

# CORINTHIAN DEVELOPMENTS IN THE STUDY OF TRADE IN THE FIFTH CENTURY

(PLATES 98, 99)<sup>1</sup>

AS A RESULT of a major project carried out at Corinth during excavations of the American School in 1977, 1978, and 1979, considerable information about Corinthian imports and exports of wine and oil and other produce has come to light.<sup>2</sup> The

<sup>1</sup>All pieces not otherwise identified are from Corinth. I thank D. Adamesteanu for permission to illustrate the amphora from Schirone; P. Pelagatti, those from Camarina; E. DeMiro, that in Agrigento; and the owner of the early 5th-century Corinthian B jar, who kindly allowed me to study it and include it here.

## Plate 98

- a. C-72-162, p. H. 0.625 m.; see footnote 7 below.
- b. Museo Nazionale, Policoro 38467, H. 0.631 m.; Necropolis at Schirone. For another view of the same jar, cf. Adamesteanu, footnote 9 below, *loc. cit.* Jars of this period can reach a height of 0.74 m. or more; cf. D. Adamesteanu, "Predio La Paglia. Nuovi ritrovamenti nella necropoli arcaica," *NSc* 10, 1956, p. 285, fig. 6.
- c. C-62-644, H. 0.636 m.; see footnote 11 below. Larger size for this stage represented in P. Orlandini, "Villa Garibaldi, Nuovi ritrovamenti nella necropoli arcaica," *NSc* 10, 1956, p. 291, fig. 5:a (H. 0.782 m.).
- d. C-1977-120, H. 0.676 m.; see Williams, footnote 12 below, *loc. cit.*
- e. C-53-222, H. 0.662 m.; see E. Brann, footnote 12 below, *loc. cit.*
- f. Athenian Agora P 12795, H. 0.412 m.; see Grace, footnote 12 below, *loc. cit.* Small size rather similar to a jar of 0.66 m. in height: D. Adamesteanu, "Scoperta di tomba greche in Via Francesco Crispi," *NSc* 14, 1960, p. 141, fig. 6:b.
- g. C-37-2037, H. 0.626 m.; see footnote 23 below.
- h. C-34-933, H. 0.638 m.; see footnote 24 below.

## Plate 99

- a. C-37-2042, H. 0.495 m.; see footnote 13 below.
- b. Jar in a private collection in Sicily, shown to me in 1979, H. 0.472 m.
- c. C-75-69, H. 0.507 m.; see footnote 22 below.
- d. Camarina, Necropolis of Refriscolaro, Tomb 215, H. 0.536 m.
- e. Camarina, Necropolis of Refriscolaro, Tomb 1030, H. 0.595 m.
- f. Museo Nazionale, Agrigento 4926, H. 0.555 m.
- g. C-1978-192, p. H. 0.203 m.; see footnote 26 below.
- h. C-34-932, H. 0.681 m.; see footnote 29 below.
- i. C-70-56, fragmentary jar handle preserving approximate handle H. 0.14 m., stamped on outer face at base.

<sup>2</sup>Abbreviated references to works frequently cited:

- Williams, 1978 = C. K. Williams, II, "Corinth 1977, Forum Southwest," *Hesperia* 47, 1978, pp. 1-39  
Williams, 1979 = C. K. Williams, II, "Corinth, 1978: Forum Southwest," *Hesperia* 48, 1979, pp. 105-144  
Williams, 1980 = C. K. Williams, II, "Corinth Excavations, 1979," *Hesperia* 49, 1980, pp. 107-134  
Campbell, 1938 = M. T. Campbell, "A Well of the Black-Figure Period at Corinth," *Hesperia* 7, 1938, pp. 555-611  
Koehler, 1978 = C. G. Koehler, "Evidence around the Mediterranean for Corinthian Export of Wine and Oil," *Beneath the Waters of Time: The Proceedings of the Ninth Conference on Under-*

newly discovered Punic Amphora Building at Corinth offers evidence both for several types of foreign amphoras in which goods were imported to Corinth in the 5th century B.C. and for local amphoras generally used for export but here found at home.

This sizable establishment, constructed at an important road intersection in the 460's and expanded only a few years later, has already yielded several tons of fragments of transport amphoras, most of them deposited beneath successive floorings of crushed poros in the central courtyard and porch.<sup>3</sup> Chunks of salted pickled fish had been carried in some of these, perhaps in the numerous Punic jars from northwest Africa which give the structure its name.<sup>4</sup> Chian and Mendeian amphoras, normally used for the export of wine, were also imported over the course of the quarter century in which the building functioned. Fragments of Chian jars found in stratified layers in the courtyard in fact confirm the sequence of shapes during an important phase in the development of that class. It appears from these remains that the establishment was involved in the handling, and perhaps in the processing, of imported produce.<sup>5</sup> The Punic sherds are about two fifths by weight of the total, and the Chian another two fifths, indicating the priorities of the establishment.<sup>6</sup> The Corinthian jars, whose fragments constitute about five per cent of the total, had evidently been used in this context for transport and perhaps storage, but obviously not, as they usually were, for shipping produce abroad. Interestingly, they fall into three distinct categories, and throw useful light on the development of Corinthian amphora production from its beginning in the Archaic period through the 5th century.

