing, but interprets the gar scales from both house and burial contexts at Belcher Mound,



Figure 10.3. Alligator gar (*Atractosteus spatula*) scales. Gar scales have been popularly interpreted as being used as arrow points by historic Native Americans, principally due to their overall shape.

Louisiana as evidence of foodstuffs.

As described above, there are several instances from the archaeological record of the Southeast where gar scales have been recovered archaeologically without (or with minimal) associated skeletal elements (e.g., Bogan, 1987; Webb, 1959). Although these examples have been interpreted as representing subsistence remains, it is tempting to instead view these finds as examples of scales being curated for use as arrow or dart points. This is particularly true in cases where only single scales are recovered (Baden, 1983; Breitburg, 1998; Peres, 2010; Peres and Ingalls, 2008a, 2008b). However, in his discussion of archaeological gar remains from Tennessee, Faulkner (1992) notes that few scales recovered from the archaeological record of the state exhibit morphological evidence of use, either from sharpening or in the form of polish resulting from hafting. Similarly, none of the sources we reviewed for this discussion identify evidence of sharpening or hafting of gar scales.

Although we are unable to identify any ethnographic or ethnohistorical evidence of gar being used as costume elements, there are three possible archaeological examples. At the site of Indian Knoll, Kentucky, ‘two gar heads or rostra’ were recovered from human burials, ‘possibly indicating their symbolic importance’ (Crothers, 2005, p. 309). Claassen (2015) interprets these as possible headdress elements. Excavations at the Westmoreland-Barber site on the Nickajack Reservoir in Tennessee recovered a sizable number of gar scales ($n=165$) from within the burial of a sub-adult human (Faulkner, 1992; Faulkner and Graham, 1965). The scales were arranged in three parallel rows along the left arm and pelvis of the individual. Some of the scales

had been notched and were interpreted as being sewn onto cloth or clothing. This interpretation is bolstered by the association of a number of gastropod shells, which were likely adornment, arranged parallel to the gar scales. Burial Pit 15 at the Belcher Mound site in Louisiana included ‘a mass of garfish scales’ that Webb (1959, p. 77) interprets as evidence of food. The precise arrangement of these scales within the grave are unclear, however their presence alongside numerous burial offerings including carved shell beads, shell cups, pearl beads, and a shell pendant suggests that they may have been part of ritual regalia.

Scratching and tattooing

Much of the available ethnographic and ethnohistorical data for gar use by Southeastern Indians describes the function of these species as related to practices of scratching and tattooing. During scratching, sharp objects were dragged across the skin of a recipient in prescribed patterns deep enough to draw blood and leave behind temporary scars. Scratching was performed among groups including the Seminole (Sturtevant, 1954), Cherokee (Mooney, 1909), Muscogee (Creek) (Romans, 1999), Catawba (Speck, 1944) and Yuchi (Speck, 1909) in conjunction with ballgames and annual ritual events including the Green Corn Busk, and as a medicinal practice and healing aid (Sturtevant, 1954). In these instances, scratching was intended to increase an individual’s endurance and tolerance for pain and perhaps act as a means of supplication. Meanwhile, dry scratching performed without the application of liquids to the skin to mitigate pain was used as a punishment and/or means of public shaming for both adults and children (Adair, 2005; Capron, 1953)

Ethnographic and ethnohistoric data reveal that there was not a pan-regional tool type used for scratching among the various indigenous groups of the Southeast. Instead, chroniclers record the use of gar teeth and jaws with intact dentition (e.g., Bartram, 2001; Fig. 10.4), as well as glass fragments, thorns, bird claws, and sets of bone needles hafted in frames made from turkey feathers. For example, Romans (1999, p. 146) records that Muscogee men were made to ‘frequently undergo scratching from head to foot through the skin with broken glass or gar fish teeth, so as to make them all in a gore of blood’. In addition to the Muscogee (Swan, 1855; Swanton, 1928a, 1928b), garfish jaw and/or tooth scratchers were used among the Seminole (Spoehr, 1942; Capron, 1953), Chickasaw (Adair, 2005), Catawaba (Speck, 1944) and Yuchi (Speck 1909). By the mid-20th century, gar and other pre-contact scratching implements had been almost entirely replaced by parallel arrangements of European steel needles (e.g., Spoehr, 1942; Capron, 1953). However, recent ethnographic work by Jesse Dalton (2011) has demonstrated that gar jaws continue to be used for scratching at Muscogee busks.

