

SECTION 6

GARUM AND SALTED TUNA. GADES, MAIN PORT OF ATLANTIC-MEDITERRANEAN TRADE

Like all Roman cities, Gades had an economy based on agriculture and livestock, derived from the exploitation of its hinterland. But the uniqueness of the cities of the *Fretum Gaditanum* lay in their large fish-salting factories (*cetariae*), both urban and peri-urban, where tuna was processed and the famous fermented fish sauces, *garum*, were produced.

These products gave Cádiz great renown in Rome, from Phoenician times until the end of Antiquity. Several salting factories have been excavated in the city of Cádiz, easily recognizable by the vats where fish was macerated, with notable examples being those at the former Teatro Andalucía and the Teatro Cómico, both located on the shores of the inter-island strait and now museums.

The importance of Gaditanian-Roman fishing is masterfully illustrated by the reverses of the coins from the Gadir/Gades mint, which chose tuna as their emblem, a cornerstone of their economy.

Gades also benefited from possessing one of the most important port facilities of the *Mare Nostrum*, which were improved by Balbus the Younger, who built a new *Portus Gaditanus* on the mainland. In Antiquity, international trade was carried out exclusively through so-called principal ports, equipped with great lighthouses such as that of Cádiz. Goods from the surrounding regions arrived there and from these ports set out the large merchant vessels. This was the so-called redistributive trade.



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Desempolvando su pasado

Ports have very limited archaeological visibility, as they usually lie buried beneath modern ones, the result of urban growth. Their study therefore requires very complex geoarchaeological techniques.

Recently, studies of this type at the Valcárcel Building have demonstrated the existence of nearly 25 meters of port silts at the bottom of the inter-island strait, and have suggested the presence of a possible Roman breakwater in this area, different from the one mentioned by Strabo.

The Halieutic Testaccio of Gades

Excavations beneath the El Olivillo Business Transfer Building, next to today's La Caleta beach, revealed some years ago an artificial mound about 20 meters high, used since the mid-1st century BC as a peri-urban dump for the city.

Similar to Rome's Monte Testaccio, it was composed mainly of discards from maritime traffic (amphorae) and from the fish-preserving industry. Initiated by the Corneliu Balbi, it was one of the peri-urban landfills of Gades, traces of which were still visible in 18th-century historical maps.

Recent preventive archaeological activity at Calle Felipe Abarzuza 2 has expanded our knowledge of its perimeter and function, which lasted until the end of the 1st century AD.



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Garum, a Delicacy not only for Emperors...

The two products manufactured by the Romans were the *salsamenta* (blocks of salted fish, similar to dried salted cod or *mojama*) and the fermented fish sauces.

The latter, generically called *garum*, resulted from the fermentation of fish blood and entrails through the action of enzymatic. After several weeks of maceration, this produced a kind of paste which, once filtered, yielded a liquid amber-colored product —the prized *garum*— and a “pâté” known as *allec*.

There were different qualities and names, and we know that these products could be aged for up to four years, improving their gastronomic properties and, of course, increasing their price. Unlike earlier times, in Rome their consumption became widespread, and they were used daily in cooking, as the recipes in Apicius’ *De Re Coquinaria*, a renowned chef of Tiberius’ era, remind us.

Slaves, freedmen, and soldiers consumed *muria*, *allec*, or low-quality *liquamen*, while *Garum Himation* (made from tuna blood) was reserved for the wealthier municipal elites and frequently reached the emperors’ tables in Rome’s *Palatinum*.

To study and understand these foodstuffs and the technological processes behind their manufacture, it is useful to follow the stages of the so-called “halieutic cycle,” or fishing-preserving industry, since information may come from the fisheries themselves all the way to inland areas of consumption, where these delicacies were delivered.



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Amphorae, the Canned Goods of Antiquity

These vessels were designed for maritime trade, easily stowed in the holds of ships, minimizing breakage during handling. They were used for long-distance trade, especially of oil, wine, and salted fish.

Their typology allows us to determine chronology and geographical origin, since each micro-region produced different amphorae, which changed according to fashions. They were often imitated in attempts to introduce second-rate products into markets.

These *garum* amphorae illustrate the period of greatest splendor of Gades' commerce, between Caesar and the Antonine dynasty (50 BC – 200 AD), when these products reached every corner of the Roman Empire, especially those of the Dressel 7/11 family.

Gaditanian-Roman Shipwrecks with Metal Cargo

Alongside salted fish, the trade in metal ingots —especially lead and copper— was a key aspect of the Hispano-Roman economy. In the Bay of Cádiz, several such finds are known.

The *Arapal* wreck was discovered in 2017 in shallow waters off Sancti Petri, and was recently excavated and studied by a team from the University of Cádiz within its Master's program in Nautical and Underwater Archaeology.

A large cargo was documented, consisting of 78 ingots of almost circular shape (called “tortoises”), of varying sizes and weights (22–38 cm in diameter and 13–26 kg in weight), one of the largest known in the Mediterranean, dated to the first half of the 1st century AD.



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Archaeometric analysis shows that they were of practically pure copper (99%), with traces of lead, silver, and arsenic, suggesting their origin in the pyrite mines of the southwestern Iberian Peninsula, possibly around the Sierra Morena.

Since only metal was found, it is likely this represents an intermediate stage prior to redistribution, in which the metal was first brought to the great port of Gades before being commercially re-exported.

The “White Gold” of Antiquity

The ancient fish-preserving industry required tons of salt in order to conserve food. In the Bay of Cádiz, all the geomorphological conditions necessary for salt production by evaporation were present: big tides, large flat basins near the coast, and high temperatures.

Archaeologically, it is difficult to identify the ancient *campi salinarum*, since their remains are very ephemeral and salt has been produced continuously since antiquity. Rock salt was also important in antiquity, known to have been widely extracted in the Cádiz highlands (city of Iptuci – present-day Prado del Rey).