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*water Archaeology*, J. Barto Arnold, III, ed., Texas Antiquities Committee Publications No. 6, Austin, Texas 1978, pp. 231-239. Cross-references for pieces illustrated here are: P 12795 = fig. 1:b; C-37-2037 = fig. 1:c; C-37-2042 = fig. 2:a; C-62-644 = fig. 1:a; C-75-69 = fig. 2:b.

This work is part of a project on Corinthian amphoras through which many at the American School have guided and helped me. Of these, I must first mention Virginia Grace, who has given me far more than just her time during the decade since I first posed to her an innocent question about the Corinthian B amphora which stands in front of the Director's house at the School. For help throughout my association with Corinth and particularly while I did research for the present paper, I warmly thank Charles K. Williams, II and Nancy Bookidis of the Corinth Excavations. Thanks go also to Malcolm Wallace for the keen ear and eye he applied to the oral and written versions of this paper. The photograph of P 12795 is by Eugene Vanderpool, Jr.; photographs of C-34-932, C-34-933, C-37-2037, C-37-2042, and C-53-222 are by Marcia Langer; drawings were inked by Diane Peck.

<sup>3</sup>Williams, 1978, p. 17; Williams, 1979, pp. 105, 111-112. For the most recent plan locating the Punic Amphora Building within the Classical city, see C. K. Williams, II and P. Russell, "Corinth: Excavations of 1980," *Hesperia* 50, 1981, p. 3, fig. 1. The current plan of the second phase of the building is found in Williams, 1980, fig. 1.

<sup>4</sup>Williams, 1978, pp. 18-20, fig. 6; Williams, 1979, no. 29, pp. 115, 117-118, 123, pl. 43.

Mary Lou Zimmerman Munn has identified sherds that were found in association with kilns at Kouass on the Atlantic coast of Morocco with those from the Punic Amphora Building. The attribution will be fully discussed in her forthcoming dissertation for Bryn Mawr College.

<sup>5</sup>Williams, 1978, pp. 17-19, fig. 5; Williams, 1979, p. 111.

<sup>6</sup>Williams, 1979, p. 118. These figures may change somewhat after the excavation of the remaining quarter of the building is completed. Study of the smaller groups of unidentified amphoras and of the other coarse wares is under way.

Corinthian amphora production begins at least by 700 B.C. with the series now referred to in Corinthian excavation reports as Type A. Corinthian A jars of the first half of the 7th century have wide, flat-bottomed toes, spherical bodies, heavy necks, and broad, overhanging rims (Pl. 98:b). Their body shape, unusual for transport amphoras, belongs to a local tradition traceable in large storage vessels made as far back as the Geometric period (Pl. 98:a).<sup>7</sup> As with many Corinthian coarse wares, their fabric ranges in color from beige to orange and is easily recognized because of the many large, sharp, red and gray inclusions.<sup>8</sup> Colonists at several sites in the Metapontine region, and at Gela, Megara Hyblaea, and Cavallino (in southeast Italy) were among those receiving 7th-century imports in such jars.<sup>9</sup> The necropolis of Refriscolaro at Camarina has offered up one hundred early Corinthian A jars which illustrate the sequence of exports from Corinth to Sicily and Magna Graecia throughout most of the 6th century.<sup>10</sup> The earliest, dated to the beginning of the 6th century, continues the shape of a Late Proto-corinthian example from a stratified well deposit at Anaploga near Corinth (Pl. 98:c).<sup>11</sup> The body of the jar is still fat, the toe large, and the top of the jar massive, but the precise turning of the rim and the offset edge around the sides of the capped toe give a clearer definition to the parts of the jar than previously.

The shape of Corinthian A amphoras changes gradually through the 6th century, as the top of the jar and the toe both contract in relation to the size of the body. The

<sup>7</sup>Corinth inv. C-72-162, found in Corinth well 1972-4, with Geometric and Late Geometric pottery (Corinth Deposit Index); cf. the fragmentary top C-75-204: C. K. Williams, II, and J. E. Fisher, "Corinth, 1975: Forum Southwest," *Hesperia* 45, 1976, no. 3, p. 101, pl. 17.

<sup>8</sup>These have been shown by I. Whitbread of the British School at Athens to be largely of volcanic tuff, available on Acrocorinth, and of mudstone. Analyses by optical emission spectroscopy performed by R. E. Jones of the Fitch Laboratory of the British School have matched the fabric of later Corinthian amphoras with Corinthian tiles and with red clay from Acrocorinth. These results form part of a laboratory monograph, *Scientific Examination of Ancient Aegean and Cypriot Pottery*, whose publication by the BSA is foreseen for 1982.

