

## CHAPTER 2 DESCRIPTION AND ORDERING OF RELEVANT ARTIFACTS

**Sub problem 1:** To describe and chronologically and geographically order relevant artifacts of the Archaic Ionic Order, Ionic votive column and their pre-forms.

**Hypothesis 1:** Current data regarding a *corpus* of early Ionic capitals may be increased and augmented.

### 2.1 INTRODUCTION

During the compilation of the catalogue of Archaic Ionic and other relevant capitals, together with data related to their immediate built or sculpted context, the author came deeply under the impression of the commitment to methodic completeness and accuracy that standard works of the likes of Drerup (1969), Jacob-Felsch (1969) and Wesenberg (1971) reflect, and how they keep on being rallying points from which one may venture further into uncharted territory. The usefulness that such tomes have, beyond addressing their authors' immediate pressing academic questions, precipitated in this present catalogue being both preservatory in nature, as well as being directed toward the current question which, if answered adequately, may yet lead to fruitful further interpretation. The desire to offer the catalogue for future use has brought about a description more rich than possibly needed for immediate application.

The process of compiling the catalogue have likewise impressed on the author the toils of earlier minds which, through their unflagging dedication and singlemindedness, have managed to produce the amount of documentation and interpretation which they did, making possible a rich analysis. Like with many artifacts past and present, it was found that some of the capitals have since their initial discovery faded into academic obscurity, whilst others have been the subject of such radical re-interpretation that their initial interpretations, which in a sense become part of the artifacts, are in danger of being forgotten. For this reason attention is given to past interpretation in the description. The author had to overcome an initial action threshold in order to propose alterations to Theodorescu's (LCIG) and Kirchhoff's (EIV) works. Both are impressive and encompassing tomes, but the scope of their work resulted in deficiencies which, through rectification, will hopefully bring their respective good labours to greater fruition. The author had through harsh, but wise, comment to be brought to the realisation that the rigorous pursuit of procedural correctness in the documentation and subsequent typological analyses are not only indispensable for any later connection with interpretations of other cultural endeavours, but the only way to move beyond the high standard of what has already been achieved in the field. If there are to be deviations from this correctness, it is solely due to the existence of current restrictions on the author in visiting the artifacts for rectification. With this in mind the catalogue is completed and offered in humility, in the knowledge of its limitations.

## 2.2 COMPILATION OF A REPRESENTATIVE DATA BASE

### 2.2.1 Organisational comments, remarks and assumptions

#### 2.2.1.1 Organisational comments

In this Chapter the concern is the achievement of a model for successfully constructing a representative and ordered data base for analysis of the early Ionic capital, but one which in future work may also be suitable to mesh with and include any Ionic capital. In this process existing ordering models are critically viewed, integrated and augmented to achieve a single integrated model. Furthermore, there is the identification, description and ordering of those artifacts closely connected with the founding of the Ionic capital, which includes buildings, votive columns and capitals. Last entails the identification and description of hypothetically possible scenarios for the existence of a pre-form of the Ionic capital (In terms of the pioneering phase of Ionic architecture and/or the non-architectural form-references for either the whole of, or single elements of the Ionic capital), the few Ionic votive columns preceding those buildings where all the basic components of the Ionic votive column are used simultaneously, Ionic architecture of the so-called founding phase with the architectural Order present in that architecture, relevant contemporaneous Aeolic architecture, and lastly the Archaic Ionic capitals and the other relevant contemporaneous non-Ionic capitals.

The time frame of 625 - 489 BC, used for the detailed description of the Archaic Ionic capital, is based on the postulate that interim canonic form/s of the Ionic capital was/were reached in the the founding era of the Ionic capital between the datum point of a capital in which at least volute, canalis and echinus are combined, up to the achievement of the Classical canonic form thereof, but by the end of the Persian War (490 BC). Whilst the founding era includes the time span from the earliest hypothesised attempts at forming a voluted bracket capital in the early Seventh Century BC to the achievement of canonic form in the Classical period, the first extant stone Ionic non-standard and standard capitals appear in the last quarter of the Seventh century BC, and the capitals after 490 BC are well represented in Theodorescu (LCIG)] and need not be duplicated. For the detailed morphologic-typological study another time frame is used which allows only for the identification of interim canonic form reached in various regions after 75 years of monumental stone building (A so-called 'first generation' or founding phase of the Ionic Order), namely from the architectural datum of 600 BC up to 525 BC. Because it is accepted that various evolutionary types of Ionic buildings lead up to this phase, relevant Ionic pre-monumental buildings from 700 BC on precede this study. It is accepted that in the delineated time frame used in the description of Ionic monumental stone architecture and its capital, various interim canonic stages of the Ionic Order (In the Archaic era at least a column with base, fluted shaft and capital where canalis, volutes and echinus are combined, and various elements of an entablature) were achieved, but not necessarily the canonic form of the total Order.

The description of capitals is followed by a process of geographical and chronological ordering of capitals. Thereafter the immediate contexts of the capitals are introduced, followed by a description of non-Hellenic artefacts deemed to be relevant to the evolution of the early Ionic capital. This presents the body of artefacts from which all further interpretation will occur, and from which various interpretations may be brought in relation with one another. The interpretation of Geometric and Early Archaic architecture in which the evolution of the Ionic Style took place is limited to inquiry into those elements identified as being possible scenarios for the evolution to the Ionic non-standard capital and further to the standard capital.

#### 2.2.1.2 Remarks and assumptions

Any researcher of Classical architecture cannot be but overwhelmed by the sheer vastness of the field of study that has preceded him, the amount of artifacts now available and still becoming available for study, as well as the amount of description and subsequent interpretative debate forthcoming from the archaeological fraternity in this field of study, whilst at the same time being only too aware and dismayed at the continuing dearth of information regarding certain artifacts or key aspects, as well as at the amount of excavation and description and interpretation that still needs to be done. The compilation of a detailed data base of Archaic Hellenic artifacts relevant to this topic is a mammoth task in itself, one mainly fraught with the problem of incompleteness. Although no data base of artistic and architectural elements from an historical era as far back as the Archaic Hellenic can ever be said to be complete (due to ignorance towards, the impossibility or lack of identification of, damage or loss of, avarice and non-availability of elements, etc), the data base in this study purports to be representative at best, although it tries to be as complete as is presently possible in that existing data bases (more specifically re buildings and capitals) are augmented through inclusion of elements/aspects intentionally or unintentionally omitted in existing studies, as well as through inclusion of current archaeological results or arguments. Detailed scrutiny of a very wide sampling of elements is a necessary step towards obtaining a probable, synthesising view, being the objective of this study. However, due to the vastness of the artifactual material that has to be dealt with, the level of detail of the description necessarily varies from item to item. The most detailed description is obviously that included in the *corpus* of Archaic Ionic capitals. The other artifacts are described at a level deemed adequate for the purpose at hand.

The author would like to bring to attention that this data base is the first that provides photographs and/or drawings of all the Ionic capitals, and also the first that provides the quantitative and qualitative description together with the quantitative and qualitative interpretation. The data are provided in full so that those researchers wanting to use it for detailed, geographically bound style recognition or for discerning fine typological trends may easily do so. Furthermore, the data are purposefully provided in a manipulable and open-ended format. The easily re-arrangeable computer spreadsheet format allows all feedback from future research to be introduced by means of re-arranging the chronology or by the re-assignment of capitals in

terms of geographical provenance. Importantly, the chosen format and nomenclature was expressly chosen to allow for the easy addition of Theodorescu's (EIV) data of Classical and Hellenistic capitals (and others') at a later stage, in order that a very wide picture may emerge (Because Theodorescu's abbreviations for capital elements are slightly abstract and not as descriptive as those used by Kirchhoff, his abbreviations are included in brackets [x]). Whilst the author uses many discrete aspects of this data base for interpretations deemed necessary in this study, many others are potentially present within the given format. Because of the author's intention that this work be used as a tool for many purposes, and that this document could be taken beyond its present format by scholars intimately involved with individual artifacts, the tabulated information included in the achieved data base is included in computer-disk format in Excel® 5.0a for MS Windows® 3.11/95 (and also for Apple Macintosh) at the front of the library copy of this study, so that the data can augmented or be reorganised in different sequences at a future date (The prevalently available spreadsheet programme used for the chronological, geographical and stylistic ordering, whilst presenting the author with its own idiosyncratic demands, was chosen in that it may readily be used in the research fraternity rather than those studies which are inaccessible due to cost, complexity of design and duplication (eg that of Theodorescu (LCIG)).

## 2.3 THE EARLY NON-STANDARD AND STANDARD IONIC CAPITALS

### 2.3.1 Achieving a representative and ordered data base of capitals

#### 2.3.1.1 Towards achieving a representative and ordered data base of Ionic capitals

The description and geographical, chronological and typological ordering of artefacts are necessary prerequisites for any place- and time-framed inquiry into a specific artistic or architectural enclave, as well as for any related inquiry which involves artifacts from other artistic or architectural enclaves.

The typological ordering of Ionic capitals requires typological interpretation of the artefacts and, amongst others, acknowledgement of their respective form-space contexts - this includes their relationship with their stand [ie the column] and sculptural companion [ie the statue], or in the case of the architectural capitals, with the elements and organisation of their building of origin and, where required, with relevant aspects in their wider built environment [ie the *temenos*]. Because the two most comprehensive studies on the origins of the Ionic capital to date, namely that of Theodorescu (LCIG) and Kirchhoff (EIV), in themselves do not contain a suitably integrated ordering model, Bakker (1992, p.40-59) showed that such an integrated ordering model may be construed from critical evaluation of the validity and relevance of, a reaction to the advantages and disadvantages of, as well as through the addressing of the known *lacunae* in their work, and in addition also taking into account similar work surrounding the Doric Order by Howe (1985). Also, that Betancourt's (1977; hereafter: TES) chronologically and geographically ordered inventory of Aeolic capitals should be

augmented from current research. Assumptions for, and the evaluation, augmentation and integration of those models are here synoptically described.

### 2.3.1.2 Assumptions regarding datums and dates

It is assumed that there once were buildings in which elements, later deemed to be 'Ionic', were employed, until there was a building in which a group of elements were construed in a specific relationship, which relationship was later called the 'Ionic Style', and of which style the Ionic capital is seen as the 'index marker' of the style (In Modernity this observation was first made by Dinsmoor (1973, p.58)), and of which style the first standard format capital used in an architectural context is called the 'architectural datum'. It is accepted that Ionic buildings evolved through various phases, and that not only buildings with a fully fledged Ionic Order may be called Ionic. It is accepted that the capital of the 'Ionic Style' also appears in other artistic endeavours like votive columns and furniture, likewise having 'artistic datums' for any first appearance in a specific form. Many factors deem it necessary that 'interim datum' points occur in the evolution of the Ionic capital towards a point in which is achieved what is, by mutual definition and subsequent consensus, known as 'canonic form'. Due to the incompleteness of archeological remains claims to exclusive truth re an identified datum, interim datum and canonic form, in the areas of both architectural and artistic endeavour, must be relinquished and the probability of correctness of identified datums seen as relative to the available knowledge at any given point. There are however certain moments in any style development where there is no doubt regarding the factual status of a date of manufacture of an artefact (Due to correlation with factually unassailable or fairly certain extrinsic data), whereafter such a date is identified as an 'established date'. Identification of related precursors and followers of the architectural and/or artistic index marker datums, together with the identification of geographically and chronologically bound style relationships, remain relative to the datums and any established dates. Knowledge of such related precursors and followers is required for typological interpretation of the initiating or formative period of, and of subsequent phases in the style.

In order to increase the dependability and probability of any such interpretation, the chronological ordering of capitals must rely on the most dependable dating available. However, it is accepted that the state of knowledge regarding the subject (together with those with which it is brought into relation) makes the application of factually incorrect dates, with resultant inaccuracy in interpretation, unavoidable. Nevertheless, description in the study of all the motivated, interdependent dates (which dates may in future be improved upon), together with known differing opinions together with references to their sources, as well as clear indication of the few established dates amongst them, is deemed to be an essential part of bringing artefacts in a relation with one another in order that the process of interpretation may be repeatable and made subject to criticism in the continuing recursive process of research on this topic.

