Fishing to Survive: Minorcans in Britain's Smyrnéa Settlement, Florida, North America, 1766-1777

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ABSTRACT: Established by Dr. Andrew Turnbull, a Scottish physician and entrepreneur, the Smyrnéa settlement was an agricultural enterprise that existed from 1766 to 1777 during the British occupation of Florida. Turnbull recruited approximately 1,100 indentured servants from the Mediterranean island of Minorca along with an additional 300 from Greece, Italy, Corsica, and Turkey. Within the Smyrnéa settlement, the developing cohesion of these various Mediterranean groups over time eventually led to the emergence of a distinctive «Minorcan» cultural community on the Florida frontier. Although there is substantial historical documentation pertaining to this settlement, archaeologists have only recently begun to uncover its structural and material cultural remains and add to our knowledge of colonial life in eighteenth-century Smyrnéa. Analysis of the ca. 5,000 faunal remains from the Turnbull Colonist's House site, the first residence to be discovered, indicates that British food supplies were indeed inadequate and that the colonists took the initiative in securing protein in their diet primarily by fishing. Remains of ray-finned and cartilaginous fishes were highly abundant in the examined samples and consisted of 26 taxa of local estuarine waters.

KEYWORDS: FISH, ESTUARIES, MIDDENS, MINORCANS, BRITISH COLONIAL FLORIDA

RESUMEN: Fundado por el Dr. Andrew Turnbull, un médico escocés, el asentamiento de Smyrnéa fue una explotación agrícola durante la ocupación británica de la Florida desde 1766 a 1777. Turnbull reclutó a unos 1.100 sirvientes de la isla de Menorca a los que añadió 300 más procedentes de Grecia, Italia, Córcega y Turquía. La convivencia de estos grupos mediterráneos en Smyrnéa generó una comunidad cultural de marcado carácter «Menorquín» en la frontera de la Florida. Aunque existe abundante documentación histórica sobre el asentamiento, sólo recientemente han comenzado los arqueólogos a descubrir restos estructurales y otros elementos culturales que permiten incrementar nuestros conocimientos acerca de la vida en Smyrnéa durante el siglo XVIII. Los análisis de las muestras zooarqueológicas recuperadas en la mansión de Turnbull, la primera residencia allí descubierta, indican que los alimentos de origen británico resultaron insuficientes por lo que los colonos hubieron, entre otros, asegurar el aporte de proteínas en su dieta practicando la pesca en los estuarios próximos a dicho asentamiento.

PALABRAS CLAVE: PECES, ESTUARIOS, CONCHEROS, MENORQUINOS, FLORIDA COLONIAL BRITÁNICA

INTRODUCTION

The Smyrnéa settlement was an agricultural enterprise that existed from 1766 to 1777 during the British occupation of Florida and whose primary purpose was to supply England with commercial crops. Founded by Dr. Andrew Turnbull, a Scottish-born physician and wealthy member of London society, the settlement was located in present-day New Smyrna Beach on the central east coast of Florida (Figure 1) and was peopled with indentured servants, the majority recruited from the Mediterranean island of Minorca, along with additional laborers from several other Mediterranean countries (Panagopoulos, 1978; Rasico, 1990; Griffin, 1991). Within the Smyrnéa settlement, these various Mediterranean groups eventually coalesced over time into a distinctive «Minorcan» cultural community (Griffin, 1991: 16, 21), characterized by family and community life centered around the Catholic church, certain kinds of holiday celebrations and festive social gatherings, and unique culinary traditions (Rasico, 1990). Although common geographic origin, intermarriage, and common religion were important factors contributing to this melding of cultures, the sharing of deprivations and hardships throughout the duration of the settlement was another significant unifying force (Griffin, 1991: 101). Not only did these peoples together endure strenuously difficult work and harsh punishments but also they suffered from chronic shortages of food supplies and consequently had to devise strategies for supplementing an otherwise inadequate diet (Griffin, 1991).