<sup>9</sup>When exported examples of Corinthian jars are discussed in this paper, only the more important sites, or those most recently excavated, are mentioned. For a fuller presentation of Corinthian exports in transport amphoras, see C. G. Koehler, *Corinthian A and B Transport Amphoras*, diss. Princeton University, 1978, especially pp. 9-49, *passim*, and 72-83; and C. G. Koehler, "Transport Amphoras as Evidence for Trade," *Archaeological News* 8, 1979, pp. 54-61. Much of the material I have seen from the sites mentioned above has been found too recently to have received full publication, but these references give representative examples: M. Gras, "Les amphores commerciales archaïques," *Leuca*, R. Bozza *et al.*, edd., Galatina 1978, no. D1, pp. 171-175, pl. 73; F. d'Andria, "Cavallino (Lecce). Ceramica ed elementi architettonici arcaici," *MélRome* 89, 1977, nos. 43-49, 51, 53, 55, 58, 58a, pp. 540-542, figs. 10, 11; D. Adamesteanu, *La Basilicata antica: Storia e monumenti*, [Cava di Terreni], Di Mauro 1974, p. 112 and photograph p. 113, left, of an amphora from the necropolis at Schirone (Policoro); D. Adamesteanu and H. Dilthey, "Siris. Nuovi contributi archeologici," *MélRome* 90, 1978, p. 522, fig. 20 (labeled a pithos). I should like to thank Professor Adamesteanu for access to and discussion of his material from these sites.

<sup>10</sup>Dott. P. Pelagatti generously made it possible for me to see and mention the finds from her excavations at Camarina.

<sup>11</sup>C-62-644, from the Well at Z-θ:27, Anaploga: D. A. Amyx and P. Lawrence, *Corinth*, VII, ii, *Archaic Corinthian Pottery from the Anaploga Well*, Princeton 1975, An 306, pp. 157-158, pls. 79, 110. The shape continues at Corinth at least to the Central Early Corinthian period: cf. C-62-643, *ibid.*, An 288, p. 154, pls. 81, 110. For illustration of the method used in finishing the bottom of the jar, *ibid.*, p. 94, pl. 81.

sequence is illustrated by two jars excavated at Corinth and one at the Athenian Agora: C-1977-120, dated late in the first quarter of the 6th century (Pl. 98:d), C-53-222, made about the middle of the century (Pl. 98:e), and P 12795, probably belonging to the end of the 6th century (Pl. 98:f).<sup>12</sup> Catalogued exports of the 6th century now total over two hundred. Among the sites with three or more examples are Athens, Olympia, and Corcyra, in Greece; Selinus, Gela, Syracuse, and Leontini, in Sicily; and Leuca, Metapontum, Graviscae, and Rome, in Italy.

At the beginning of the last quarter of the 6th century B.C., the history of the Corinthian manufacture of transport amphoras becomes more complicated. Alongside the series of Type A jars appears another, quite dissimilar in shape and in fabric, termed Corinthian Type B (Pl. 99:a).<sup>13</sup> Type B in the Archaic period has a squat body, a small cylindrical toe, arched handles, and a neck characterized by a thick, rounded rim and, usually, a groove or ridge around the top. The rather finer clay used for Corinthian B amphoras, which can be beige, pink, or greenish, in some cases matches that of other Corinthian coarse wares such as oinochoai, table amphoras, and basins. The fabric of other jars of the same class, however, has been shown to have the same composition as that of pottery made in Corcyra (Kerkyra).<sup>14</sup> Indeed, Type B jars have for some time been connected with the *kerkyraikous amphoreis* mentioned in Pseudo-Aristotle.<sup>15</sup> Thus it appears that Corinthians and Corcyreans chose to export goods in containers of the same style and that they continued to do so for over two centuries. Perhaps these were for shipment of a particular commodity which a different container would conveniently distinguish at Corinth from that carried in Type A jars. What these contents were is not yet determined, although chemical analyses may identify them. Perhaps wine was carried in Corinthian B, because several such jars from the Athenian Agora have traces of the sort of resinous substance generally used in ancient times to keep wine from soaking into the porous clay of the container.<sup>16</sup> Corinthian A amphoras may possibly have held oil, since in the 5th and 4th centuries they were usually made of the same hard, dense fabric also found in "blisterware" lekythoi, lamps, and other vessels used for oil.

The western distribution of Corinthian B, which is nearly the same as that of Type A, may have had something to do with its initial design. Early Type B jars resemble

<sup>12</sup>Williams, 1978, p. 5, pl. 1:1; E. Brann, "A Well of the 'Corinthian' Period Found in Corinth," *Hesperia* 25, 1956, no. 59, p. 365, pl. 58; V. Grace, *Amphoras and the Ancient Wine Trade*, Agora Picture Book No. 6, Princeton 1961, fig. 35, left.

<sup>13</sup>Corinth inv. C-37-2042: Campbell, 1938, no. 192, p. 604, fig. 27.

<sup>14</sup>Studies carried out 1975-1980 by R. E. Jones (see footnote 8 above), using optical emission spectroscopy, and by A. Simopoulos and A. Kostikas, Nuclear Research Center Democritos, Athens, using Mössbauer spectroscopy; a report is being prepared for submission to *Archaeometry*. See also M. Farnsworth, I. Perlman, and F. Asaro, "Corinth and Corfu: A Neutron Activation Study of their Pottery," *AJA* 81, 1977, pp. 455-468.

<sup>15</sup>*De mirabilibus auscultationibus*, 104, 839b.8 (cited in a discussion of the Corcyrean attribution, by V. Grace in C. Boulter, "Pottery of the Mid-Fifth Century from a Well in the Athenian Agora," *Hesperia* 22, 1953, pp. 108-109, under no. 166).