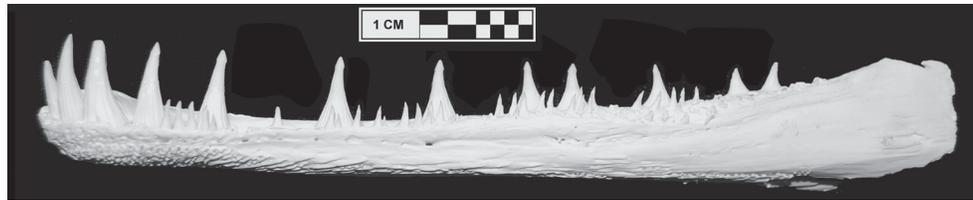


Figure 10.4. Alligator gar (*Atractosteus spatula*) mandible with partially intact dentition. Similar gar jaws continue to be used as scratching tools by contemporary Native American groups (after Deter-Wolf and Peres, 2013).

In addition to scratching, another facet of annual busks was a series of ritually-prescribed dances. These included the Garfish Dance, variations of which were performed historically among groups including the Chickasaw, Muscogee, Alabama, Seminole, Yuchi, Caddo, and Natchez (Howard and Levine, 1990; Jackson and Levine, 2002; Swanton, 1928b). Jackson and Levine (2002, p. 293) state that like other dances named for animals, the Garfish Dance ‘honors [*sic*] the entity that has provided food *and other necessities*’ (emphasis ours). We propose that the performance of the Garfish Dance alongside scratching was done not to acknowledge the gar as a food source, but to honour these fish for providing the essential ritual tools.

Tattooing, the deliberate insertion of pigment beneath the epidermis to create permanent patterns and designs, was practised by many or most Native American cultures in the Southeast prior to the 1700s (Deter-Wolf, 2013a, 2013b; Deter-Wolf and Peres, 2013). As with scratching, there does not appear to have been a single tattoo tool type for the region. However, ethnographic accounts identify gar teeth used as tattoo implements among the Chickasaw (Adair, 2005) and Chitimacha (Gatschet, 1882). Experimental testing by the authors (Deter-Wolf and Peres, 2013) suggests that gar dentition were less functionally suited to successful tattooing than sharpened bone implements. However, other researchers have used gar teeth to tattoo with satisfactory results (Isaac Walters, pers. comm.).

Deter-Wolf (2014) has recently identified interpretive issues in the perceived overlap of ancient tattooing and scratching technologies from the Southeast, and it may be that the two ethnohistorical accounts of gar teeth being used to tattoo reflect misunderstandings on the part of the European chroniclers. Nevertheless, the specific association of gar mandibles with scratching and tattooing in the ethnographic and ethnohistoric record suggests that archaeological finds of these elements, particularly in the absence of additional skeletal material, should be interpreted primarily as evidence of body ritual. Although there is not presently direct evidence of tattooing or scratching extending back to the Archaic period, the gar rostra from Indian Knoll (Crothers, 2005) presents possible evidence of tools used for these practices. Similar interpretation should

be applied to the three gar mandibles from Hiwassee Island (Lewis and Kneberg, 1946) and two gar dentaries recovered from a grave at the late Mississippian period David Davis site in Tennessee (Peres and Ingalls, 2008b).

Animals as amulets, talismans, bundles

In addition to providing raw materials and subsistence, animals play a fundamental role in Native American culture based on factors including their natural habitat, appearance, attributes, spiritual essence and role in oral histories (e.g., Claassen, 2014; Deter-Wolf and Peres, 2013). This significance was not limited to food species, but also included creatures with associated dietary taboos. In their discussion of faunal remains from the historic Cherokee settlement of Chota, Bogan and colleagues (1986, p. 471) note that ‘even animals such as vultures, owls, or snakes that were considered unclean to eat were used in medicine and fetishes’.

Totems and talismans made in part or whole from animal remains or created as animal effigies are common objects in cultures worldwide. These objects served a variety of functions at both the personal and corporate level in traditional Native American society, including providing both physical and spiritual protection, demonstrating lineage, tribal or spiritual affiliation, and as means to enhance luck or augment specific physical attributes (e.g. Howard and Lena, 1984; Mooney, 1902). The gar is the historic tribal emblem of the Koasati (Coushatta) tribe of Louisiana, and in the late nineteenth or early 20th century was carved on the front posts of the Koasati tribal leader’s bed (Sawnton, 1928b). Swanton (1928b) records that the Koasati had a large carved wooden gar that was used in ritual dances. Today the gar appears as the central element on the official seal of the Koasati, where it represents courage, wisdom, strength, and discipline (Healy and Orenski, 2003). Among the Miccosukee in Florida, a dance was performed after men returned to the village following prolonged hunts in the fall, during which the male participants held wooden gar totems (Swanton, 1928b).