In this paper, I examine the vertebrate faunal assemblage recovered from the Turnbull Colonist's House site, the first residence to be discovered, with a particular focus on the fish remains represented. A brief historical overview of Turnbull's Smyrnéa settlement is presented followed by a discussion of the zooarchaeological analysis, the relative representation of fish remains, and the kinds of fish identified. Finally, the zooarchaeological findings are integrated with historical records to further demonstrate the essential role of fish and fishing among the «Minorcan» settlers at Smyrnéa as a means to overcome protein starvation.

HISTORICAL BACKGROUND: THE SMYRNÉA SETTLEMENT

Britain acquired Florida and the island of Minorca from Spain and France, respectively, as stipulated in the Treaty of Paris of 1763, at the end of the Seven Years' War (Rasico, 1990: 10-11). Britain, in turn, divided Florida into two administrative districts, East and West Florida, and St. Augustine was selected as the capital of East Florida (Tebeau, 1971: 75-77; Rasico, 1990: 12, 14). Almost immediately, Britain began a concerted effort to stimulate interest in and attract new settlers to both Floridas (Panagopoulos, 1978: 10-11; Griffin, 1991: 4). Dr. Andrew Turnbull partnered with two other prominent members of British society to establish a large plantation in East Florida as a business venture, and they were awarded a substantial amount of land and government support. Turnbull was to serve as plantation manager, handling all the practical aspects, recruiting and transporting colonists, and personally overseeing the plantation operation (Tebeau, 1971: 82; Panagopoulos, 1978: 13, 18; Rasico, 1990: 16-18; Griffin, 1991: 7).

In fall 1766, Turnbull sailed to East Florida to choose the location and begin preparations for the plantation settlement. He selected an area 121 km (75 mi) south of St. Augustine, along the Indian River Lagoon on the central east coast of Florida (Tebeau, 1971: 82; Panagopoulos, 1978: 15; Rasico, 1990: 17, 36; Griffin, 1991:7, 8-9) (see Figure 1). The governor of East Florida named the new settlement New Smyrna after the birthplace of Turnbull's wife, María Gracia Dura Bín (Rubini), who was born in Smyrna (Griffin, 1991: 10), today's Izmir in western Turkey. But Turnbull changed the name to Smyrnéa which, he claimed, was "bad Greek for New Smyrna" (Turnbull, 1768a).

Upon returning to Britain in March 1767, Turnbull began searching for capable laborers to work on the plantation. He preferred enlisting Mediterranean peoples because he thought they were accustomed to farming in a hot climate (Panagopoulos, 1978: 13; Griffin, 1991: 3, 6). He turned to the island of Minorca where a three-year crop failure had left many subsistence farmers starving and destitute (Tebeau, 1971: 82; Panagopoulos, 1978: 44; Rasico, 1990: 24). Turnbull recruited about 1,100 Minorcans as well as an additional 200 laborers from Greece and another 100 from Italy,

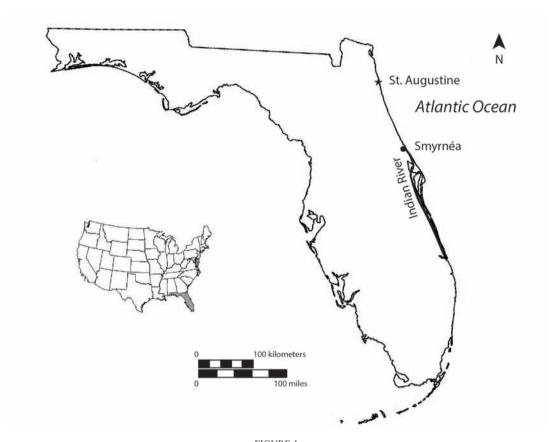


FIGURE 1

Map of Florida showing location of Smyrnéa settlement.