<sup>16</sup>Agora inv. P 21985, P 24879, P 24880, plus several uninventoried pieces.

several other types of transport amphoras found in Sicily, Italy, and France, which are often called by archaeologists there "Ionian" (Pl. 99:d, e).<sup>17</sup> Their coarse and micaceous fabrics, differing not only from the clay of Corinthian B, but also from one another, suggest several places of manufacture. They vary as well in their bodily proportions, their rim shapes, and their handle profiles. Features which they share, and which they have in common with Type B, are the broad-shouldered body, the shape of the rim, the short handles with vertical sides, and a line or band articulating the join of neck and rim. Some jars at Camarina of this general description appear to pre-date Corinthian B jars, and a few pulled from the sea off Corfu may well be earlier than the Type B jars on the island, but their exact chronological relationship to Corinthian B is still unclear. Although Olympia, Corfu, and Corinth are not known to have imported these vessels earlier than the beginning of the 5th century, previous trading contacts could have familiarized the Greeks with such containers. It is possible that the shape and some stylistic details of Corinthian B jars were modeled after these western amphoras.

Archaic Corinthian B amphoras also show a connection with the shape of an amphora type sometimes called "Graeco-Massiliote", which appears in different fabrics but with well-defined stylistic traits (Pl. 99:f).<sup>18</sup> Body, handles, and rim are very reminiscent of Type B, but one obvious distinction is the groove that occurs, not around the top of the neck but at the base of the rim itself. Also, the pointed body is smaller in proportion to the neck than with Corinthian amphoras, and the sides of the toe slant in slightly. These jars are prevalent in the 6th and 5th centuries at a number of European sites, especially along the Rhone and the Gulf of Lyons but also at a considerable distance to the north.<sup>19</sup> Individual ones have been excavated at sites in Sicily, Italy, and Greece,

<sup>17</sup>Among the examples known to me are published one from Siris, Adamesteanu and Dilthey, *op. cit.* (footnote 9 above), p. 522, fig. 21; several from Olympia, W. Gauer, *Olympische Forschungen*, VIII, *Die Tongefässe aus den Brunnen unterm Stadion-Nordwall und im Südost-Gebiet*, Berlin 1975, pp. 120–128, figs. 7:4, 8:1, and possibly 8:2; several from Leuca, Gras, *op. cit.* (footnote 9 above), p. 172, nos. D12, D13, D15–D17, pls. 73–75. Several such jars were found at Camarina, and another group were raised by G. Kapitän from the underwater site (No. 3) at Ognina near Syracuse in 1974.

<sup>18</sup>F. Benoit, *Recherches sur l'hellenisation du Midi de la Gaule*, Aix-en-Provence 1965, pp. 167, 179, note 2, 182.

<sup>19</sup>Fragments of such amphoras from the site of Heuneburg near Sigmaringen on the Donau are discussed by W. Kimmig and E. Gersbach, "Die Grabungen auf der Heuneburg 1966–1969," *Germania* 49, 1971, pp. 41–44, pl. 5; note the distribution map, fig. 8, of Graeco-Massiliote amphoras from various workshops. I am grateful to Professor Kimmig, who has helped enlighten me about these jars from a region removed from my usual sphere of activity (but who can not be held responsible for my interpretations). On dating amphoras from the Heuneburg, he has written me (July 17, 1981): "*Was ich 1971 in der Germania über 'Graeco-massaliotische Amphoren' geschrieben habe (S. 41 ff.) ist heute gewiss ergänzungsbedürftig. Vor allem über das Alter unserer Heuneburg-Amphoren gibt es heute Differenzen. Sicher ist, dass alle Amphorenreste zu 90% in der jüngsten Heuneburgschicht I gefunden wurden und etwa 10% in Heuneburg II. Die beiden obersten Heuneburgperioden datieren wir heute ins 5. Jahrhundert, doch sieht es so aus, also ob die Transporteure auch ältere Typen nach Norden geschickt hätten. Mann kann also für die Heuneburgamphoren nur sagen, dass ihr 'in den Boden kommen' nur einen terminus ante quem bedeuten kann.*" Another example of the Graeco-Massiliote series comes from Aude and is dated ca. 540: O. Taffand and J. Taffand, "Deux tombes de chefs à Mailhac," *Gallia* 18, 1960, pp. 1–13, figs. 2, 3. On display in Palermo (inv. no. 2877/1) is a jar from a grave with pottery of 540–530, which may also belong to the series.

often at places which also imported goods from Corinth.<sup>20</sup> The similarity between Corinthian B and this particular type from western Europe, and between Corinthian B and the so-called Ionian types, demands further investigation. It may suggest one way in which Corinthians reacted to contacts with the western Mediterranean and in turn influenced it, or it may suggest trends shared among pottery workshops producing for certain cities in the Archaic and early Classical periods. In either case, it further documents the awareness in one community of another and the sophistication of an economic milieu where even containers reflect international communication.