From a review of archaeological literature (Of which only some are cited as illustration), the main methods used for dating Ionic capitals up to present are:

- i Analogue comparison between capitals where only intrinsic quantitative criteria (eg Boardman, 1959, p.184; Bammer, 1972a, p.450; Puchstein, 1887, p.18) or qualitative criteria (Alzinger, 1972-3, p.196-211; Möbius, 1927, p.169; Mikocki, 1986, p.139-43; Wrede, 1930, p.197-200) are compared with those of others. Quantitative criteria only rely on 2-dimensional description (Boardman, 1959, p.184; Rodeck, 1896-7, p.93-7) and the qualitative criteria on the existence and form of only singular capital components (White, 1971, p.52).
- ii Contextual comparison between Ionic capitals and related artefacts other than capitals (Alzinger, 1972-3, p.181), inclusion of facts relating to the place of manufacture and/or site or building in which it was used (Wiegand, 1904b, p.257), together with inclusion of paleographic, epigraphic and/or prosopographic data in the correlations (Gruben, 1982b; Ohnesorg, 1982, p.272; Raubitschek, 1940, p.56).

The chance of incorrect dating through the use of method (i) is high (LCIG, p.87). Without external established points, dates drift in a time continuum without anchorage even though they are stylistically related and in chronological order (eg Durm, 1910, p.302; Lethaby, 1917, p.41; Rodeck, 1896-7, p.97). Many of the established points that have been used during the past, in terms of Ionic capitals, have never been re-evaluated in the light of new evidence and have often been used without consideration of extrinsic factors from contextual evidence, leading to unsatisfactory results (EIV, p.10). Because Kirchhoff (EIV, p.7) deems them unsuited to the quest for the origins of the Ionic capital he tries to improve their reliability through more comprehensive analysis. In the evaluation of the ordering models specific comment will be given regarding dating methodology and accuracy, after which further comment and a proposal will be put forward in the integration strategy.

### 2.3.2 Integration of relevant ordering models

Both Theodorescu's (LCIG) and Kirchhoff's (EIV) ordering models are evaluated in terms of their relevance to the study, representativeness of data, validity of and scientific standard of the framework, completeness, suitability and the extent of context relatedness of descriptive and interpretative criteria, type of and usefulness of interpretation method as well as any *lacunae*.

#### 2.3.2.1 Evaluation of Theodorescu's ordering model

The emphasis in Theodorescu's model is on the geographical, chronological, morphological and eventually the typological ordering of Ionic capitals. His morphological inquiry rests on valid analytical methodology (LCIG, p.11, 165-175). The identification of morphological criteria and the implementation rests on objective standards of research (LCIG, p.5). The validity of the framework and ordering method may be

accepted. The data base is statistically representative of geographical and chronological demography of Classical and Hellenistic capitals (LCIG, p.7) but is lacking in terms of examples of the Archaic era. The quantitative and qualitative criteria try to bring all possible permutations of criteria relating to the capital elements into 3-dimensional relation, as such acknowledging the nature of the artefact (Aptly described in LCIG, p.3, 5; EIV, p.10). These criteria however do not include the relationship between decorative detail and form type, which Theodorescu (LCIG, p.77) indicates as diminishing the worth of his research. (Correlation between the abovementioned aspects may bring insight during identification of experimental and interim canonic types). Further criticism against his model is that the chosen criteria do not reflect the context of architectural capitals.

The most coherent correlations and trends are read from the relationship between intrinsic and typological criteria within a geographical and chronological framework (LCIG, Matrix 5, 7; Fig.4, 5), and also from the identification of trends in morphological development (LCIG, Plate 1, 2). Here one should note that extrinsic criteria may be useful to highlight fundamental differences between groupings. The large geographical zones used in his study (LCIG, Matrix 0, 7, 8) lead to contradictory results (LCIG, p.24). In order to indicate more accurate trends, Theodorescu (LCIG, p.93) indicates that ideally these zones will have to be subdivided into smaller entities, if possible, taking into account known contact between regional design 'schools' (LCIG, p.79, 93). Ordering according to intrinsic criteria within a geographic framework only (See LCIG, Matrix 0) is not suitable for an analysis of the whole, rather for bringing capitals from identified geographical zones into comparison (eg in terms of style identification). Chronological ordering clearly indicates the dominant founding centra connected to the developmental stadia of the capital.

Due to the immense variations between individual capitals the grouping of capitals, in terms of morphological-typological variations, cannot be applied in a rigid fashion. Patterns and results gained from individual groupings must be seen in the light of results gained from other groupings, rather than getting bogged down in the isolated analysis of sets of criteria. Theodorescu's results show a lack of linear typological development in capitals through time, similar to the findings by Howe (1985) for Hellenic architecture as a whole. The ordering of capitals rests solely on the manipulation and statistical compartmentalisation of the chosen criteria. Theodorescu (LCIG, p.79-80) himself acknowledges that there is need for a more complex model which acknowledges the reality [founding context] of the capitals.

In terms of dating of capitals, Theodorescu's (LCIG, p.161-4; Table 1) work shows that he accepted the originating dates of capitals as they were given by their respective modern archeological documentors at the time of their first publication, that he did not look at current re-datings and that he did not take any external factors or other evidence into account. Even though the dates used for many of the capitals may have remained intact over time, by not keeping track with evolving research dates employed by Theodorescu are disputable and demand re-evaluation of his findings. However, in fairness to Theodorescu, many of the capitals have only been dated once, at the time of discovery, and will have to be used similarly by the author.

### 2.3.2.2 Evaluation of Kirchhoff's ordering model

The emphasis in Kirchhoff's model is on the re-evaluation of existing dates of the capitals, followed by chronological ordering and a restricted morphological ordering. Like Theodorescu, Kirchhoff (EIV, p.10) also acknowledges the 3-dimensional character of the capitals in the analysis of the intrinsic criteria inherent in groupings of capitals from which an evolutionary strand may be shown (EIV, p.1; LCIG, p.vii). Kirchhoff's (EIV, p.236, Tabel 1-2) analysis of the quantitative aspects of intrinsic morphological criteria is less complete than that of Theodorescu (LCIG, Matrix 0), but he adds to the broth, in the sense of acknowledging the architectural context. Kirchhoff's deductions (EIV, p.206) from the analysis of east-Ionian capitals in architectural context (EIV, Table 5) shows the applicational worth in a study of the technical aspects present during the early phase of Ionic architecture.

The lack of comprehensive typological ordering of capitals detracts from the study. Kirchhoff only uses a few of the given dimension sets in the proportional analyses (EIV, Tables 1-5). He motivates this omission by the fact that the analysis was employed for the use of dating capitals, and that any chronological trends are adequately illustrated through the examples used. Kirchhoff's geographical grouping of capitals is very coarse grained. The inclusion of the west Ionic capitals with the Island/Cycladic Ionic group may hamper fruitful investigation of trends. His analysis of quantitative morphological criteria shows strong evolutionary trends in both the Island Ionian (EIV, p.65-72, Table 1) and east Ionian (EIV, p.128-133, Table 3) capitals. These results cannot be accepted due to the known inaccuracies in terms of dating.

His inventory purports to be the most encompassing yet (See EIV, p.1), but there are many omissions. The omitted Attic capitals may be included from Theodorescu's (LCIG, p.163-4) work, as well as from any additional research on the topic. An additional 22 capitals will be included from the work of Theodorescu (LCIG, p.161-4) together with those gathered by the author. (Capitals from Theodorescu deemed to be excluded due to re-dating are discussed under 2.3.3.7). However, Kirchhoff's inclusion of the early, non-monumental capitals (EIV, p.137-9), which were up to then mostly unpublished, is a major contribution to any research on the relationship between the early capital typology and search for possible prototypes (Mistakes in the dating of some of these are dealt with in the author's catalogue). Aeolic capitals are understandably not included in the morphological quantitative analysis, but it may be useful to chronologically and geographically compare the Aeolic and Ionic capitals in qualitative terms, in order to provide a check for the accuracy of the input of typological criteria into the dating procedure. The necessity of inclusion of both torus- and cyma capitals (EIV, p.193-202), as well as the Aeolicising capital types (EIV, p.213-9) in the chronologically ordered inventory is clear from Kirchhoff (EIV, p.202-7, 219-21), as well as from the author's (1992, Chapter 3.1, 3.4.3) earlier work.

In terms of dating Kirchhoff (EIV, p.1, 8), rather than summarily accepting the founding dates from the



archaeological literature like Theodorescu did, additionally tries to date and chronologically order every capital from the same overarching theoretical framework, after which he attempts to correlate the results with external criteria [if available, which is not often!]. Whilst his dating methodology shows up the importance of a broad data base, acknowledgement of context and the use circular feedback in the analytical process through re-interpretation of statistical results, he nevertheless does not follow this method when external criteria are not at hand at the time of ordering. Although one can surmise where he only relies on intrinsic qualitative or quantitative [eg Ion-38, -48, -56, -57, Iver -4] criteria for dating the capitals, he does not expressly indicate exactly what method he uses for which capital and what each capital's dating reliability status is. Also, in later deductions he should have been more aware of the non-factual quality of dates arrived at from such analysis. To show how the dating capitals exclusively from intrinsic criteria may fail, one only has to look at his (EIV, No.3, p.15, Note 58; No.16, p.30, Note 103) dating of the capital of the Naxian *Oikos* interior capital [Ion-24], the Sphinx column from Aphaia, Aegina [Ion-22] and the Naxian *Oikos's* *prostoôn* capital [Ion-5], which Kirchhoff identified as votive, and of which the inaccuracy of date and in function was indicated by Gruben (1989, p.168, Note 15) together with a reprimand around mathematical inaccuracies and the over-reliance on statistical results.

As was to be expected, a comparison of the dates of similar artifacts from both Theodorescu's and Kirchhoff's studies shows marked differences. However, the fact that many of the Early Archaic capitals had to be dated by Kirchhoff from qualitative and quantitative intrinsic criteria only (As stated in many cases the only recourse available), should be seen as at least furthering the debate, and does not diminish the overall worth of his work: he had to deal with the first examples of a style or type, and every researcher who faces this problem with other artifacts will know the difficulties involved - We must note that Kirchhoff's (EIV, p.137, Nr. A) dating of the oldest known stone Ionic capital [Ion-1] has since been vindicated by Gruben's (1989, p.164-9) dating from contextual and epigraphic evidence. The stated nature of Kirchhoff's dating method and its supporting criteria makes it a useable model, but because he could not always apply it fully many of the dates based on quantitative typological data only are not necessarily convincing (In the study dates thus conceived by him are so indicated). Kirchhoff's ascertaining of the datums of the pre-monumental and monumental votive column capitals, the architectural capital, as well as the ascertaining of developmental trends after the initial founding process, should nevertheless still be subjected to future correction from current, relevant research, including this study.

### 2.3.2.3 Integration of the ordering models

Kirchhoff's model leads to a chronological ordering based on intrinsic and extrinsic criteria of the capitals, but the useful results are not utilised in a system within which trends in the morphological evolutionary stages may be ascertained. Theodorescu's model starts off from a very restricted data base in terms of Archaic Hellenic capitals, together with a chronology gained from unquestioned datings. He does however construe

a very useful system to ascertain those trends. It is put that these two models show mutual 'fit', and may be unified to rectify the deficiencies in both.

Theodorescu's groupings may be used to analyse capitals that are of good standing in terms of their dating, and all undated capitals may be analysed from the results achieved. The two data bases may be joined and the known *lacunae* rectified. This unified, chronologically ordered data base will constitute an encompassing grouping method within which any newly described capital may be brought into relation with others in an objective, systemised and standardised way (Following the lines of Matrix 0 (LCIG)), from which base the morphological datum and evolutionary trends (Following the lines of Matrix 5 (LCIG)) and the typological datum and evolutionary trends (Following the lines of Matrix 7 (LCIG)) may be ascertained, all within the same chronological and geographical framework (Namely Fig.4-5 (LCIG)). Due to their relationship with the founding and evolution of the Ionic Order the known torus-, cyma- and Aeolicising capitals may be included in the chronologically ordered data base.

#### 2.3.2.4 Rectification of *lacunae* in the ordering models

##### i Theodorescu's model

\* *Lacunae* in terms of the small data base as well as the exclusion of extrinsic criteria may be dealt with through inclusion of Kirchhoff's inventory as well as further augmenting by the author, and by inclusion of Kirchhoff's and other's description of extrinsic criteria. Further elaboration in terms of the founding context is included in the body of the dissertation by the author.