France, Corsica, and Turkey (Tebeau, 1971: 82; Rasico, 1990: 26-27). These prospective colonists were required to agree to a contract specifying that they would serve as indentured servants in the new settlement (Panagopoulos, 1978: 46-48; Rasico, 1990: 28-31; Griffin, 1991: 24-26).

In April 1768, Turnbull assembled his 1,403 prospective colonists, loaded them onto eight ships, and set sail from Gibraltar for East Florida (Panagopoulos, 1978: 48; Rasico, 1990: 23-24; Griffin, 1991: 13, 28). The voyage took between 2½ to 4 months (Griffin, 1991: 28). Hardships at sea, particularly scurvy and infections, took their toll in lives. The number of colonists who arrived in Florida had been reduced to 1,255 people (Panagopoulos, 1978: 54; Rasico, 1990: 31, 42; Griffin, 1991: 28-29). To worsen the situation, housing and supplies had been readied for only about half this number of people (Panagopoulos, 1978: 58, 82; Rasico, 1990: 36; Griffin, 1991: 45).

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The Smyrnéa settlement was laid out in a linear orientation along the west bank of the Indian River with colonists' houses built on a narrow strip of land extending a distance of about 13 km (8 miles). Plantation fields were located immediately west of the settlers' dwellings (Griffin, 1991: 43, 46-48). Although a number of commercial crops were raised by the settlement, the primary agricultural focus was the growing and processing of indigo, a brilliant blue dye that commanded a high price in Europe (Panagopoulos, 1978: 74; Rasico, 1990: 41; Griffin, 1991: 51-54).

Feelings of hopelessness, disillusionment, and anger were prevalent among the colonists even in the very early days of the settlement. From the onset, they suffered from inadequate and insect-infested housing, insufficient food, and rampant sickness and disease (Panagopoulos, 1978: 58-59, 82-83; Rasico, 1990: 36-37; Griffin, 1991: 32). In addition, they endured arduous working condi-

tions, and their overseers often mistreated and inflicted extremely cruel punishments on them (Panagopoulos, 1978; Rasico, 1990; Griffin, 1991). Such deplorable circumstances continued to persist over time, and discontent among the colonists eventually came to a critical head. Having learned of their dire circumstances, the governor of East Florida had the colonists' indentures cancelled and invited them to settle in St. Augustine (Tebeau, 1971: 83; Panagopoulos, 1978: 150-152; Rasico, 1990: 52-53; Griffin, 1991: 30). Consequently, the people left, and the Smyrnéa settlement came to an end in 1777. The plantation was virtually abandoned by most of the surviving colonists, who fled en masse to the safety and security of St. Augustine (Panagopoulos, 1978: 152; Rasico, 1990: 53-54). The descendants of these original "Minorcans" have since continued to live in St. Augustine up to the present day where they still maintain their cultural traditions (Rasico, 1990; Griffin, 1991).

MATERIALS AND METHODS

Although there is substantial historical documentation pertaining to the Smyrnéa settlement, only within the past 15 years have archaeologists been able to locate and systematically uncover its structural and material cultural remains. Archaeological excavations of the Turnbull Colonist's House, the first residential site of the Smyrnéa settlement to be identified, were conducted in 1996 and 1997 (Grange, 1999) (Figure 2). This tworoom building, which may have housed two families, was rectangular, measuring 4 m (13.1 ft) wide and 8.4 m (27.5 ft) long. The house had a central chimney, fireplaces, and hearths made of coguina, and a floor consisting of mortar mixed with sand and shell (Grange, 1999: 77-81; Grange & Moore, 2003: 223-225). The excavations focused on the house structure and refuse midden areas located outside and west of the house. Excavation units



FIGURE 2

Excavation of Turnbull Colonist's House, south room: base of coquina stone chimney and fireplace shown mid-right in photo.

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were dug in 5 to 10 cm arbitrary levels within natural strata. Faunal remains came from two midden deposits (Midden 1 and Midden 2), two column samples (one from each midden), and several additional test units (Figure 3). Only vertebrate remains were recovered. Mollusks, though visibly present at the site, were not systematically collected.