Early in the 5th century, Corinthian B amphoras evolved into an altered shape. The rim flares, the toe shrinks to a distinct knob (Pl. 99:b), and eventually the turnip shape is abandoned for an ovoid one. The ridges or grooves still encircling the top of the neck continue to characterize this series for more than a century and a half. Fragmentary jars from the Punic Amphora Building<sup>21</sup> and from a contemporary deposit which may be related to it (Pit 1975-1, Fig. 1:a, Pl. 99:c)<sup>22</sup> illustrate the form established by the middle of the 5th century.

As Corinthian B began to change by about 490 B.C., so also did Corinthian A, to a form with beveled toe and slanting handles which join the underside of a heavy rim (Pl. 98:g).<sup>23</sup> The second quarter of the century, however, is the critical point for both Type B and Type A. The Punic Amphora Building and Pit 1975-1 mark the moment when Corinthian B radically alters its shape, and when Type A begins to give way to a related class with an elongated body, which from now on will be termed Type A'. Bodies of Type A jars of about 450 are approximately spherical and have broad shoulders (Fig. 1:b, Pl. 98:h; Fig. 1:d).<sup>24</sup> The top of the wide, overhanging rim slopes slightly, and the upper half of each handle is pressed front to back to form a triangular section. Very few examples of this bulky Type A form appear abroad. Instead, in a dramatic departure from the round-bellied amphoras typical for Corinthian A over the previous two and a half centuries, Corinth begins to export the slimmer Type A' model.<sup>25</sup> Relatively few of these had been found at Corinth until excavations in the Punic Amphora Building,

<sup>20</sup>Only representative examples are mentioned here. Notably, one jar top has been found at Isthmia (IPG 68-252) which is close, at least in style, to the amphoras found in France. One such jar is on display in Lentini (LE 1190). Perhaps the rim fragment from Leuca belongs as well: Gras, *op. cit.* (footnote 9 above), D14, p. 172, pl. 73. Others come from shipwrecks: B. Liou, "Note provisoire sur deux gisements gréco-étrusques (Bon Porté A et Point du Dattier)," *Cahiers d'archéologie subaquatique* 3, 1974, pp. 7-19, pl. 5:1-3; cf. pl. 6, fig. 5, from Vulci.

<sup>21</sup>C-1978-184 (Corinthian B jar top with graffiti), Williams, 1979, no. 28, pp. 115, 123, pl. 44; C-1977-128 (jar top with graffiti); C-1978-338 (neck fragment).

<sup>22</sup>C-75-69: Williams and Fisher, *op. cit.* (footnote 7 above), no. 27, pp. 106-107, pl. 19. Other contemporary inventoried pieces from Pit 1975-1 are C-75-76 (jar top) and C-75-74 (toe).

<sup>23</sup>Corinth inv. C-37-2037: Campbell, 1938, no. 201, p. 605, fig. 27.

<sup>24</sup>C-34-933, M. Z. Pease, "A Well of the Late Fifth Century at Corinth," *Hesperia* 6, 1937, no. 201, p. 303, fig. 34.

<sup>25</sup>The largest number abroad found within a single region total about a dozen at Metaponto, most from recent excavations; see F. G. LoPorto, *NSc* 20, 1966, p. 210 and fig. 61:2 on p. 207. I owe this reference to K. S. Wright. I thank I. Edlund and J. Carter for allowing me to study the new finds at Metaponto.