\* Description of intrinsic qualitative criteria (LCIG, Table 2) must be augmented from those of Kirchhoff (EIV, p.236), as well as from Gruben (1963, p.127, 148) and Koenigs (1979, p.198; 1980, p.66). Furthermore, the criteria must be augmented in terms of the detail description of decorative elements, and inclusion of any known form variants of the Ionic capital. For future integration of Archaic, Classical and Hellenistic capitals into one system it is decided to use Theodorescu's symbols even though they seem abstract.

\* Description of intrinsic quantitative criteria (LCIG, Table 1) must be augmented from those of Kirchhoff, namely items 1, 3, 5 and 6 of Table 1 and 3 (EIV, p.237-8, 241-2). It is clear that only the most important dimensions in the capital lay-out need be investigated now. In this study the criteria identified for close scrutiny are: **B:A** [T {*Tiefe Polster insg.*}: L {*Gesamt Länge Kapitell*}], **L:B** [H {*Gesamt Höhe Kapitell - von oberes Kanalis zu unterem Auflager*}: T {*Tiefe Polster insg.*}], **D:E** [V {*Gesamt Länge Volute*}: Va {*Volutenabstand*}], **G:A** [H {*Gesamt Höhe Volute*}: L {*Gesamt Länge Kapitell*}], **H:C** [ød. *unteren Auflagers*: L {*Gesamt Länge oberes Auflagers*}], and **H:A** [ød. *unteren Auflagers*: L {*Gesamt Länge Kapitell*}]. Further criteria regarding the minor divisions of the capital and the volute element are included from relevant research in order to provide data for later research on the evolution of base dimensions in the totality of the capital design and volute construction.

\* Geographic groupings (LCIG, Matrix 0, 8) may be divided into smaller zones which acknowledge cultural and political groupings. Capitals may be placed in the matrix according to place of origin rather than place of use.

ii Kirchhoff's model

Apart from those stipulated above, the following rectifications are necessary:

\* The data base may be enlarged by identification, description and inclusion of all those capitals not included in abovementioned inventories. Where only certain quantitative data are at hand, hypothetical reconstructions may be attempted within the boundaries of known knowledge of the artefacts. Some hitherto unpublished capitals were photographed by the author with a scaled staff (the manner of their use is described later). Capitals of which no published dimensions or scaled photographs exist, cannot be included in the quantitative analysis. Capitals of which large portions are missing, will nevertheless be included into those parts of the qualitative analysis as is possible.

\* The artistic (re votive columns) and architectural data base needs to be increased for contextual analysis of capitals.

\* The qualitative criteria need to be enlarged to include aspects relating to the integrated functional or aesthetic nature of artistic or architectural capitals within their setting. (For this study this will be limited to intrinsic criteria).

Note: The above will provide the most comprehensive data base of Archaic Ionic capitals yet. In the spirit of a conservation ethic, in this study the data base will be documented comprehensively in this manner, especially to make it a working reference document for use by others. In the argumentation in the study however, all data will not necessarily be employed, as there will be an endeavour to work with the minimum data required to illustrate the hypotheses. Comment will also be passed re the usefulness or redundancy of certain criteria included in the description.

iii Augmentation of Betancourt's (1977) model for Aeolic capitals

Due to controversial conclusions regarding the relationship between the Aeolic and Ionic capital types as resulting from Betancourt's (1977) study, the author proposes that the Aeolic capitals are added to the chronological and geographical ordering of capitals. Another reason for their inclusion is to exclude the type of confusion surrounding the dating of Aeolic capitals prevalent in many existing founding theories for the Ionic capital, for the express benefit of further research regarding the Ionic capital which includes those same theories in their argumentation. Another reason is to provide the necessary information for any inquiry into the possible reasons for the gradual shortening of the Ionic capital length, as well into the evolution of the design typology construed for the capital-column shaft connection. His work on the typological development and the dates of capitals has to be augmented with that of Martin (1958), and his conclusions re-evaluated in terms of important work done by Kuhn (1986), Radt (1991) and Wiegartz (1994).

### 2.3.2.5 Approach regarding dating of capitals

As stated in Chapter 1, for the construction of the relative chronology, the author (Like in the work by Howe (IDO)) has to rely on the fruits of specialist evaluation from the archaeological profession as far as the accuracy of the dating of artefacts is concerned. However, like Howe (IDO, p.269), the author also believes that all dates should not be accepted without reserve, and that existing dating methodology should be refined through the use of feedback from typological analyses as well as from current dating from extrinsic contexts of the artefacts. This type of feedback from the archaeological fraternity has already impacted on a few of the incorrect dates that Kirchhoff reached without the benefit of his stated, more comprehensive method. The fact remains that there are very few established dates in terms of Archaic Ionic capitals (They are indicated in this study), and that in many cases the artefacts are completely isolated from a context which could provide dependable clues as to the date of manufacture. An aspect addressed in this study is that there is an attempt to see in which manner these artifacts may be approached and used so that they may be activated to still be useful in gaining further insight, rather than to discard them. In terms of the study at hand though, the author will sometimes have to rely on these type of dates from Kirchhoff's analyses, and also those provided by Theodorescu, where none other are available, but with caution and by trying to link the capitals with extrinsic data. The author will furthermore enter the dating arena (so to speak) by, throughout the ordering process, endeavouring to follow the historical and continuous debate regarding each capital's date of manufacture, and through evaluation (See the capital descriptions following below) search out the most reliable - where possible, in terms of the discussion above - dates for any given artefact, which will hopefully heighten the overall accuracy of the work. In the final discussion of the capitals in Chapter 4, the dating will be critically reviewed. Also, there will be discussion of a few currently undated artifacts, after the ordering process and typological analyses of the main body of capitals are complete. In the typological analyses to follow there will also be an evaluation of all measurable capitals, with a statistical evaluation of the nature and effect of contamination of the results emanating from inclusion of capitals with dimensions resulting from scholarly reconstruction, and those that are very approximate in nature. Where capital dates are contested by multiple researchers, the reader also has the benefit to enter the debate armed with the benefit of the results of the typological interpretation of a series of well dated, well measurable capitals.

### 2.3.3 Sources, description and dates of Ionic and relevant non-Ionic capitals to 490 BC

The catalogue that follows describes Archaic Ionic capitals up the 490 BC, together with relevant non-Ionic capitals in that time span, in terms of their description sources, accepted dates - accompanied with other dates previously accepted for the capitals concerned - and related debate and inquiry, material, place of provenience, place of current whereabouts, explanatory notes and accuracy status of dimensions. Whilst photographs and/or drawings of all capitals are provided in Appendix 2, the detailed qualitative and

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quantitative description of every Archaic Ionic standard capital is put in Table 2.1 and 2.2 in this chapter. (Exclusions of capitals due to damage, are clearly marked at top left in every Table). In order to provide understanding of the level of exactness of capital dimensions where we are dealing with damaged and reconstructed capitals, the author evaluates the physical state of each capital together with the methodology followed in the reconstruction process (where available), identifies the non-measurable, reconstructed dimensions and the reliability of the information, and proceeds to code the capitals in Chapter 2, Table 2.2 and Appendix 1, Table 1.1, as Green (Dimensions accurate and measurable from the artefact), Blue (Some dimensions not measurable but a responsible and accountable reconstruction), and Red (Too fragmentary or impossible to reconstruct to any degree of probable accuracy, or reconstructed dimensions approximate). Dimensions of capitals which were found to be incompletely documented (in terms of dimensions) are completed by the author where possible, again indicating the accuracy level. Where portions of capitals are missing, reconstruction of those that allow reconstructive work is attempted and included in the illustrations in Appendix 2 (This aspect is dealt with more fully under Chapter 2.3.4). In the case of the non-standard and non-Ionic capitals, limited relevant qualitative and quantitative description is provided in the catalogue text below. All references to sources obtained from the studies of Kirchoff (EIV) and Theodorescu (LCIG) have been checked for accuracy, and where necessary *errata* and possible misunderstandings in their references have been corrected here. Where comments by others pertain to the discussion, they are added. Where sources were unobtainable for use they are indicated with [~] and included in the catalogue, in order to enable further research. Capital types are abbreviated according to types, and are so used in the main body of text. An index for the catalogue of capitals is provided here to facilitate its use.

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### 2.3.3.1 Stone canalis-type Ionic precursors to the standard Ionic capital

**Preion-1** Early Archaic trimmed and rough-hewn unfinished marble, canalis-type, non-standard Ionic capital, from a building [Possibly the Archaic Artemision 'E'; (Bld-14) ], Delos. Presently at Delos. Site found: In the the base of the colossal Apollo *kouros* statue next to the Naxian *oikos*.

Origin: -

Date: Before 600 BC (Gruben, 1996, p.64).

Previously the date remained speculative due to the lack of detailed description (See Kirchoff, 1988,

p.176, Note 630), Courby (1921, p.237, Fig.5), Picard *et al* (1924, p.234)).

Description references: Merrit, 1982, p.82-92, Fig.1-2, Plate 12.a-f; Courby, 1921, p.237, Fig.5 [Dimensioned drawing]; Picard *et al*, 1924, p.234; Gruben, 1996, p.64, Fig.4 [3-dimensional scaled sketch].

Notes: According to Courbin (1980, p.29; 1987, p.67, Note 15) the base of the Apollo statue, in which the capital was used as building block, is from 590-80 BC and, to him, was in place by the time the Naxian *Oikos* was built. Courbin does not indicate whether the capital was built into this original statue base [the capital would then be older than 590 BC], or whether it was re-used to fix up the base in later years, but there

is no current research that can prove that the capital was inserted later. Gruben (1996, p.64) is of the opinion that it was in the original base, which helps him (1996, p.64) to date the capital as of before 600 BC.

- According to Courby it was part of the interior of the *Oikos*, but as was shown by Kaster (in Gruben, 1963, p.178), the bearing diameter does not tally with the column top diameter, nor does it tally with the dimensions of the capitals of the *prostoon* (Ion-5), nor with any other known Archaic Ionic architectural capital on the island. The width of the capital is 450, against the 260 of that of the interior of the *Oikos*. It clearly sat on a rectangular column. Wesenberg (1970, p.301) is also sure it did not belong to the *Oikos*.

- Kirchhoff (1988, p.176, Notes: 262) argues in favour of a very early architectural use, namely for an anta/pilaster capital.

- Gruben (1996, p.64) now cautiously apportions it to the supposed prostyle of the Early Archaic Artemision [E] on Delos. However, according to Kalpaxis (1976, p.76) this addition harks from just after 600 BC (Also see Vallois, 1966b, p.48-9); Gallet de Santerre (1958, p.253, 278)), which means possibly in the time between 600-590 BC, which makes for a short lifespan for the Artemision [E], that this was a discarded capital, or that the piece was deemed as important enough to build into the base. In any event the capital indicates that rectangular timber columns were used even at this late time, and that timber and stone were used together quite comfortably.

- The non-standard capital has no echinus, but the intention of painting the echinus on may have existed, but would have no logical reason.

- The capital's narrow bearing plane and its transverse direction precludes it from having carried a sphinx statue.

- The state of completion of the capital and the lack of detailed dimensions precludes the use in any detailed quantified comparative analysis in this study.

**Preion-2** Poros non-standard Ionic capital with volutes, positioned on a rectangular timber column of an unknown building, Didyma (Bld-13). Present location unknown. Original Description Register No PM5360.

Site found: Didyma

Origin: Didyma

Date: Ca 600 BC. Gruben (1996, p.63, Note 13) sees the volute angle palmette as very similar to the votive column capital from Sangri (See Ion-1). This he dated to the end of the Seventh Cent BC (Kirchhoff (1988, p.137) also places Ion-1 in the Seventh Cent BC).

Description references: Wiegand, 1941a, Plate 213, F662.A; Wiegand, 1941b, p.149 No.h, piece A; Gruben, 1963, Fig.31, p.138-9, Frgmt.29; Gruben, 1996, p.63, Fig.3 [Scaled drawing *cum* photo - reconstruction]. Also see section 1.2.1 below.

Notes: This fragment of a voluted poros capital was first assigned as Ionic capital from Didyma by Wiegand (1941a, No. A, Fig.F662A; 1941b, p.149). Wiegand saw this capital as being the oldest, known Ionic capital, and previously Gruben (1963, p.139-40)

mentioned that this idea could still be possible. Wiegand believed that the capital had a separate echinus. Even though Gruben (1963, p.140) initially thought that it could have been used on a column, he nevertheless put forward, as more probable, the idea of it being the roof *acroterion* of the *Naiskos I*, or part of a console or stair wall edge. Gruben then dated the capital around or before 550 BC, much later than Wiegand's description as "...höchst altertümlicher.." (1941a, p.149).