Midden 1 was a low circular shell midden. Soils were screened using 6.4 mm (1/4 in) mesh gauge. Midden 2, located 2 m to the north and west of Midden 1, was a relatively deep deposit. As this deposit appeared to contain many small animal bone remains, these soils were screened through a finer sieve, or 3.2 mm (1/8 in) mesh. In addition, a column sample, measuring 50 cm x 50 cm, was taken from Midden 1, and another measuring 25 cm x 25 cm was collected from Midden 2. Both soil samples were screened with 1.6 mm (1/16 in) mesh.

The study of the animal remains followed standard zooarchaeological procedures (Reitz & Wing, 2008). Specimens were identified to the lowest

taxon possible using the comparative reference collections housed in the Department of Anthropology, Florida Atlantic University, and the Environmental Archaeology laboratory, Florida Museum of Natural History, University of Florida. Ouantification of the faunal materials included a count of the total number of fragments identified for each taxon (number of identified specimens, or NISP) and calculated estimates of the minimum number of individual animals represented (MNI). The MNI determinations were based on the concept of paired elements and individual size. Each major grouping (e.g., Midden 1) was treated as a discrete sample and quantified separately. These quantifications were subsequently combined to determine totals for the entire site assemblage.

RESULTS

Over 5,000 bone and tooth fragments were identified from all sampled areas in the Turnbull

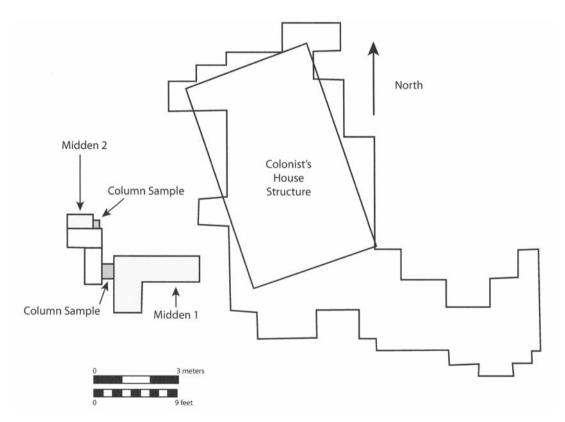


FIGURE 3
Map showing area of excavations.



faunal assemblage. Of particular significance was the relative proportion of wild versus domestic animals in the diet (Table 1). Native wild fauna predominated, accounting for 92% of the total MNI. Introduced Old World domesticates, which consisted mostly of pig, cow, and chicken, constituted only 8% of the total MNI.

Major Faunal Group	NISP%	MNI%	
Wild Fauna	98.37%	92.11%	
Domestic Fauna	1.63%	7.89%	
Totals	100.00%	100.00%	

TABLE 1
Wild versus domestic fauna.

Ray-finned fishes predominated in all samples examined, constituting 66% of the total MNI. Cartilaginous fishes comprised 12% of the total MNI. Mammals constituted 14% of the MNI, and birds 6% of the MNI. Reptiles and amphibians were of minimal importance, each constituting less than 3% of the total MNI. Table 2 presents summary tabulations, comparing total NISP and MNI by vertebrate class for the entire site assemblage. Tables 3-5 give the relative abundance of each vertebrate class in the larger samples examined.

Class	NISP (%)	MNI (%)	
Chondrichthyes	226 (4.72)	33 (11.96)	
Actinopterygii	4180 (87.28)	181 (65.58)	
Amphibia	2 (0.04)	2 (0.72)	
Reptilia	38 (0.79)	6 (2.18)	
Aves	106 (2.21)	16 (5.80)	
Mammalia	237 (4.95)	38 (13.77)	
Totals	4789	276	

 $\label{eq:TABLE 2} Turnbull \ faunal \ assemblage-totals \ by \ vertebrate \ class.$

A total of 20 ray-finned and 6 cartilaginous fish taxa were represented. Table 6 presents a list of all fish taxa represented and their quantification. A description of the fish identified in the Turnbull faunal assemblage follows.