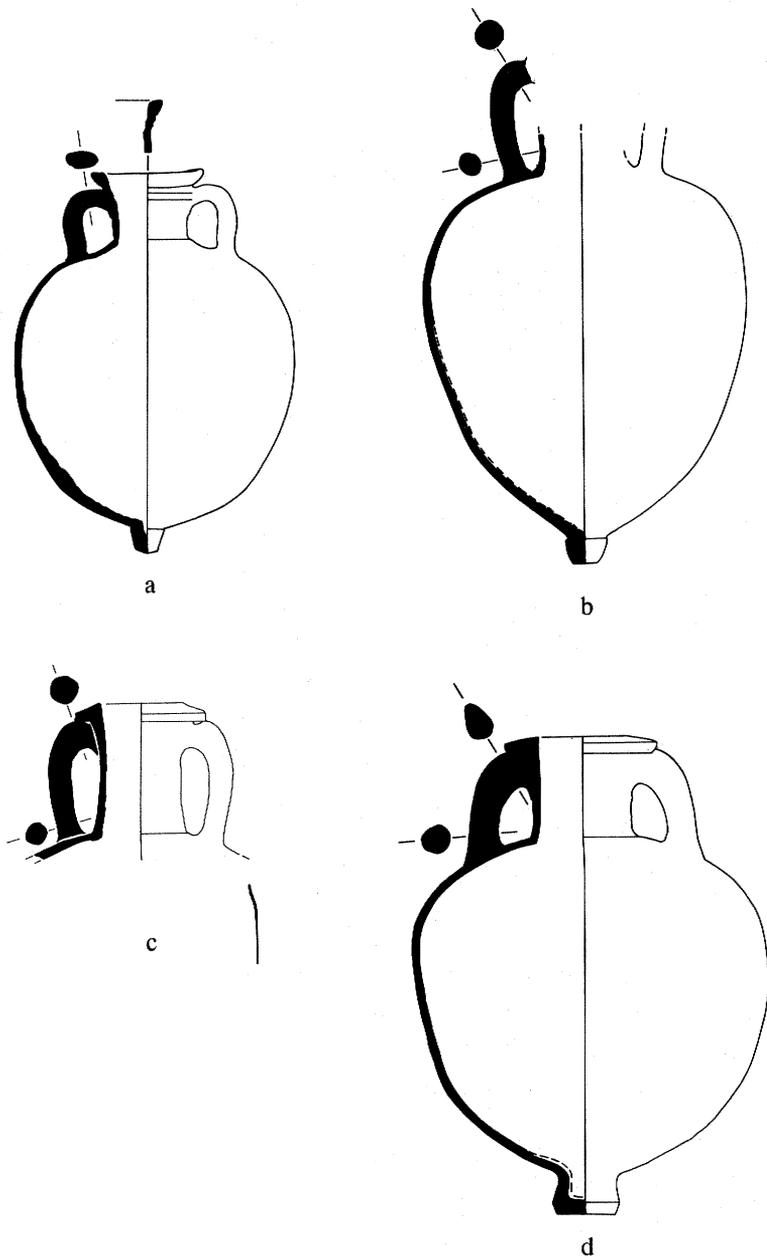


FIG. 1. a. C-75-69. Corinthian B, mid-5th century. b. C-34-932. Corinthian A', mid-5th century. c. C-1978-192. Corinthian A', mid-5th century. d. C-34-933. Corinthian A, mid-5th century. Scale 1:10 (For documentation, cf. footnote 1 above.)

which have shown that Type A' was used widely at home as well as for export. About one hundred Type A' jars are represented by fragments in the Punic Amphora Building (Fig. 1:c, Pl. 99:g; cf. Fig. 1:b).<sup>26</sup> There they constitute by far the greatest proportion of local amphoras, co-existing with Types A and B in a ratio of ten A' to one A and to five B amphoras.

The deposits in the first phase of the Punic Amphora Building are in fact the first in which Type A' can be identified and securely dated.<sup>27</sup> No complete vessel of the second quarter of the 5th century can yet be reconstructed at Corinth, but the main features of this stage are clear: short, cylindrical toe offset from the body; narrow lower body flaring to a wide shoulder; cylindrical neck topped by a thin overhanging rim quite broad in diameter; and handles round in section at the base and flattened lengthwise to form an oval section at the top.<sup>28</sup> Fragments from the second phase of the Punic Amphora Building include smaller peg toes (cf. Fig. 1:b, Pl. 99:h),<sup>29</sup> and the lower third of bodies which were handmade and often show trimming marks around the bottom. Jar tops, however, were made on the wheel and have crisply turned rims with a sloping upper face, a beveled lower edge, and a carefully contoured underneath face (Fig. 1:c, Pl. 99:g). Profiles of the rims exhibit a considerable range of minor stylistic variations which may be attributed to the hands of different potters. Handles are round in section, with the diameter of the upper, curved part markedly greater.

Corinthian A' jars are usually made of the fine, light-colored clay which is essentially like that used for Corinthian B.<sup>30</sup> To this were added the large, sharp inclusions characteristic of Corinthian A. In the Type A' jars of the mid-5th century, these inclusions are fewer, but smaller pieces of quartz and other minerals and rocks abound. When traced to their sources around Corinth, these may define compositional groups which correlate with the stylistic ones. The fabric of Type A' is thus related to those of both Corinthian A and B, although it has a wider range of composition than either.

All three Corinthian amphora types have been found together in at least two mid-5th-century contexts associated with commercial functions of the containers (shipping, handling, storing, and vending). Their use together is shown by the Punic Amphora Building, their joint export by a partially recovered underwater cargo from a boat which

<sup>26</sup>The inventoried examples are C-1978-192, from the Punic Amphora Building; also C-75-70, C-75-71, and C-75-75 from Pit 1975-1.

<sup>27</sup>Corinthian potters seem to have been experimenting with jars which tapered in the lower part, in a manner which seems to foreshadow A', since perhaps the middle of the 6th century, as shown by several jars abroad and one at Lipari: L. Bernabò-Brea and M. Cavalieri, *Meligunis-Lipari*, II, *La necropoli greca e romana nella contrada Diana*, Palermo 1965, p. 139, pl. 41:1. Another at Corinth may show experimental stages of the ovoid-bodied type: C-37-2043: Campbell, 1938, no. 203, p. 605, fig. 7.

<sup>28</sup>Complete shapes are published by G. V. Gentili, "Sicilia. Megara-Hyblaea," *NSc* 8, 1954, no. 10, p. 96, fig. 19 (I thank K. S. Wright for this reference); and Bernabò-Brea and Cavalieri, *op. cit.*, p. 128, pl. 41:2 (Tomb 353, Lipari). Cf. also Corinth inv. C-37-2040: Campbell, 1938, no. 190, p. 604.

<sup>29</sup>C-34-932; Pease, *op. cit.* (footnote 24 above), no. 199, p. 302, fig. 34.