- The surface of the volute is flat with a inscribed volute line terminating in a round, sunken but convex eye. From the photograph it is already clear that a cutting compass was used in the execution of the volute line, and that the volute was constructed with 90° arcs. - Gruben's (1996, p.63) latest assignation of the capital, ie as voluted canalis member on a rectangular timber column, is very important and this capital should therefore be seen as a pre-form of the Ionic standard capital.

### 2.3.3.2 Archaic Ionic standard capitals

Photographs and drawings are provided in Appendix 2.

Full quantitative and qualitative description is found in Appendix 1.

**Important note:** There are no capitals Ion-2, -3, -8, -33, -47, -49, -70, -71, -79.

**Ion-1** Local Naxian marble Ionic capital of a votive column (Col-1) dedicated to Apollo, from the Demeter and Apollo sanctuary, [at Marmaria (now Gyroula), close to] Sangri, Naxos. Naxos Museum, item No.8. Site found: Prothesis of Ag Georgios Lathrinos, Garoula [Sangri], Naxos.

Origin: Naxos

Date: At the end of the Seventh Cent BC (Gruben (1989, p.164) states that he accepts the statements on the epigraphical evidence by Kontoleon [apparently as confirmed by Wörrle]). This is therefore an established date. Other dates: Still in the 7th Cent BC (Orlandos in Kirchhoff, 1988, p.137).

Description references: Picard (*École Française d'Athènes*), 1955, p.293, Fig 18; Gruben, 1989, Column No.A, p.161-5, Fig. 1, 2, Plate 19; Kirchhoff, 1988, p.137, No.A, Fig.3.1; Kontoleon, 1954, p.337, Fig. 11.

Dimensions: Gruben, 1989, Fig.1-2 (Due to the irregular form of the capital the dimensions on the left and right sides, as well as in the plan dimension, differ: An average between the two is used for comparative purposes. The right hand volute D=157, G=193, 1<sup>1</sup>=113, 1<sup>2</sup>=90, 1<sup>3</sup>=80, 1<sup>4</sup>=67, and the length is taken in the middle of the capital. [In the design there is a search for a design module, seen as an intended, rather than an executed module]).

Notes: Proportion of width:length of capital is *ca* 1:2:3 according to Gruben (1989, p.161). However, a length dimension taken on the capital midline on Gruben's (1989) drawing results in a relationship of 1:2:6, letting us assume that 1:2:5 was possibly the general aim in terms of visual proportion, but that the

metrication was loosely applied.

- The inscription, the date of the end of the Seventh Cent BC (as confirmed by the inscription dating), together with the discovery of the column nearby the Demeter and Apollo sanctuary, the method of erection of the column and the identification of the erection spot, fixes the place of erection as the Demeter and Apollo sanctuary, [Marmaria, close to] Sangri (Gruben, 1989, p.170), and Apollo as the recipient of the dedication (Walter-Karydi, 1994, p.128, Note 9). Column: See Col-1 in 2.4.1.2.

**Ion-4** Fragment of a Naxian marble Ionic capital of a votive column (Col-4). Delos Museum.

Site found: [Delos]

Origin: Naxos

Date: Early Sixth Cent BC (On the basis of the echinus detail and proportional analysis (Kirchhoff, 1988, p.13)).

Description references: Ducat, 1971, Plate 131; Kirchhoff, 1988, p.13, No.1, Fig.1,1; Martin, 1973, p.385, No.6, Fig.12, 13; Vallois, 1966b, p.170, No.7. Dimensions: From Martin's (1973, Fig.13) reconstruction. The total length [A], echinus [Q] and bottom bearing [H] diameter and top bearing length [C] are reconstructed and not reliable, whereas the other dimensions are measurable.

Notes: Ducat (1971, p.387) sees this capital as having had a 10,4 high abacus. However, because the capital façade is flat, the angular enlargements of the volute must be seen as just that. It remains possible, however, that an abacus was painted on, but seen in the light of other examples of this era, that seems improbable. Kirchhoff (1988, p.13) identifies the smooth torus type echinus.

- The column of this capital was grooved (Ducat, 1971, p.387). Martin's (1973, Fig.13) reconstruction shows an angular volute spandrel with no leaves.

Column: See Col-4 in 2.4.1.2.

**Ion-5** Naxian marble Ionic capital of a column from the *prostōn* (east portico) of the Naxian *oikos* (Bld-12c).

Origin: Naxos

Date: Just before 550 BC (Courbin, 1987, p.74). Other dates: 560-550 BC (Gruben, 1989, p.168, Note 15). Gruben (1989, p.168, Note 15) uses this example to show the flaws of Kirchhoff's proportional dating system, but Kirchhoff relied more on qualitative detail here. Other dates: Wesenberg (1970, p.300) argues for a date near the end of the Sixth Cent BC on the basis of capital and column proportions. Martin's (1973) earlier date is 575-60 BC, Kirchhoff's (1988, p.15; Based on detail) is the beginning Sixth Cent BC. Apart from Vallois, this capital was assigned to the east portico of the Naxian *Oikos* by Courbin (1980, p.300) and dated as such (530-500 BC)

The function is confirmed by Gruben (1989, p.168, Note 15), who rejects Kirchhoff's (1988, p.15, p.260, Note 103) assignment of this capital to a Delian votive column from the early Sixth Cent BC. Description references: Courbin, 1980, p.103 flw., Plate 24-5, 73.4-6 (*prostōn* capital); Kirchhoff, 1988, p.15, No.3; Martin, 1973, p.389, No.9; Vallois, 1966a,

p.101, No.3 [*prostōn* column base]; 1966b, p.176, No.11 [*prostōn* capital]; Wesenberg, 1970, p.300 [dating, proportions]; 1971, Fig.250 [column base]. Dimensions: Courbin, 1980, Plate 25. Fragment allows for measuring bottom bearing, top bearing to midline, side to midline and bearing-to-bearing heights, as well as accurate dimensioning of echinus diameter. Volute and length dimensions are hypothetical. Courbin's (1980) dimensions are different from Vallois's (Also cited by Kirchhoff).

Notes: The reference in Martin (1973, p.389) is wrong in that it mistakenly allots Fig.18 to this capital [his No.9], whilst it is in fact the drawing of No.10 and 11 (1973, p.390), ie the internal *Oikos* capitals [Ion-24], which correlates with Kirchhoff (1988, No.16) and Vallois (1966b, No.10 [not 11]).

**Ion-6** Naxian marble Ionic capital of the Naxian sphinx column (Col-7), Apollo sanctuary, Delphi.

Site found: Between the Athenian stoa, -treasury and Asclepion. Delphi Museum.

Origin: Naxos

Date: 575-60 BC ["570-60 BC, plutôt que de 575" BC] (Amandry, 1953, p.26, 31), but with the acceptance of Gruben's (1993, p.104) assertion that it follows the Iria capital [Capital Ion-7 dated to 570 BC {Building start 580/70 BC}], therefore in the 570-60 BC range [A date also stated by Jacquemin (1993, p.224); Amandry's date is reported by Ohnesorg (1996, Note 28) as 570 BC]. Other dates: 570-60 BC (Courbin, 1980, p.55 Note 4); Courbin (1987, p.68, Note 20, p.69, p.71) later dates the Naxian *Oikos* [*His "Ila"*] to 575 BC, with the Naxian sphinx column 'dix ans plus tard', ie in 565 BC. Gallet de Santere's (1958, p.291) date is 575 BC; Gruben (1965, p.190, Note 32) uses Amandry's date of [575] 570-60 BC, whilst (1989, p.172) remaining sure that it follows the temple at Iria, Naxos (with similar column, capitals and bases) which temple he (1993, p.104) gives a starting date of 580 BC and (1966, Fig.55) a dedication date of 550 BC. Kirchhoff (1988, p.16) dates the capital at 580-70 BC, which corresponds to that of Jacob-Felsch (1969, p.15, 109), namely 580 BC [She gives no explanation for her date].

Description references: Alzinger, 1972-3, p.186, Fig.16; Amandry, 1953, p.1 flw., Plate XI, XII.1-3 [capital and column]; Boardman, 1959, p.199; Jacob-Felsch, 1969, p.109, No.5.2.d [only measurements]; Kirchhoff, 1988, p.16-7, No.4, Fig.1.2; Theodorescu, 1980, p.162, No.23.

Dimensions: From Amandry (1953, p.1 flw., Plate XI). Even though damaged, all dimensions are measurable from capital.

Notes: For the restored middle section of the canal, Gruben (1989) postulates that the canal's bottom bead disappears into the echinus (As Ion-7 of the Dionysos Temple IV, Iria, Naxos), rather than a separated canal (Also see Betancourt, 1977, p.108 [Also the straight canal shown in the drawing by Perrot and Chipiez in Betancourt (1977, Fig.51)]). The volutes and canal have round edges that read as beading. Detailing on the spandrel palmette and volute moulding grooves are sharper than that of Ion-7. Ohnesorg (1996, p.43) argues that the details are a mixture of the Iria [Ion-7]

inner and outer capitals, and therefore later. The cyma is carved out deeper and overhangs the torus moulding of the column top (See Amandry, 1959, p.26), and the 17 cyma leaves are randomly placed.  
Column: See detail at Col-7 in 2.4.1.2.

**Ion-7a-c** Fragment of an indigenous marble Ionic capitals of the Dionysos Temple IV (Bld-3d), Iria, Naxos. Naxos Museum.

Site found: Ag Georgios Gyris.

Origin: Naxos

Date: A date of 570 BC is taken from the following arguments: Ohnesorg (1996, p.41) describes the temple construction start date as ca 575 BC, whilst Gruben (1993, p.104; 1997, p.315) describes its start as ca 580 BC, with its first capitals as from 570 BC (1989, p.172), but before the Naxian Sphinx column (Accepted above as from 570-60 BC). Other dates: 580-70 BC (Kirchhoff, 1988, p.18).

Description references: Amandry, 1953, p.21 Footnote 2, Table 7, No.5-7.[need p.21]; Boardman, 1959, p.199 Footnote 4; Drerup, 1952, p.8 Footnote 9; Jacob-Felsch, 1969, p.188, No.177; Gruben, 1972, p.359 flw. Fig.20a-c; Gruben *et al.*, 1987, p.597-600, Fig.3a-b, Fig.39, item 11, Fig.41; Gruben, 1989, p.161-72, Fig.4, 5; Gruben, 1991, Fig.4, p.71; Kirchhoff, 1988, p.17-8, No.5; Ohnesorg, 1996, Fig.3 [3-dim scaled sketch].

Inner capital 7b: Gruben, 1991, p.66, Fig.4 [perspective].

Outer capital 7c: The fragment of the outer capital is also described by Gruben (1993, p.104, Plate XVIII.1). Dimensions: From Gruben's (1989, Fig.4) dimensioned reconstruction. The fragment is more than half the capital and permitted measurable retrieval of most dimensions, and accurate reconstruction of echinus diameter and volute size.

Notes: Gruben (1993, p.104) shows that the stone Ionic Order finds its form in an architectural context [Ie Delos and then Iria], followed by the artistic [Ie Delphi], whilst the Iria and Delphi works come from the same studio. The capital is predated by the column fragment from Kolonna [Aegina] and the Ionic sphinx column from Aphaia [Aegina], as well as the Naxian *Oikos*.

- According to Kirchhoff (1988, p.18) the capital is not architectural, but Gruben's (1989) architectural allocation and Gruben and Lambrinouidakis's (1987) allocation of item 11 [another capital fragment] is accepted.

- The volute and canalis edges read as beading.

- The disappearing bead at the middle bottom of the canalis, the middle section to Gruben (1993, p.104) appearing as a rectangular block [bracket capital] with two volutes added on [Also Ohnesorg, 1996, p.104, Note 20]. Gruben (1989; 1993) postulates a similar detail for the Naxian Sphinx column capital, whose middle part is a restoration.

