

# [Brill's New Pauly](#)

## Transport amphorae

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### I. Definition and ancient terminology

Transport *amphorae* (TA) are two-handled ceramic vessels manufactured for the transportation and storage of foodstuffs. The Latin term *amphora* derives from the Greek ἀμφορεύς/*amphoreús*, from the older ἀμφιφορεύς/*amphiphoreús* (Hom. Il. 23,92; 23,170); the term is also used for the vessels nowadays called *stamnos* and *pelike* (cf. [Pottery A.](#); [Amphora 11](#); with ill.). Unpainted TA were more frequently referred to as κέραμος/*kéramos* or κεράμιον/*kerámion* (Hom. Il. 9,46; Hdt. 3,6) and ἀγγεῖον/*angeíon* (Ps.-Aristot. Mir. 136). The Greek terms δίωτος/*díōtos* ('two-handled', literally 'two-eared') and κάδος/*kádos* were adopted into Latin as *diota* and *cadus*. *Kádos* probably derives from the Semitic noun *kd* ('bellied vessel') [1]. In Hebrew, *amphora* appears only as a late borrowing from the Greek: □*mpwrh*.

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### II. The Bronze Age

TA were invented in Northern Syria and Cilicia during Early Bronze Age II (2900-2600) [2; 3; 4]. Still during the 3rd millennium BC, these *amphorae* were slightly adjusted to the requirements of shipboard transportation, receiving less of a belly and a lesser capacity. They were also adjusted to the Pharaonic system of measurements, and from the Middle Bronze Age onwards manufactured on the [potter's wheel](#); at the same time, they were given a more pointed base, to suit them better for stowage on board ship. After the middle of the 15th cent. BC, the Late Bronze Age versions were known in the countries of export (Egypt, Cyprus and Greece) as Canaanite TA [2; 3; 4]. The variant with short, straight neck, sharply defined shoulder, convex shoulder and side, and pointed base, was very widespread, particularly in the 12th cent. BC. From it developed the Iron Age Phoenician TA.

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### III. Forms and use

Greek TA have a flat base or base ring, thus revealing their derivation from household storage vessels. The clay-slick coat on Greek TA also indicates such a relationship. Not until the late 6th cent. BC did the foot of the Greek TA develop into a massive knob. This was subsequently also adopted for Punic *amphorae*, as providing a firm grip for emptying the vessel [5]. From the 8th to the 1st cents. BC, a tendency to ever longer and narrower vessels

may be noted in nearly all classes of Mediterranean *amphora*; this is probably to be explained by the changes in modes of ship-board stowage occurring at the same time, and by the developing links between individual regions and markets. Products shipped in *amphorae*, mainly [wine](#), [olive oil](#) and *garum* ([Fish dishes \(and seafood\)](#)), make up only a part of the wares traded in Antiquity. In the case of [transport by land](#), more secure containers may have been preferred to fragile, heavy *amphorae*. In the case of the c. 250,000 *amphorae* found in Elizavetovskoe (on the lower Don), it is surmised that their contents were transferred to skins or similar containers for onward dispatch into the interior [6; 7;]. Although TA represented only a small part of the volume of trade, they constitute one of the most important indicators for economic structures in Antiquity, in respect of agricultural production and consumption and the relationship between the imports and exports of settlements and regions.

Until the Archaic Period, TA continued to come from workshops producing the entire range of pottery, thus e.g. in [Tyrus](#) during the 2nd half of the 8th cent. BC [8] and in Phoenician Cerro del Villar ([Malaca/Málaga](#)) in the early 6th cent. BC [9]. The specialized production of TA in dedicated workshops is discernible in the Greek world from the 5th cent. BC onwards [10]. This pattern of production prevailed in the Roman period. According to Athenaeus (11,784c), at the foundation of Cassandrea (316 BC; [Potidaea](#)) the sculptor [Lysippus](#) [2] designed the model for *amphorae* destined for the export of (Mendeian) wine: an early form of industrial design.