<sup>30</sup>I. Whitbread of the British School at Athens has undertaken petrographic analysis of Corinthian A, A', and B fabrics. I am very grateful to him for this preliminary information.

sank at Porto Grande near Syracuse.<sup>31</sup> This provides some evidence that different contents were involved for each. When more is known about the relationship of Corinthian A' to A after the third quarter of the 5th century, it may be possible to draw a clearer distinction between their functions. Although few A' jars have been found in datable contexts after that point, finds abroad which seem to show a stylistic development suggest that they were produced well into the 4th century.<sup>32</sup> There seems to be a gradual change toward a taller, steeper rim and a more graceful curving of the profile of body and handle.

While A' (and B) amphoras continue to move around the Mediterranean in significant numbers in the late 5th and early 4th centuries,<sup>33</sup> Type A jars are scarce both at home and abroad until nearly 350, when they reappear in large numbers at Corinth.<sup>34</sup> Instead of serving as an alternate form of Corinthian A, perhaps A' actually replaced A for nearly a century, after a period of overlap in the middle of the 5th century. Two slight pieces of evidence might be taken to corroborate this. One is the fact that some of the fragments from the Punic Amphora Building that belong stylistically to A' are made of the "blisterware" fabric (but without many inclusions) of Type A. There exists also an enigmatic stamp on a handle from a Corinthian A jar of the middle of the 5th century that clearly depicts a contemporary A' jar (Pl. 99:i), for whatever reason.<sup>35</sup>

The finds from the Punic Amphora Building offer an unparalleled opportunity to examine the manufacture and use of Corinthian amphoras in Corinth. Although questions remain about the complicated association of Types A, A', and B, their existence reveals the Corinthians' adaptability to changing needs of both local and export markets. A better understanding of them may eventually explain more of the organization of potters and of the sale of agricultural goods in the Corinthia. Corinthian amphora production also gives tangible evidence of connections between Corinth and other cities

<sup>31</sup>G. Kapitän, "A Corinthian Shipwreck at Savelletri (Brindisi, Apulia, Italy)," *JNautArch* 2, 1973, p. 186; Koehler, 1978, p. 236, figs. 3:b, 3:c. Perhaps it is also significant that A, A' and B were found together in Well 1934-10 at Corinth.

<sup>32</sup>Later shapes are illustrated by M. P. Rossignani, "Ceramica e trovamenti vari," *Missione archeologica italiana a Malta, Campagna 1968*, Rome 1969, pp. 101-102, figs. 9:8, 9, pl. 31:3 and A. M. McCann, "A Fourth-Century B.C. Shipwreck near Taranto," *Archaeology* 25, 1972, pp. 184-185; note photograph of the A' jar top and toe termed "type B." I thank Dott. Rossignani and Dr. McCann for allowing me to study their material. Another indication besides the shipwreck of the later date for the more developed form are two fragments from Manhole 1976-1 at Corinth (C-1976-77, C-1976-78), dated between the late 5th century and ca. 350.

<sup>33</sup>For the 4th-century developments in shape for Type B, see C. K. Williams, II, and J. E. Fisher, "Corinth, 1972: The Forum Area," *Hesperia* 42, 1973, no. 27, p. 25, pl. 11; Grace, *op. cit.* (footnote 12 above), fig. 42, left; H. S. Robinson, "A Sanctuary and Cemetery in Western Corinth," *Hesperia* 38, 1969, no. 3, p. 10, pl. 2.

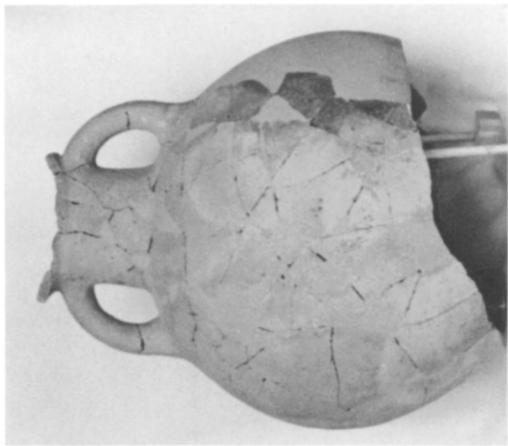
<sup>34</sup>These jars again are round-bodied; see S. S. Weinberg, "A Cross-section of Corinthian Antiquities (Excavations of 1940)," *Hesperia* 17, 1948, no. E13, p. 233, pl. 85; Robinson, *op. cit.*, no. 2, p. 9, pl. 2:2.

<sup>35</sup>Corinth inv. C-70-56. Corinthian A are only occasionally stamped and then nearly always with a palmette that becomes the characteristic impression on 4th-century Type A jars. Unlike the stamps of Hellenistic series such as Rhodian and Knidian, which have names and dates, these offer no obvious information. No Corinthian A' or B stamps of the middle of the 5th century are known.

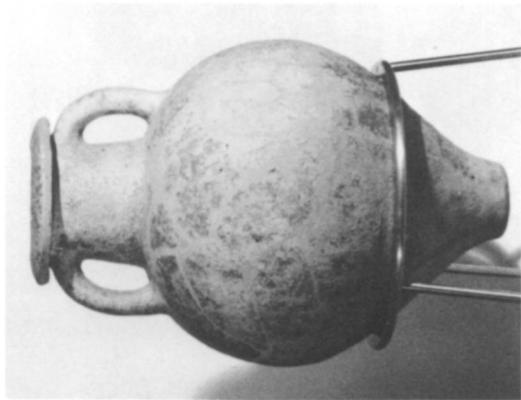
in the Late Archaic and Classical periods. In this way it complements the kind of evidence provided by the many imports of the Punic Amphora Building. Goods are seen to enter Corinth over a considerable period and from a number of places, and such trading contacts seem to have influenced craftsmen making transport amphoras at Corinth. From the history of these containers we can better appreciate the rather complex, multi-national nature of trade in produce of several sorts during the Late Archaic and Classical periods at Corinth.