- Gruben *et al's* (1987, Fig.41) front elevation has leaf spandrel palmettes; Gruben's (1989, Fig.4) back elevation has drop palmettes, indicating to him progression during the construction process. The author sees this as parsimony and emphasis of frontality. However in Gruben (1993, p.104, Plate

XVIII.1, Note 13) it is stated that the outer capital palmette copies that of Sangri [Ion-1], whilst the inner capital has a 5-leafed spandrel (Ohnesorg, 1996, p.43), definitely then a progression.

- Gruben (1996, p.65; 1997, p.300) provides the motivation for the cult depiction of the temple.

**Ion-9** Fragment of a marble Ionic capital of a votive column, Demeter and Apollo sanctuary at Sangri. Naxos Museum, item 27.

Site found: Unpublished

Origin: Naxos

Date: 580-70 BC (Kirchhoff, 1988, p.19). The author indicates similarities with capitals Ion-1, and Kirchhoff (1988, p.19) with Ion-6 and -7a, b.

Description references: Kirchhoff, 1988, p.19, No.7; Kontoleon, 1954, p.337, Fig.10.

Dimensions: None published. Due to this, as well as its damaged state, the capital cannot be used in quantitative comparisons.

Notes: The capital does not have the resolution of detail shown by that of the Naxian Sphinx column and the Iria temple, Naxos, and might thus be earlier. This capital shows concave volute channels and a bearing offset angle spandrel palmette detail which is a refinement of that of Ion-1 (the first example of an Ionic capital with an extension of the bearing surface, roughly in the shape of an angle extension, or maybe an angle palmette), which might indicate an experimental phase between that and Ion-6 and Ion-7a-b.

Column: No detail available.

**Ion-10** Parian marble Ionic capital of a votive column (with separated *canalis*) from the Katapoliani church, Paros. Paros Museum, item 775 (München TU No. M70).

Site found: Katapoliani church, Paros.

Origin: Paros

Date: 570-50 BC (Ohnesorg, 1993b, p.113). Other dates: Second quarter of the Sixth Cent BC (Kirchhoff, 1988, p.23), in terms of proportions.

Description references: *Archaiologika Chronika*, 1960, *AEphem*, Chron.1, No.3, Plate B.α-γ; Daux, 1963, p.824, Fig.18-9; Gruben, 1972, p.377 flw., Fig.36a, b; Kirchhoff, 1988, p.22-3, No.9, Fig.1.3; [-] *Prakt*, 1962, p.183, Plate 185; Ohnesorg, 1993b, p.113, Plate XXI.1-2.

Dimensions: Although some dimensions are measured accurately, some are approximate and used for comparative purposes. The dimensions for the length, width and height of the capital, the volute centre to volute centre, the volute top to volute centre, the capital bottom bearing surface diameter, the horizontal overhang of the echinus cyma from the bottom bearing edge, and the top bearing surface length are from measurements taken by the author from the artefact in the Museum, but a tape was used in stead of calipers. The capital top bearing length was taken on the capital centreline. The capital total length was measured on the side where the volute extremity is undamaged, and the measurement was taken from the volute edge to an existing midline pencil mark, and a total dimension constructed by multiplying it by two. The bottom



bearing surface diameter was calculated from the modern stand's circumference [995], and the echinus diameter by adding the echinus overhang to that. The author's dimensions are not similar to that of Ohnesorg (1993b, Note 16 [ie A=920, B=330, L= 211]). The dimensions in *AEphem* (1960 [ie A=910, B=327, G=295]) also do not reflect the author's measurements. The author has also photographed the capital at an horizontal angle with a telephoto lens, with measuring staff present. The acting Ephor for the Cycladic Region, Mr Kouράρης, has provided permission to publish the photographs and dimensions. He is thanked herewith, and the assistance by the BSA is acknowledged. Only a few smaller dimensions not measured on the artefact were scaled from the photographs, with the measured main dimensions as regulating norm. The author has attempted a reconstruction of the capital front from these photographs. Due to the use of photostatic reproduction slight distortions are inevitable.

Notes: The canalis bottom beading abutting into the echinus top (although the beading adjoining continues here) shows similarity with the Iria capital (Ion-7), detail also postulated by Gruben (1989) for the Naxian sphinx column capital at Delphi (Ion-6). Ohnesorg (1993b, p.113) sees this capital as the oldest Parian standard capital, similar to the Iria capital which is slightly more developed and older.

- From the dimensions the east Ionian foot standard of 346 (This foot standard type ascertained by Gruben (1972a, p.324)) there is reason to think that 1/4 ft could have been used as design module, but Ohnesorg (1993b, p.114) proposes a dactyl grid ordering (of ca 18,35) for the capital, and states that the volute has no precise geometrical construction. The author agrees, and shows the use of the random arc system for volute construction [See Chapter 3.3.4.3.2].

Column: There is no detail re the column.

**Ion-11** Naxian marble *ersatz* Ionic capital found in the Competaliast agora, Delos.

Site found: The Competaliast agora, Delos. Delos Museum.

Origin: Naxos

Date: Second quarter of the Sixth Cent BC (Kirchhoff (1988, p.24) based the date on his proportional and qualitative evaluation). Other dates: After 540 BC (From Martin (1973, p.314 and 396\*))

Description references: Kirchhoff, 1988, p.23-4, No.10; Hellmann *et al*, 1979, p.103 flw, No.F, Plate XV.79 and XVI.85; Martin, 1973, p.396, No.17; Vallois, 1966b, p.180, No.16.

Dimensions: Martin (1973) gives only few dimensions retrievable from the artefact, and no further reconstruction.

Notes: \* Martin (1973) disputes Vallois's designation of this capital to the Naxian Stoa, which is accepted. However, he also believes it to be somewhat younger than those of the stoa (Martin's (1973, p.314) date for the Naxian Stoa is 550-40 BC), which places this capital after 540 BC, and which places Kirchhoff's date a bit too early. Kirchhoff's date is used in this study due to the positioning in a wider range of capital proportions.

Column: No column detail has been published.

**Ion-12** Fragment of an Ionic capital of an unknown votive column, Halkipinar-Izmir (Smyrna). Izmir Museum, Basmahane. Item No.712.

Site found: Baths of Diana, Halkipinar-Izmir (Smyrna)  
Date: Before or around 520 BC: The statement of '...not older than 520 BC' due to detail [co-existence of eye and concave *canalis*] (Gruben, 1963, p.174 Note 168) may now be slightly altered due to the dating of Ion-74, where these details co-exist. Its date is 550-25 BC. The possible large size of the Smyrna capital's echinus relative to the polster width may also indicate an older age than 520 BC, but because the drawings are not reliable, Gruben's date will be kept for now.

Other dates: Hahland's (1964, p.197) detail related date is 530 BC; Alzinger's (1972-3) date is 530-20 BC (See his Footnote 29 for various other datings, for instance Boehlau and Schefold's (1940-2) date is '560/50 BC, before the Artemision ['D']'. This has now been discounted. Gruben's date is also mentioned). Kirchhoff (1988, p.73) also indicates a date in the second quarter of the Sixth Cent BC, likewise 'determined by dateable detail'. If this date [as Schefold's] of before 550 were to be accepted, this capital would be the first Ionian standard example on the eastern Ionian mainland, which is unrealistic.

Description references: Alzinger, 1972-3, p.183, Fig.13 [Footnote 29]; Hahland, 1964, p.197 Footnote 116, Fig.57; Kirchhoff, 1988, p.73, No.45; Martin, 1944-5, p.361 Footnote 7.

Dimensions: The dimensions are very approximate, only to be used for comparative purposes. The scaled drawing in Alzinger (1972-3, Fig.13) was used by the author for a reasonable reconstruction for purposes of comparison [Alzinger indicates that the bottom elevation is not to scale, but interestingly it shows that the echinus bearing co-incides with the volute inner edge, which makes it possible to articulate this dimension on the scaled elevation, and reconstruct the echinus dimension on the bottom elevation]. If those more reliable dimensions are used, a standard measure of 1ft=291,4 (72,85 qt ft) could have been a module. Notable is that the drawing indicates a big diameter for the echinus, like the Naxian sphinx capital at Delos and the Iria temple, Naxos, which would not be likely at 520 BC. The dimension of the echinus is given, but not used in further calculations.

Note: It is suggested that the piece be measured precisely to ascertain whether the same module as the Aeginetan Sphinx capital, the Naxian Sphinx capital at Delphi, and the Dionysos temple at Iria, Naxos was used.

**Ion-13** Two similar large-grained marble Ionic capitals of the Apollonion, Nasos, Aeolis (According to Wiegand (1904b)). Found in the Apollo temple, Maskonisi, island Nasos, Aeolis. Present capital location unknown.

Origin: -

Date: Speculated after 520 BC: Wiegand's (1904b) date is 'nicht jünger als das 5. Jahrhundert v. Chr.', as is Weikert's (1929, p.130). Alzinger is correct in rejecting the link between the capital and the Attic base

in Wiegand's drawing, in terms of the first occurrences of the Attic base in the east Ionian mainland. He justly points out the correspondence of the capital form to the Sixth Cent BC examples from Athens [eg Ion-30 of 530 BC and Ion-35 of 520 BC], which, according to him, must predate this capital; It is here then that we must look for a date, as well as the stylistic link. Kirchhoff's (1988, p.74) date of the second quarter of the Sixth Cent BC is surely optimistic. Because of the enigmatic nature of this artefact, the capital is not included in the chronologically put tables.

Description references: Alzinger, 1972-3, p.201, Fig.36; Kirchhoff, 1988, p.74, No.46; Wiegand, 1904b, p.256, Fig 1.

Dimensions: Kirchhoff provides some dimensions he scaled from Wiegand's drawing: A-645, B-250 C-505, D-188, E-270, G-225, L-175 and Q-350. By overlaying these on Wiegand's drawing the author augmented these, always cross-referencing to the given dimensions. These new dimensions are F-385, H-350, J-80, K-95, alpha-30°. Because the drawing is poor dimensions are very approximate. Due to this (Over and above the enigmatic nature) the capital will not be used in quantitative comparisons. The capital should be redocumented in the future.

Note: According to Wiegand the island is across from present day Ayvalik. This is in historic Aeolia, near Pithane (These capitals should be located).

**Ion-14** Medium-grained, Greek (island?) marble Ionic capital of the sphinx column of Kyrene [currently Shahat], found in Shahat [ancient Kyrene], in a disused quarry *extra mura*.

Origin: Probably Thera

Date: 550 BC, or shortly thereafter (White, 1971, p.52). This date is confirmed by the sphinx detail, as well as external evidence (Pedley (1971, p.40-6).

Other dates: Kirchhoff dates the capital to ca 560 BC (1988, p.25).

Description references: Kirchhoff, 1988, p.25-6, No.11; [-] *Libya Ant.*, Vol.3/4, 1966-7, p.190 flw.; White, 1971, p.49 flw., Fig.1, 2 and Plate 10, Fig.5, 6. Dimensions: The dimensions as reported by Kirchhoff (1988) from the good scaled drawing by White (1971, Fig.2) are approximate. The author has further taken the cyma and *canalis* heights, as well as the volute eye-to-edge dimensions from this scaled drawing, which may be used for comparative purposes.

Notes: White gives a good quantitative and qualitative comparison between this capital and the others of the time, as well as indicating the similarities between this and the Naxian sphinx column. The work is apparently imported from an unknown (probably Thera) workshop, or finished in situ by recent Ionian immigrants (White, 1971, p.55). The Kouros and Korai that were found with the capital are of the same marble, and show strong Samian traits, but also local particularities in detailing.

- A module of 73,875 (qt of variation of Solonic-Attic ft= 295,5) or 73,95 (qt of variation of Solonic-Attic ft=295,8) which looks promising [the latter was used in ratios] should be tested to the newly measured dimensions of the artefact.

**Ion-15** Model reconstruction from a fragment of a marble Ionic capital of the Lower Temple (Bld-21) at Myus, found in the lower terrace, *temenos* at Myus. Reconstruction and original fragments in archives of Pergamon Museum, Berlin.

Origin: Myus

Date: Around 550 BC (Weber, 1967, p.139). Other dates: Gruben (1963, p.124, Note 79) calls for a chronological link between this building and the Artemision [ie to him app 550-40 BC]. Alzinger's (1972-3) date for the building is just before the start of the Artemision ['D'] temple in Ephesos. The date for the Artemision 'D' is just before 550 BC (Bammer, 1984, p.76 and Fig.84). Kirchhoff's date of ca 560 BC (1988, p.75-6) seems too early.