Class	NISP (%)	MNI (%) 25 (32.47) 34 (44.16)	
Chondrichthyes	200 (29.94)		
Actinopterygii	332 (49.70)		
Amphibia	1 (0.15)	1 (1.30)	
Reptilia	7 (1.05)	2 (2.60)	
Aves	22 (3.29)	3 (3.90)	
Mammalia	106 (15.87)	12 (15.58)	
Totals	668	77	

TABLE 3

Midden 1 – totals by vertebrate class.

Class	NISP (%)	MNI (%)	
Chondrichthyes	13 (0.58)	3 (3.49) 66 (76.74)	
Actinopterygii	2071 (92.62)		
Amphibia	1 (0.04)	1 (1.16)	
Reptilia	29 (1.30)	2 (2.33)	
Aves	43 (1.92)	4 (4.65)	
Mammalia	79 (3.53)	10 (11.63)	
Totals	2236	86	

TABLE 4
Midden 2 – totals by vertebrate class.

Class	NISP (%)	MNI (%)	
Actinopterygii	733 (98.13)		
Aves	5 (0.67)	1 (2.94)	
Mammalia	9 (1.20)	2 (5.88)	
Totals	747	34	

 $\label{eq:TABLE 5} TABLE \; 5$ Column Sample Midden 2 – totals by vertebrate class.

DESCRIPTIONS OF FISH

In the zooarchaeological assemblage, fishes were dominated by species that are typically found in Florida's shallow estuarine waters and that still occur in the Indian River Lagoon today. The most

Scientific Name	Common Name	NISP	NISP%	MNI	MNI%
Cartilaginous Fishes					
Carcharhiniformes	requiem sharks	161	3.65%	24	11.21%
Selachii	sharks	1	0.02%		
Pristis spp.	sawfish	9	0.20%	3	1.40%
Aetobatus narinari	spotted eagle ray	4	0.09%	2	0.93%
Rhinoptera bonasus	cownose ray	35	0.79%	4	1.87%
Rajiformes/Myliobatiformes	skates/rays	5	0.11%		
Chondrichthyes	cartilaginous fishes	11	0.25%		
Total Cartilaginous Fishes		226	5.13%	33	15.42%
Ray-Finned Fishes					
Ariopsis felis	hardhead catfish	480	10.89%	36	16.82%
Bagre marinus	gafftopsail catfish	50	1.13%	8	3.74%
Ariidae	sea catfishes	171	3.88%	4	1.87%
Siluriformes	catfishes	32	0.73%		
Mugil spp.	mullet	535	12.14%	31	14.49%
cf. Mugil sp.	mullet	1	0.02%		
Belonidae	needlefishes	1	0.02%	1	0.47%
Pomatomus saltatrix	bluefish	4	0.09%	1	0.47%
Caranx hippos	crevalle jack	1	0.02%	1	0.47%
Carangidae	jacks	1	0.02%	1	0.47%
Archosargus probatocephalus	sheepshead	326	7.40%	42	19.63%
Lagodon rhomboides	pinfish	23	0.52%	11	5.14%
Sparidae	porgies	281	6.38%		
Sparidae/Sciaenidae	porgies/drums	4	0.09%		
Cynoscion spp.	seatrout	39	0.89%	6	2.80%
Micropogonias undulatus	Atlantic croaker	3	0.07%	3	1.40%
Pogonias cromis	black drum	19	0.43%	7	3.27%
Sciaenops ocellatus	red drum	79	1.79%	15	7.01%
cf. Sciaenops ocellatus	red drum	1	0.02%		
Sciaenidae	drums	105	2.38%	1	0.47%
cf. Sciaenidae	drums	2	0.05%		
Perciformes	perch-like fishes	11	0.25%	1	0.47%
Paralichthys spp.	flounder	189	4.29%	12	5.61%
Actinopterygii	ray-finned fishes	1822	41.35%		
Total Ray-Finned Fishes		4180	94.87%	181	84.58%
TOTAL ALL FISHES		4406	100.00%	214	100.00%