Historic and prehistoric Native Americans curated powerful and important animal remains within ritual

containers traditionally glossed as ‘medicine bags’, but more properly identified as sacred bundles. These items are generally defined (after Hanson, 1980) as being one or more objects stored within a woven case or animal skin cover that functioned as a repository and focal point for the transfer of supernatural power. Sacred bundles and the objects they contained played an essential role in the spiritual belief and ritual practice of indigenous groups throughout North America (Pauketat, 2013), and were invoked and deployed in support of specific ritual activities such as healing, the initiation of warfare, scratching and tattooing.

It is possible to identify sacred bundles archaeologically based on the presence of various non-food animal remains in discrete contexts (e.g., Deter-Wolf *et al.*, 2013; Russell, 2012; Webb, 1974). The gar dentaries recovered from the David Davis site were associated with two cut bear (*Ursus americanus*) canines, a beaver (*Castor canadensis*) incisor, a drilled raccoon (*Procyon lotor*) baculum, 37 shell beads, an antler cylinder, and a large mammal long bone diaphysis that was altered on both ends (Peres and Ingalls, 2008b). While the gar dentaries are likely scratching implements, the assemblage as a whole may be interpreted as the remains of a sacred bundle.

Another notable example of gar includes a sacred bundle deriving from the Warren Wilson site in North Carolina, where garfish scales were recovered from within a grave that also contained numerous artefacts including a knobbed whelk (*Busycon carica*; identified incorrectly as conch in Dickens 1976, p. 107) filled with red ochre and resting on the left shoulder of the buried individual. The garfish scales were surrounded by red ochre and scattered around the whelk and just below the terminal phalanges of a panther (*Felis concolor*). Although the shell was originally interpreted as a bowl, Deter-Wolf and Peres (2014) have suggested that whelk shells could also function as bundle wrappings. In this case, the gar scales, ochre, and panther claws all may have been contained within a sacred bundle alongside the whelk.

Finally, the Ervin site, located on the Duck River in Tennessee, yielded gar along with 15 additional species of fauna and burned human bone from within a single feature (Hofman, 1986). Although the gar remains from this feature were originally included in the discussion of food animals, the faunal remains may have been part of a bundle deposited alongside a cremation (cf. Russell, 2012).

Builders’ rites, votive deposits

Unique animal deposits often mark construction episodes and other events associated with buildings and public architecture. The Maya commonly deposited parts of non-food animals during the construction of public buildings and monuments (Russell, 2012). A number of sites spanning the Archaic, Woodland, and Mississippian periods have produced gar remains in association with mounds or other

earthmoving activities. Given their contextual associations, it is plausible that these remains were purposefully deposited during construction of public monuments (mounds) or structures, rather than as food waste.

The early Archaic mound site of Watson Brake in Louisiana yielded more than 500 gar scales in a core sample taken from Mound B (Saunders *et al.*, 2005), and an additional 811 elements from Mound Stage 1 and sub-mound deposits (Jackson and Scott, 2001). The recovery of these remains from core samples provides little contextual data regarding their relationship to either mound construction activity or (as originally interpreted) evidence of site-level subsistence patterns. However, the material from Watson Brake comprises the greatest quantity of gar remains from a single site dating to the Archaic period that we identified in our literature review. Similarly, gar scales were noted by Moore (1909, p. 19) on the sub-mound surface at the Woodland period Booth Landing mound site in Louisiana, along with mussel shell, pottery, and human remains. Given the dearth of corroborating evidence for gar consumption it seems appropriate to re-examine the remains from these sites as possible evidence of builder’s rites or offerings associated with mound construction.

Conclusion

It is widely accepted that some animals served as food resources for people in the past. However, human-animal relationships are, and were, much more complex than the simple equation ‘animals equal meat’. Animal remains recovered from valid archaeological contexts have much to tell us about social and political systems, worldviews, and rites-of-passage of the indigenous peoples of the American Southeast. By using every data category available to us, including associated artefacts, ethnographic and ethnohistoric literature, and biological data, we are able to offer a more multifaceted interpretation of the gar’s place in the lives of ancient peoples. Through these multiple lines of evidence we have shown that although garfish may have been eaten by some Southeastern Indians, they were also – and perhaps more frequently – used in a variety of ritual activities, including scratching, as offerings during mound building and as elements of sacred bundles, as well as adornment on clothing. Thus our review of published sources and resulting reinterpretations gives us a more robust picture of past gar fish use by prehistoric Southeastern Indians.

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