Description references: Alzinger, 1972-3, p.178, Fig.8; Mace, 1978, p.204-5, No.46, Fig.55-6; Kirchhoff, 1988, p.75-6, No.47; Weber, 1965, p.54 flw.; Weber, 1967, p.137 flw., Fig.5 [drawing side elevation and dimensions], Plate 8.1 [copy of photo of reconstruction];

Dimensions: The capital remains a model reconstruction, and dimensions are not measurable from the original. The main dimensions for the plaster reconstruction were measured by Kirchhoff (1988, Note 222), drawn by Weber (1967 [width]) and also reported by Mace (1978). Those dimensions of smaller elements of the model are more approximate because they were not taken from the model with calipers but are the author's reconciliations of those measurements taken from Museum photo PM643 (Staatliche Museen, Berlin, kindly provided by Dr V. Kästner), the author's own more horizontal photograph of the model elevation [taken with a telephoto lens and with staff present], regulated by use of the published dimensions. Notes: The author thanks Prof. Dr. Heilmeyer, Director of the Staatliche Museen, Berlin, for permission to photograph the capital with a measuring staff present. Also thanks to Dr. H Kienast of the DAI, Athens, for help in this regard.

- The detailed reconstruction of plan dimensions and previously unpublished portions of the column and capital fragment by Weber (1965, p.54-63, Fig.4; 1967, p.128-143, Fig2-6, Table 8.1) vindicates the well-known plaster reconstruction of the capital in the Berlin Museum shown here.

- A Cycladic foot standard measure of 295,5 (?) is proposed as module for the building and capital, but a foot standard measure of 293,75 applies equally well on both.

- In terms of the possible foot standard used [ie 295,5 (?)] a link with Temple 'A' from Paros could be investigated.

**Ion-16** Reconstruction from fragments of a marble Ionic capital of the Artemision 'D' (Bld-2d), Ephesos. British Museum, catalogue No.B.49.

Site found: The Artemision 'D', Ephesos.

Origin: Ephesos

Date: Bammer (1984, p.76 and Fig.84) places the building start date before the middle of the Sixth Cent BC. He (1991, p.64) recently presented evidence that the *crepidoma* was complete by 560 BC, making his date very feasible. Other dates: Hogarth's (1908b)

building date was 550-25 BC. Kirchhoff's (1988, p.77) dating of the capital is 560-50 BC. Boardman earlier argued for a date in the 3rd qt. of the 6th Cent BC or later, contemporary with the Heraion IV (1959, p.205).

Description references: Alzinger, 1972-3, p.174, Fig.5 [capital only partly restored]; Kirchhoff, 1988, p.76-7, No.48, Fig.2.1 [also see No.49]; Pryce, 1928, p.42, No.B.49, Fig.34 [fully restored capital]; Hogarth, 1908a, Plate VI [scaled drawing of reconstruction]; Hogarth, 1908b, p.268 flw., 276 flw., Fig.80; Theodorescu, 1980, p.161, No.1; Murray, *JHS*, 1889, p.5-7, Plate 3.

Dimensions: Dimensions are not measured from the artefact, but gained as accurately as permitted from the large scaled drawings of the reconstruction by Hogarth (1908a, Plate VI [section and elevation]). These were remeasured by the author, and *errata* in Kirchhoff (1988) and Mace (1978) were found. Even though the total capital length [A] is hypothetical, the lengthwise fragment of a volute, and over half of the echinus, may permit reasonably accurate identification of a capital-volute-extremity-to-midline dimension. For this reason, as reconstructed capital, Ion-16 is usable in quantitative comparisons, always mindful of its true [uncomplete] nature.

Note: It is accepted that the Hogarth's reconstruction uses fragments that belong together.

**Ion-17** Parian marble Ionic capital (with separated *canalis*) of a sphinx or lion votive column dedicated to Archilochos, found in Ag Tris Eklesies, Paros. Paros Museum, item 733 (München TU No M71).

Site found: Ag Tris Eklesies, Paros.

Origin: Paros

Date: Ca 550 BC (Ohnesorg, 1993b, p.114). Other dates: Shortly after 550 BC (Haselberger, 1986, p.213); 550 BC (Gruben, 1989, p.166); Kirchhoff's (1988, p.26) date is the second quarter of the Sixth Cent BC. Description references: Daux, 1961, p.846, Fig.24-5; Daux, 1962, Fig.10; Jacob-Felsch, 1969, p.189, No.121; Kirchhoff, 1988, p.26, No.12, Fig.1.4; [-] Kontoleon, N. *Aspects de la Grèce Pré-classique.*, 1970, p.35.68 [sic]; Orlandos, 1964, p.190, Fig. 9; Orlandos, 1966, p.255 flw, Plate A; Ohnesorg, 1982, p.289 ff., Fig.1, 11; Theodorescu, 1980, p.162, No.24; Mace, 1978, No.53, p.212-3, Fig.41-3, Ohnesorg, 1993b, p.114, Note 28 [Dims], Plate XXI.3-4; Haselberger (1986, p.213, No.10.1 and sketch).

Dimensions: The length and width dimensions from Orlandos (1966, Plate A) and (1964, Fig.9) cannot be trusted due to differences in his own publications. As Kirchhoff (1988, p.26, Note 96), the author uses Haselberger's (1986, p.213) drawing for dimensions [using the right side volute with width of 276,7 for internal volute dimensions rather than the left volute of 279], which drawing has now been further augmented by the author by scaling remaining portions from the drawing [Some dimensions are different to that of Kirchhoff]. Ohnesorg's (1996, Note 28) length [912] dimension is also different to Haselberger's.

Notes: The author has augmented Haselberger's highly accurate drawing by reconstructing a possible volute lay-out diagram of the artefact. Haselberger's

(1986, p.213) report that the volutes are not geometrically ordered, but are free spirals within the proportionally ordered whole, is partly correct in that some geometric order is present (A volute lay-out diagram made on Orlandos's drawing would be incorrect, indicating caution in working on rough drawings). The base dimension used as module is a dactyl of 18,44, and D:E:D=3:4:3, A:Q=5:3, D:G:B=5:6:7, K:J:Volute distance below echinus =6:7:5. These ratio's of Haselberger have been utilised in gaining further dimensions, which (apart from B) were controlled on his.

- Ohnesorg (1982, p.289) said this capital and its base was possibly originally dedicated to the poet Archilochos, and later utilised as central cult element in the heroön of Archilochos during the second half of the Fourth Cent BC. Later she (1996, p.114) says it was used as a 6th Cent BC grave dedication, later dedicated to Archilochos.

**Ion-18** Parian marble Ionic capital (with separated *canalis*) of a Naxian sphinx column from the Artemision of Delos. Delos Museum, item A583.

Site found: Near the Artemision, Delos

Origin: Naxos

Date: 570-550 BC (Ohnesorg, 1993b, p.113, Note 21), but a little bit after Ion-10 from Paros. Other dates: 560-50 BC (Kirchhoff, 1988, p.27). According to Jacob-Felsch (1969, p.113) the votive column was erected in 560-50 BC, and was one of two standing together (The other capital is Delos Museum No. A584: Ion-19).

Description references: Amandry, 1953, p.19 Footnote 1, Plate 15.3, 16.1-3; Jacob-Felsch, 1969, p.112-, No.8.2 [no dimensions]; Kirchhoff, 1988, p.27, No.13, Fig.1.5; Martin, 1972, p.311, Fig.6; Martin, 1973, p.387, No.7-8, Fig.14-7 [Dimensions]; Theodorescu, 1980, p.162, No.26; Vallois, 1966b, p.171, No.9.

Dimensions: Reported by Martin (1973, Fig.17) as part of his reconstruction.

Notes: It is remarkable that this Naxian artefact is made from Parian marble (See Ohnesorg, 1993b, p.113). Jacob-Felsch (1969, p.113) indicates that the base and column were similar to the Naxian sphinx column at Delphi.

**Ion-19** Second Parian marble Ionic capital with separated *canalis*, of a Naxian sphinx column from the Artemision of Delos. Delos Museum, item A584.

Origin: Naxos

Date: 570-550 BC (Ohnesorg, 1993b, p.113, Note 21), but a little bit after Ion-10 from Paros. Other dates: 560-550 BC (Kirchhoff, 1988, p.28); According to Jacob-Felsch (1969, p.113) the votive column was erected in 560-50 BC, and was one of two standing together (The other capital is Delos Museum No. A583 [See Ion-18]).

Description references: Amandry, 1953, p.19 Footnote 1, Plate 16.4-5; Kirchhoff, 1988, p.28, No.14; Vallois, 1966b, p.171, No.10.

Dimension: The few remaining dimensions from Kirchhoff (1988, p.28) are: D=383, G=498. Capital cannot be used in quantitative comparisons.

Notes: It is remarkable that this Naxian artefact is

made from Parian marble (See Ohnesorg, 1993b, p.113). Jacob-Felsch (1969, p.113) indicates that the base and column were similar to the Naxian sphinx column at Delphi.

**Ion-20** Naxian marble Ionic capital of a votive column with engraved marks, Delos.

Site found: The theatre, Delos.

Origin: Naxos [?]

Date: Approximately 560 BC (Martin, 1973).

Description references: Martin, 1973, p.382, No.5, Fig.9-11 [drawings]; Theodorescu, 1980, p.162, No.27; Vallois, 1966b, p.168, No.3 [description, dimensions].

Dimensions: Martin, 1973, Fig.11. There are big discrepancies between Vallois's measurements and those of Martin. The author has used those in Martin's reconstruction, and has corrected the mistake of the vertical dimensions of the volute centre in Fig.11.

Note: Echinus leaves are elongated and articulated with grooves only. The canalis has a triangular bottom.

**Ion-21** Fragments of an Ionic capital from the acropolis, Athens. Pergamon Museum Archives Item SK997.

Site found: Acropolis, Athens.

Origin: Athens

Material: Unpublished

Date: Just before the Kallimachos column [See capital Ion-62] of 489 BC (Raubitschek, 1938, p.170).

Description references: Puchstein, 1887, p.6-7, Fig.2 [scaled dwg]; Raubitschek, 1938, p.170, Fig.27 [photograph]; Mace, 1978, p.164-5, No.10, Fig.126-7; Altenkamp, 1991, p.485, Fig.2 [From Raubitschek].

Dimensions: Even though some dimensions may be taken from the author's photograph, they cannot be used in quantitative comparisons due to the extremely damaged state of the capital.

Notes: Photographs are published with kind permission of Prof. Dr. Heilmeyer, Director of the Staatlichen Museen, Berlin. Thanks also to his member of staff, Dr. V Kästner, and to Dr. H Kienast of the DAI, Athens, for help in this regard.

- The Lesbian cyma is carved in low relief. The canalis is flat, but edged with rectangular border.

**Ion-22** Fragment of an indigenous Poros Ionic capital of a votive column (Col-5) from the sanctuary of Aphaia, Aegina.

Site found: The cistern in the *temenos* at Aegina

Origin: Aegina

Date: Gruben (1965, p.207; 1989, p.169, Note 25) sees the votive column as a very early Ionic example of the beginning of the Sixth Cent BC, and the start of the monumental type of votive column [It is however preceded by a column with unknown top part, at Kolonna, Aegina]. Gruben's date is supported by the Kolonna evidence. Other dates: Kirchhoff (1988, p.22, Note 73) dates the Aeginetan Sphinx capital [Ion-22] to ca 550 BC with the help of capital Ion-10, and due to the inclined volutes, but his date is not accepted. Description references: Alzinger, 1972-3, p.199,

Fig.31; Gruben, 1965, p.170, 180, Fig.1, 2, Table 2, 3 and Appendix 68-70; Kirchhoff, 1988, p.19, No.8.

Dimensions: From Gruben's (1965, Table 2) reconstruction drawing. Dimensions A, C and D cannot be measured from the artefact, but A and D are redeemable due to the existing volute spiral.

Notes: Gruben (1965, p.198, Note 48) attests that the sphinx that he uses in the reconstruction, namely the one from the "Aphrodite" [actually Apollo] sanctuary at Kolonna, was of Cycladic origin: (As apparently confirmed by K.Schefold). Walter-Karydi (1987, p.49) however sees the sculpture as being an Aeginetan work, but she (1994, p.128 Note 6) does see the column as being Ionic in detail [fluting] and nature [She is adamant about a column at this time carrying a sphinx]. According to Kirchhoff (1985, p.21-2) and Gruben (1965, p.207) the Aeginetan capital was an indigenous creation, with recognisable Cycladic and east-Ionic (in this case Chiotan) stylistic influences.