TABLE 6 Fish taxa with quantification.



common fishes represented were sheepshead, hardhead catfish, and mullet. Sheepshead (*Archosargus probatocephalus*), an inshore marine species, frequents Florida's brackish bays and estuaries (Goodson, 1976: 64; McClane, 1978: 116-117; Robins *et al.*, 1986: 181; Alden *et al.*, 1998: 263). Hardhead catfish (*Ariopsis felis*) prefers high salinities but can tolerate a wide salinity range (McClane, 1978: 83-84). Mullet (*Mugil* spp.), also common in Florida's coastal waters, tends to travel in dense schools (McClane, 1978: 265; Robins *et al.*, 1986: 211-212; Alden *et al.*, 1998: 266).

Other fish represented in significant numbers included flounder and several members of the drum family. Flounder (Paralichthys spp.) is a bottom-dwelling carnivorous fish and occurs in shallow marine and brackish coastal waters (Goodson, 1976: 137-138; McClane, 1978: 156-157; Robins et al., 1986: 288). Drums (Sciaenidae) included red drum (Sciaenops ocellatus), which was the most abundantly represented, black drum (Pogonias cromis), seatrout (Cynoscion spp.), and Atlantic croaker (Micropogonias undulatus). A very common fish group along the South Atlantic coast, these bottom-dwelling fishes occur in Florida's warm shallow turbid bays and estuaries (Goodson, 1976: 54; McClane, 1978: 118-129; Robins et al., 1986: 184; Alden et al., 1998: 264).

Other fish present included pinfish and gafftopsail catfish. Pinfish (*Lagodon rhomboides*) is a small inshore fish that most commonly occurs on shallow marine grassy flats (McClane, 1978: 113; Alden *et al.*, 1998: 264). Gafftopsail catfish (*Bagre marinus*) prefers intermediate salinities and is usually found in brackish bays and estuaries (McClane, 1978: 83; Robins *et al.*, 1986: 83; Alden *et al.*, 1998: 258).

Several fish were minimally represented. Bluefish, crevalle jack, and needlefish were represented by only one to a few bones apiece. Both bluefish (*Pomatomus saltatrix*) and crevalle jack (*Caranx hippos*) are large fast-swimming highly predaceous fish. Typically occurring offshore, they move in schools and may migrate to inshore shallow waters where they feed on resident fishes (Goodson, 1976: 19, 128; McClane, 1978: 144-147; Robins *et al.*, 1986: 155-156, 159; Alden *et al.*, 1998: 260, 261). Needlefishes (Belonidae), also voracious predators that feed on small fishes, are elongated surface-dwelling fishes that occur in tropical coastal waters and enter salt marsh tidal creeks (Goodson, 1976: 170; McClane, 1978: 73-

74; Robins *et al.*, 1986: 105; Montague & Weigert, 1990: 504).

A number of cartilaginous fishes were identified. Sharks were represented by vertebrae of requiem sharks (Carcharhiniformes). Rays were represented by cownose ray (*Rhinoptera bonasus*) and spotted eagle ray (*Aetobatus narinari*) dental plates. Several sawfish (*Pristis* spp.) vertebrae were also identified. The cartilaginous fishes identified typically enter estuarine waters and salt marsh tidal creeks (McClane, 1978; Robins *et al.*, 1986; Montague & Wiegert, 1990: 504) where they were probably taken.