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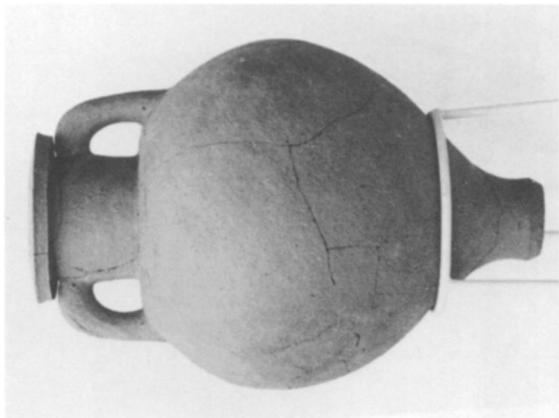
a. C-62-162. Middle Geometric large jar



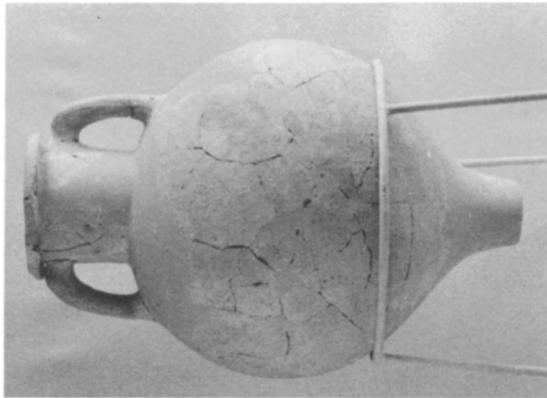
b. Metaponto? Corinthian A. First half of 7th century



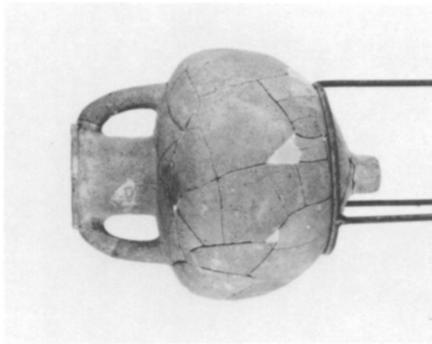
c. C-62-644. Corinthian A. Third quarter 7th century



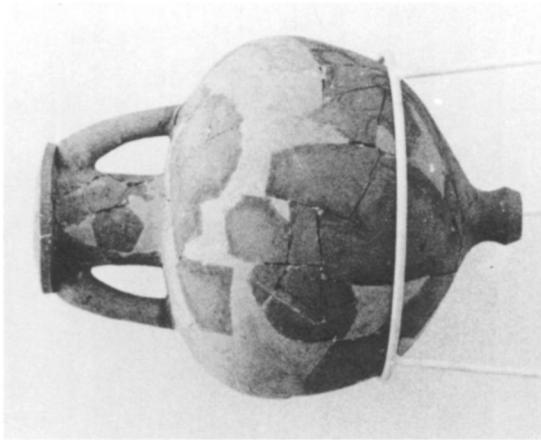
d. C-77-120. Corinthian A. Second quarter 6th century



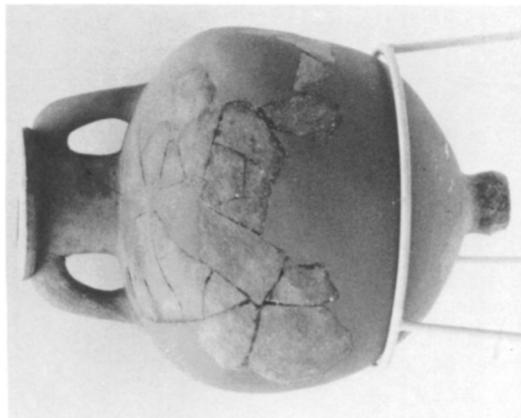
e. C-53-222. Corinthian A. Mid-6th century



f. P. 12795. Corinthian A. Late 6th century



g. C-37-2037. Corinthian A. Early 5th century



h. C-34-933. Corinthian A. Mid-5th century

Scale 1:10



a. C-37-2042. Corinthian B. Fourth quarter 6th century



b. Private collection of Sr. Bruggi (Syracuse). Corinthian B. Early 5th century



c. C-75-69. Corinthian B. Mid-5th century



d. Refriscolaro T. 215 (Camarina). "Ionian"



e. Refriscolaro T. 1030 (Camarina). "Ionian"



f. Archaic jar from Marseilles



g. C-1978-192. Corinthian A' jar top



h. Metaponto? Corinthian A' jar



i. C-70-56. Corinthian A handle stamp showing A' jar

Scale 1:10  
except i, 2:1