- The capital is the earliest example with inclined volutes (Used for optical reasons, according to Gruben (1965)).

- The quarter foot of a 291,25 foot standard seems to provide a module for the reconstruction drawing of the capital, as well as the column shaft height, and is similar to that of the Naxian Sphinx column at Delphi [Ion-6] and the Dionysos Temple at Iria, Naxos [Ion-7]. This analysis should be tested to other portions of the artefact. If this is true it would, together with similarities with early Cycladic column fluting design and the use of Cycladic marble for the sphinx, be an indication of Cycladic collaboration in the artefact.

- Gruben (1965, p.198) reports a Doric 324 foot measure used for Temple II of 570 BC; A few of his given capital dimensions allow for a qt. ft of 82 (1ft = 324) to be seen as base dimension.

Column: See Col-5 in 2.4.1.2.

**Ion-23** Reconstruction of a fragment of a marble Ionic capital of a votive column, Thasos. Thasos Museum, item 217.

Site found: Wall B, bastions of the centre entrance of the Acropolis.

Origin: Thasos

Date: Middle Sixth Cent BC (Kirchhoff, 1988, p.28-9) due to similarities with capital Ion-18 [560-50 BC {Kirchhoff, 1988, p.27; Jacob-Felsch, 1969, p.113}].

Description references: Kirchhoff, 1988, p.28-9, No.15, Fig.1.6; Martin, 1972, p.303, Fig.1-3 [Dimensions].

Dimensions: From Martin's (1972, Fig.2) reconstruction.

Notes: Kirchhoff (1988, p.29) thinks that, due to form similarities with the Naxian sphinx capital [See Ion-18], this capital might have had a separated *canalis*.

- The echinus has an astragal fixed to its bottom

**Ion-24** Reconstruction of a fragment of a rough-granulosed marble Ionic capital of an interior column (and tristyle in-antis façade\*) of the Naxian *Oikos* (Bld-12b), Delos.

Site found: East and adjacent the *Oikos*

Origin: Naxos.

Date: A date of before 580 BC is accepted. The dating of the building and its capitals are hotly debated: 575 BC (Courbin, 1987, p.68 Note 20, p.69); Ohnesorg (1996, p.41) dates it to the beginning of the Sixth Century BC; Gruben (1996, p.70) to before 580 BC (See notes below, and also the author's comment in Chapter 4). Other dates: Kirchhoff (1988, p.30, Note 103) rejects circumstantial evidence and dates [Gruben (1989, p.168, Note 15) rejects his method and date] it to ca 550 BC based on proportions only. Gruben (1989, p.172 and also Note 29 for dates) accepts the building date as beginning Sixth Cent BC, or the 1st quarter of the Sixth Cent BC (1989, p.168 Note 15), and lastly (1996, p.70) as before the Dionysos temple IV, Iria, Naxos, which he dates to 580-70 BC.

Description references: Courbin, 1980, p.51 flw., Plate 6, 49\1-5[\*capital]; Martin, 1973, p.390, No.10, Fig.18 [\*\*description and dimensioned drawings]; Kaster in Gruben, 1963, p.177 flw., Fig.47 [\*\*\*Dimensions]; Kirchhoff, 1988, p.29-30, No.16; Theodorescu, 1980, p.162, No.25; Vallois, 1966a, p.101, No.2 [internal column base]; 1966b, p.177, No.12 [description internal capital]; Ohnesorg, 1996, p.41, Fig.1 [Acceptance of Kaster's work].

Dimensions: From Ohnesorg's (1996, p.39 [Ref], Fig.1) publication of Kaster's [app. 1962] reconstruction. His dimensions can only be approximate due to the bad condition of the capital (There are wide differences between Kaster's and Martin's dimensions). The indication of a possible design module (based on a module that could be probable for other parts of the building), remains hypothetical.

Notes: Kaster's opinion that the capital might have had an abacus is confirmed in Courbin (1980, Plate 6) and Ohnesorg (1996; Kaster's drawing). Kaster's (1980, p.180) volute [D] : dist btw volutes [E] ratio of 1 : 1 is confirmed by Ohnesorg (1996, p.41 [her Va : V]). The volute spirals were lightly carved or drawn on, but due to the condition of the capital no accurate deduction is possible. The echinus is a "hanging" smooth Ionian cyma. The existence/form of the spandrel palmette, part of the echinus, is unclear.

-\* Courbin's (1987, p.71) argument that the outside in-antis west façade and the inside colonnade capitals are similar and contemporary, is accepted.

-\*\* Martin's (1973, Fig.18) reconstruction is not used.

- \*\*\* Column and parts of the capital reconstructed by Kaster (Drawing in Gruben (1963, p.177-82, Fig.38 [Here by Gruben], 47-8). The volute widths differ from Vallois (1966a) and Martin (1973).

- The plan ordering device seems to be a rectangle across [2,5 : 3].

**Ion-25a** Reconstruction of a damaged Naxian marble Ionic capital of the Naxian Stoa (Bld-22), Delos. Delos Museum, item A7672.

Site found: South of the Agora of the *Competaliasts*, Delos.

Origin: Naxos.

Date: Martin's (1972, p.314) date is 550-40 BC. Others: Kirchhoff (1988, p.34) indicates that all the capitals originated in the Third quarter of the Sixth

Cent BC.

Description references: Alzinger, 1972-3, p.186, Fig.17; Kirchhoff, 1988, p.31-2, No.17; Martin, 1972, p.314, Fig.7; Martin, 1973, p.392, No.12, Fig.19-21; Theodorescu, 1980, p.162, No.28; Vallois, 1966a, p.101, No.4 [Column]; Vallois, 1966b, p.179, No.14; Hellmann *et al*, 1979, p.103 flw., No.A. [Also photographs of the whole group].

Dimensions: From Martin's (1973, Fig.20) reconstruction. His drawing has a reconstructed bottom diameter that is much too big (Martin's (1973, No.12, p.392) written dimensions also indicate 260) if compared to Vallois's (1966a, p.101; 1966b, p.179) top of column [255], and capital bottom diameter [250] dimensions. Because Hellman *et al*'s (1979, p.104) list of (Vallois's) capital dimensions show a range of 255-270 [Column diameters differ], a diameter of 255 [as Vallois's] is used in the comparisons of capitals. There is a problem in that the dimensions of the fragment used by Martin have not been published, and comparison with the reconstruction is not possible. He also does not explain how he obtained the dimensions, even though there are a few capitals. On the whole, the dimensions of the series differ slightly (See Kirchhoff, 1988, p.31-5; Hellman *et al*, 1979, p.104 table), and there is a variation of 1/7 between the min. and max.capital lengths. This gives an idea of the the accuracy level of the reconstruction, as well as of any found base dimension. Conclusions from analyses of dimensions of Ion-25a should be seen in this light. Because the Delian foot of 330 (1"=27,5) has been identified as base dimension by Hellman *et al* (1979, p.111) for the whole building and the capital, it is so used and indicated in the analysis of the capital.

Notes: Capitals Ion-25a-f (Kirchhoff, 1988, No.17-22; Also in Hellman *et al* (1979) belong to the same building and will not be described here.

- There is a small angle at the volute-top bearing plane junction. The two sides of the capital have differing volutes: The volutes in Hellman *et al* show a wider channel and fewer turns.

**Ion-26** Reconstruction of a fragment of a white marble Ionic capital of the temple of Apollo Phanaios (Bld-26), Phanai, Chios. Present location of fragment No.29 unknown.

Site found: From the site.\*

Origin: Chios

Date: Boardman's (1959, p.184) date for the capital is 525-500 BC (The building in the third quarter of the Sixth Cent BC, and 525-500 BC for the capital, due to features more advanced than those at Ephesus and Samos (Boardman, 1959, p.183, Table p.184)). Other dates: Third quarter of the Sixth Cent BC (Kirchhoff, 1988, p.83, p.323 Note 677).

Description references: Alzinger, 1972-3, p.187, Fig.18; Boardman, 1959, p.170 flw., p.180 flw., Fig.4, Plate XXVIIa, b; Kirchhoff, 1988, p.82-5, No.50; Lamb, 1934-5, p.142 flw., Table 30c, d., [Fig 6d?]; Theodorescu, 1980, p.162, No.34 [See Boardman, 1967]; Kyrieleis, 1978, p.385 flw.; Kyrieleis, 1980, p.336 flw.

Dimensions: Kirchhoff gives dimensions from Boardman's (1959, Fig.4) unscaled reconstruction

[with approximate overall dimension]. For comparative purposes this is further augmented with dimensions scaled off by the author. The dimensions are approximate. Note that the abacus height is unknown because it has been lost.

Notes: \*Currently the temple site is under the Basilica Church and a modern chapel.

- The plan ordering device is a rectangle rather than Theodorescu's (1980, Table 2, Plate 4) square.

**Ion-27** The Naxian marble Ionic so-called "Nieborów" capital, most probably belonging to the Propylon II, Delos [Connected with Ion-32 and Ion-48]. Warsaw Nat Museum, item Nb2570MNW.

Site found: The locality of Lowics.

Origin: Gruben identifies it as Delian [Mickoki deems it hailing from Naxos or Delos].

Date: 520-500 BC as for Ion-32 (Gruben (1997, p.368-9). Other dates: The capital which is similar to the early island Ionian types but with strong Athenian influence, based on the proportions and form properties of the capital and in comparison with others, is dated by Mikocki to 500-470 BC (To him certain form properties are 'more advanced' than the others' dated to the Sixth Cent BC). Gruben sees this date as marriagable with that of the corner capital Ion-32. With proportions only, the date as per Theodorescu's system (1980) would have been 480-60 BC (1986, p.141-3). Kirchhoff (1988, p.228) dates the capital to the third quarter of the Sixth Cent BC, based on the proportions.

Description references: Kirchhoff, 1988, p.228-9, No.N1; Mikocki, 1986, p.137 flw., Fig.1-3; Gruben, 1997, p.369-71.

Dimensions: Most dimensions are retrievable from the artefact except the volute height which is approximate on Mikocki's (1986, Fig.1) reconstruction of it. The volute channel bottom bead dimension, echinus diameter and volute width were scaled off and added to his dimensions. Gruben's (1997, p.371) report of Mickoki's dimensions are not exactly similar to his.

Notes: Gruben (1997, p.369) lists the affinities between this, the corner capital and the Pheia capital and his reasons for apportioning them to the same building. The inner façade has a concave canalis, the outer convex.

**Ion-28a-b** Reconstruction from six fragments of the marble Ionic capitals of the Archaic Didymeion (Apollo) temple, Didyma (Bld-6d). Pergamon Museum, Berlin.

Site found: On the temple site.

Origin: Didyma

Date: The date for the Archaic building and terrace wall is 550 BC onwards, according to Tuchelt (1991, p.21), with detail of the terrace dated to 540 BC. The date for the capital is *ca* 540-30 BC, because the frieze is from 530 BC onwards (Schattner, 1996, p.41). Other dates: Gruben's (1963, p.176) date is between 540-20, based on built form and sculpture of the temple. He mentions that there is no established date (He (1963, p.164) also gives 530 BC as an approximate date). Kirchhoff's date is 540-30 BC (1988, p.86).

Description references: Ion-28a (Standard): Alzinger, 1972-3, p.178, Fig.7; Gruben, 1963, p.115 flw., Fig.16-9; Kirchhoff, 1988, p.85-6, No.51 [ No.52: See Ion-82]; Theodorescu, 1980, p.161, No.8.

Ion-28b (Corner): Gruben, 1963, p.131 flw, 159 flw, Fig.22 [Underside diagonal volute], 41,42 and 43a-b; Kirchhoff, 1988, p.208, No.EK1.

Dimensions: Gruben (1963, p.118, 127) indicates that the fragments allow for ascertaining detail and design module (eg from the existing column diameter and volute width. The dimensions used are from Gruben (1963, p.127), which are reconstructed, design dimensions, rather than executed dimensions. His dimensions mostly occur within a maximum tolerance of 1,0% from the modular ideal, and for deducted dimensions up to 1,75%, last (according to Gruben) well within the accuracy range possible in reconstructions. Even though they are hypothetical, the clarity in these dimensions is reflected in the design of the building as a whole, and will be used as such.