ZOOARCHAEOLOGICAL EVIDENCE AND HISTORICAL RECORDS

The zooarchaeological assemblage clearly indicates that most of the meat portion of the colonist diet came from local animal resources, especially fish, rather than from provisions supplied by the British. The latter, consisting of Old World domestic animals, accounted for only a small proportion of the diet (see Table 1). According to historical documents, such domestic meats were derived from rations shipped to the settlement and from the products of livestock brought in and raised by Turnbull and his overseers. Indeed, maintaining adequate food supplies to feed the overpopulated settlement was a perpetual problem. Accounting records show invoices and itemized purchases of huge amounts of food supplies, particularly livestock and barrels of pork and beef, ordered by Turnbull and shipped to Smyrnéa from the other British colonies (Laurens, 1768; Turnbull, 1768b, 1770, 1771). But, despite Turnbull's attempts to sustain his work force, hunger and sickness prevailed among the colonists.

According to the faunal evidence, the colonists supplemented their basic provisions by resorting to fishing and at times hunting subsistence activities in order to secure protein in their diet. Fortunately, their environs provided a wealth of natural resources. The Turnbull Colonist's House site, as well as the other colonist homes, was located along a terrace overlooking the tidal marshes of the Indian River Lagoon (Grange, 1999: 73). The Indian River Lagoon is an estuarine system dominated by salt marshes and tidal creeks. Salt marshes occur as open expanses of grasses, sedges, and rushes, which are regularly inundated with salt and brack-

ish waters. Winding through the salt marshes is a network of shallow tidal creeks (Montague & Wiegert, 1990; Whitney *et al.*, 2004: 270). This estuarine system is abundant in a number of marine and brackish-water fish species, and the colonists apparently took advantage of these resources.

Historical accounts also attest to the rich resources in the Indian River Lagoon region and the colonists' procurement and use of such food sources. A British cartographer hired to map this region in the mid-1760s noted the fine fish, "as trouts, mullets, sheep heads, drums, bass & porgies" (De Vorsey, 1971: 38). Turnbull himself claimed that each house was along the bank "of a River alive with Fish" (Turnbull, 1768b). In other accounts, he wrote that "many families had great quantities of dried fish in their homes" (Rasico, 1990: 58) and that they could not have subsisted without fish (Turnbull, 1773).

Historical records mention Minorcan canoes and their extensive knowledge of local fishing, indicating that the colonists most likely fished at every available opportunity (Griffin, 1991: 63) as further supported by the zooarchaeological record. Interestingly, the striped mullet (*Mugil cephalus*) that the colonists frequently caught in the tidal lagoon at Smyrnéa was already familiar to these Mediterranean peoples, as this same species also occurs in the Mediterranean Sea (Lythgoe & Lythgoe, 1992: 208). In fact, smoked mullet is a prized delicacy among the Minorcans living in St. Augustine today (Griffin, 1991: 63).

Historical documents also refer to the limitations and challenges faced by the colonists engaged in fishing subsistence activities. The colonists were required to work very long hours, often including nights and holidays, on the plantation and consequently had little spare time for other endeavors (Griffin, 1991: 65). Fishing may have been discouraged and was probably not even feasible initially during the early period of the settlement when the colonists were busy clearing land and erecting houses and at times later on when cash crops were being harvested (Panagopoulos, 1978: 58; Griffin, 1991: 40). The colonists may have suffered from protein starvation in their diet especially in the early Smyrnéa years (Griffin, 1991: 41). Indeed, balancing cash cropping and subsistence activities surely must have posed a continual challenge for the colonists throughout the duration of the settlement's existence (Griffin, 1991: 63).

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SUMMARY AND CONCLUSIONS

The zooarchaeological evidence from the Turnbull Colonist's House site demonstrates that supplies of domestic meats, as provided by the British, were indeed inadequate and that the major source of protein in the Smyrnéa colonist diet came from locally available fish. Although a number of historical records mention that the colonists engaged in fishing subsistence activities and consumed fish, these documents do not indicate the extent of such activities or the degree to which the colonists subsisted on these foods. The archaeological faunal record thus supplements the information contained in such written accounts by demonstrating that not only did the Smyrnéa colonists take their own initiative to procure additional protein foods by resorting to fishing, but also they greatly depended upon local fish resources in order to survive.

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