An airtight seal was obtained by means of corks, ceramic discs, [pitch](#) or [gypsum](#). In addition, especially in the case of *amphorae* for wine, an internal coating was applied in order to prevent the seepage of liquid through the wall of the vessel [11; 12]. The contents of the *amphora* might be indicated according to product, origin, vintage, producer and/or merchant by a painted mark (*tituli picti*), a stamp ([Amphora stamps](#)) or an attached label. Some 40 different geographical types of vessel, some of them TA, are mentioned on papyri from the 3rd cent. BC onwards [13]. Apart from transport and storage, sometimes in second-hand use (Hdt. 3,6), TA were also employed for other purposes: as coffins for infants (*enchytrismos* burials), weight-saving elements in the construction of Roman arches ([Vaults and arches, construction of](#)), floats and pitfall traps (Hdt. 8,28).

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IV. Research history

Although methodological approaches to research into TA were developed in particular respect of Roman *amphorae* [14], they apply equally to Greek, Etruscan and Phoenician examples. Interest during the 19th cent. concentrated on epigraphic data: [amphora stamps](#), *tituli picti* and graffiti. Gradually, however, interest in the *amphorae* themselves, and especially in their various forms, gained the upper hand, and formed the basis for research into typology and archetypes. From the 1970s onwards, this involved the use of statistical, mathematical, technological [14; 15] and archaeometric methods of analysis, particularly in respect of the constituents of the clay with reference to origin and typology (petrography; analysis by x-ray diffraction, the Mössbauer process, neutron activation) [16], and its original content (gas chromatography). Attempts are currently being made to link these approaches to production in particular localities and regions, e.g. [Chersonesus](#) [3] and [Pompeii](#) [10. 13-19; 17]. Some

studies have also investigated the capacity of *amphorae*, as a basis for investigations of an economic nature [18; 19]. Although 'amphorology' has developed into a specific discipline with its own terminology, it largely continues to respect traditional, culturally based academic boundaries.

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V. Typology

Terracotta and painted forms first occur in Greek TA [10]. The type SOS Attic TA, painted in clay-slick and *à la brosse*, were widespread from the 8th to the 6th cents. BC, and were also manufactured on [Euboea \[1\]](#) [20]. Of the contemporary Corinthian TA, the older type A was usually handmade; it was also produced in the vicinity of [Corcyra \[1\]](#) and [Buthrotum](#). Most of the type B TA (from the late 6th cent. BC onwards) also came from this region, its early versions having predominantly been manufactured in [Magna Graecia](#) [21; 22]. A related form was developed in [Massalia](#) [22; 23]. Of the Eastern Greek TA, those from Samos, Chios, Lesbos and Miletus were the most widespread [24]. The most important during the Hellenistic Period were those from Rhodes, Cos, Cnidus, Thasos and Sinope [10; 25]. In the Greek West, the so-called Graeco-Italian *amphorae* constitute the most important group; they developed in the 4th cent., and were produced into the 2nd cent. BC in Magna Graecia and [Sicily](#) [26; 27].

The Phoenician settlements in the West developed two forms of TA in the 8th cent. BC; these followed Eastern models. TA with a sharply defined shoulder are found on the Iberian peninsula, egg-shaped forms in the Central Mediterranean settlements [28; 29]. Various Punic forms developed from these until some time in the 1st cent. AD [15]. The egg-shaped forms served as models for TA in the Etruscan and Nuraghic cultures as early as the 2nd half of the 8th cent. BC [30]. The Etruscan form followed its own process of development, and, especially from the 2nd half of the 7th into the 5th cents., constituted an important category in the West [31; 32].

The first typology of Roman TA relied on the table compiled in 1899 by Heinrich Dressel for CIL volume XV 1 [14; 16; 33]. This typology has been constantly extended and refined for particular forms and particular regions of production [33; 34; 35; 36; 37]. The resulting classifications include the products of the entire Mediterranean world from the Roman to the Byzantine Periods. Individual sites such as the Monte Testaccio ([Mons Testaceus](#)), an artificial hill on the bank of the Tiber in Rome, some 35m high and consisting of nothing but used TA [38], attest to the volume of production and consumption down to the 3rd cent. AD.

[Amphora \[1\]](#); [Amphora stamps](#); [Commerce](#); [Imports / Exports](#); [Measure of volume](#); [Navigation](#); [Pottery](#); [Pottery, production of](#); [Pottery, shapes and types of](#); [Pottery trade](#)

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