Notes: The square plan ordering device as Gruben (1963, Fig.21) and Theodorescu (1980, Plate 4), and the use of the 349 Samian foot in Gruben (1963, p.127). Gruben (1963, Note 70) indicates that, due to the canalis-volute junction, the volute spiral is not ordered mathematically or by circle constructions, to him an example of artistic freedom in aesthetic matters. The author has constructed a geometrical ordering device (Chapter 4, Fig.4a.16), which should be tested on Gruben's (1963, Fig.16) 1:7,5 drawing.

- Gruben (1963, Fig.41-2) uses types of corner capitals and models of a corner capital to show that the remaining fragments actually make up part of a capital with diagonal volutes.

**Ion-29** Fragment of a white marble Ionic capital of an unidentified temple, found in the Bysantine aquaduct, Selçuk [Ephesos]. Selçuk Museum, Item KA1.

Site found: The Byzantine aquaduct, Selçuk.

Origin: Ephesos

Date: Both Kirchhoff (1988, p.87) and Theodorescu (1980, Table 1, No.2) date the capital to 550-25 BC.

Description references: Alzinger, 1972-3, p.175 flw, Fig.6a; Bammer, 1972a, p.440 flw., Fig.1-11; Kirchhoff, 1988, p.87, No.53; Wilberg, 1906, p.232, 234, Fig.199; Theodorescu, 1980, No.2; Mace, 1978, No.40, Fig.70-5.

Dimensions: Extant dimensions are from Bammer (1972a, Fig.11), with volute dimensions scaled from Wilberg's (1906, Fig.199) reconstruction. The length, height and echinus diameter of the capital are therefore hypothetical.

Note: Theodorescu wants to link the capital with the Artemision 'D' (1980, p.161). Bammer indicates a strong influence in terms of form and detail but does not classify it as part of the Artemision finds, and Kirchhoff doesn't mention the link.

**Ion-30** Poros Ionic capital of a votive column (See Kawerau, 1907, Fig.1), Athens. Acropolis Museum, item 3655

Site found: Acropolis

Origin: Athens

Date: Little bit older than 530 BC (Raubitschek, 1938, p.166); Not before 530 BC (Boardman, 1959, p.206); Ca 530 [Type B] (Jacob-Felsch, 1969, p.34, Note 106.1). Other dates: The date of "die erste Zeit des 6. Jahrhunderts" by Kawerau (1907, p.206) [and 540-30 BC by Theodorescu (1980, Table 1, No.44)] apparently cannot be sustained: Boardman (1959, p.206 and Note 6) argues that Athenian capitals with connected volutes do not appear before 530 BC. One must still consider the validity of this statement in the light of findings relating to the proposed connection between the column identified by Raubitschek (1949, No.1, p.5) and the capital figured by Wiegand (1904a, p.172-3, Fig.172).

Description references: Alzinger, 1972-3, p.195 flw., Fig.25; Kawerau, 1907, Fig.1-4, Plate IV [scaled drawings]; Raubitschek, 1938, p.166-7, Fig. 24; Theodorescu, 1980, p.163, No.44; Puchstein, 1887, p.12, Fig.9 [scaled drawings].

Dimensions: The dimensions are approximate, scaled from Puchstein's (1887, Fig.9 [capital]) and Kawerau's (1907, Fig.1 [column]) reconstructions. One takes note of Raubitschek's (1938, p.166) insistence that the diameter of both the echinus and decorative piece at the column top is 240. The column flutes are deep and the flat arris, probably a first, is used (See shaft in Raubitschek (1938, Fig.24)).

Notes: The 328 'Phaidonische Fuß' as mentioned by Drerup (1937, p.234) mostly used in all early Attic capitals, was tried on the approximate dimensions gained from the drawings and it fits well (Only the length of the capital however might have been a bit shorter, ie  $2 \times 228$  (width) = 456, in stead of 464). It is therefore proposed that this capital be accurately measured and this finding tested.

- The hexagonal plan ordering device is mentioned by Theodorescu (1980, Table 2).

- This is not the large, famous poros capital from the acropolis (See Raubitschek, 1949, No.1, p.6) which is deemed by him to be as old as the Aeginetan sphinx capital and the Naxian sphinx capital at Delphi.

**Ion-31** Reconstruction from a fragment of an Ionic capital of a votive column, Selinus. Palermo Nat Museum, item 324.

Origin: Selinus

Material: Not published.

Date: Theodorescu's (1974, p.46) date, from a typological comparison, is the "end of the Sixth and the beginning of the Fifth Cent BC", and also 510-480 (?) BC (1988, Table 1, No.78).

Other dates: Due to the large volutes Kirchhoff's manufacture date is the last quarter of the Sixth Cent BC (1988, p.36).

Description references: Kirchhoff, 1988, p.35-6, No.23; Theodorescu, 1974, p.13, paragraph 2.1b capital No.II, Plate III, Fig.4, and XII Fig. 5, 6; Theodorescu, 1980, p.164, No.78.

Dimensions: Dimensions used are from Theodorescu's (1974, Plate XII Fig.5) reconstruction. Although the total top bearing-to-bottom bearing height is 345, a measurement of 260 from top-bearing-surface-to-below-leaf-cyma is used for comparative purposes.

Note: The hexagonal plan ordering device is shown by Theodorescu (1980, Table 2). The top of the canal is bow shaped.

**Ion-32** Big-crystalline [Naxian] marble Ionic corner capital of the Propylon II outer façade, Delos [And hypothetical standard capital][Connected to Ion-27 and -48], Delos Museum.

Origin: East island Ionian, most probably Naxian (Gruben, 1997, p.368).

Date: 520-500 BC (Gruben, 1997, p.368). Other dates: Earlier Gruben (1963, p.168) identified the capital as Late Archaic. (Theodorescu (1980, p.162) gives a date of 540/10 BC. Kirchhoff's date is the last quarter of the Sixth Cent BC (1988, p.37). Boardman hesitates to assign it to the Sixth Cent BC (1959, p.210)).

Description references: Dinsmoor, 1928, p.133; Martin, 1944-5, p.362 Footnote 4; Roux, 1961, p.343, Plate 91-2; Gruben, 1963, p.168-9, Footnote 159, Fig.44a-b; Vallois, 1966b, p.180, No.20; Theodorescu, 1980, p.162, No.29; Kirchhoff, 1988, p.36-7, 208, No.24/EK2; Gruben, 1997, p.363-72, Fig.49 [det dwgs], 50 [photos], 54 [axonomic].

Dimensions: The author initially relied on dimensions from Vallois (1966b) [as if it were a standard capital] and Mace (1978, No.31, p.182), with volute inner dimensions scaled from the photograph in Roux (1961, Plate 91.2). This unsatisfactory situation is avoided now that Gruben's (1997, p.371) dimensions for his and Ohnesorg's hypothetical standard capital is available (He is also aware of the fact that corner capitals often vary in size relative to the standard, an aspect also dealt with by Koenigs (1979, p.193) and Korrés (1996, p.92, Fig.3-4)). Due to the long history of speculation around this capital, Gruben's hypothetical dimensions are still provided, even though capital Ion-48 obviously now provides the dimensions for an outer capital.

Notes: After a long sojourn it is now accepted that this capital is not from the *Porinos Naos* [As a matter of interest Gruben (1987, p.76) dates the building to the end of the Sixth Cent BC, whilst he (1963, p.168 and Footnote 159; 1997, p.360) identifies the *Porinos Naos* as an *in-antis* temple. Boardman also did not accept the assignation to the *Porinos Naos* (1959, p.210).

- See Gruben (1963, Footnote 159 on p.168) for references of different datings [mostly Late Archaic] as well as different functional assignations [eg Courby (Delos XII) assigned it to the *Propylon*] and (1997, Note 265) for the capital's history.

- Earlier Gruben (1963, p.168) classified the capital as eastern island Ionic with Attic influence, and identified it as the earliest existing example of an Ionic corner capital [but not necessarily the first]. He saw in the exposed upwardly flaring echinus at the inner corner a reflection of a possible early form of corner capital, eg an hypothetical corner capital of the Artemision 'D'. His dating then was that it should be later than the start date for the Didymeion/Apollonion [540-20 BC], but before the date of it's capital [540-30 BC; see Ion-28]. This dating now falls away.

- The plan ordering device of a hexagon is shown in

Theodorescu (1980, Table 2). Gruben (1997, Fig.49) shows the volute ordering diagram. The experimental uncurved diagonal volute is probably the first in the Cycladic region after the east Ionian types (Gruben, 1997, p.369), and of type III designated by Korrés (1996, p.93, Fig.5).

**Ion-34** Ionic capital [3852] from the acropolis, Athens. Acropolis Museum, Item 3852.

Site found: Acropolis

Origin: Athens

Material: Unpublished

Function: Unpublished, most probably a votive column.

Date: 530 BC (Raubitschek, 1938, p.166); Ca 530 [Type B] (Jacob-Felsch, 1969, p.34, Note 106.3).

Description references: Raubitschek, 1938, p.166-7, Fig.25.

Dimensions: None published. Capital cannot be used in quantitative comparisons.

Note: Raubitschek links the capital to the Ameinias capital [See Ion-76; Acropolis Museum 3850], with an established date of 530 BC.

**Ion-35** Damaged marble Ionic capital of a votive column, Acropolis, Athens. Acropolis Museum. Item No. 3853.

Site found: Acropolis, Athens.

Origin: Athens

Date: Approximately 520 BC (Bormann, 1988b); Ca 530 [Type B] (Jacob-Felsch, 1969, p.35, Note 106.4).

Description references: Bormann, 1887, p.8, Plate 18.1 [not 1988a, Plate 29.2]; Bormann, 1888b, p.276, Fig.17; Trowbridge, 1886, p.25-6, Fig.3; Von Luschan, 1912, Fig.2; Lehmann-Haupt *et al*, 1913, p.469, Fig.2; Braun-Vogelstein, 1920, Plate 3.4; Wurz, 1925, p.97, Note 3, Fig.246a-b; Mace, 1978, No.2, p.152, Fig.104-5.

Dimensions: Dimensions are approximate, only to be used for comparative purposes. Dimensions are provided in Trowbridge's (1886, Fig.3) reconstruction, from which the volute spiral and vertical dimensions were scaled. The [lost] abacus length and depth as scaled from Trowbridge's drawing is a hypothetical exercise [The Bormann and Wurz elevations show where the abacus was sheared off, below the volute connection, begging the question how Trowbridge drew the section showing the shear to be at the top of the volute. Nevertheless, other contemporaneous examples, as well as Wurz (1925, Fig.246 [reworking of Bormann (1887, Plate 18.1)], indicate that Trowbridge's reconstruction is not fantastical]. The echinus is oval on the bearing plane, but has a round sunken socket for the connection of the [round] column. connection. *Errata* occur in Mace (1978, p.152).

Notes: This is not Theodorescu's (1980) capital No.45 [which is another, similar capital referred to by Bormann (1888a, Plate 29.2) (See capital Ion-67)].

- The bottom bearing plane has a female column socket for an oval column. Ovuli are painted on the domed echinus. [possible Pheidonian foot of 328]

**Ion-36** Grey island (?) Raubitschek (1949, p.10)) marble Ionic capital of the votive column (Raubitschek, 1934, Fig.4) dedicated to Chairion by Alkimachos. Acropolis Museum, item 124.

Site found: North wall between Propylaea and Erechteion, acropolis, Athens.

Origin: Athens

Date: 520-10 BC (Jacob-Felsch, 1969, p.35, 119; Raubitschek, 1940, p.18). On historical grounds, as well as on the basis of the statue and capital [520-10 BC] a date of 510-500 BC (Raubitschek, 1943, p.18).

Other dates: Kawerau's (1886) date is 520-10 BC. Raubitschek (1949) dates the stander of the column to the last quarter of the Sixth Century BC (on epigraphic evidence), but the statue and capital to the decade 520-10 BC (1940, p.18).

Description references: Alzinger, 1972-3, p.196, Fig.27; Jacob-Felsch, 1969, No.18.2a (capital measurements), 18.2b (column), p.119; [-] Kawerau, G. *AEphem*, 1886, Plate 6; Puchstein, 1887, p.9, Fig.6; Bormann, 1888b, p.284, Fig.26; Raubitschek, 1943, p.17-8, Plate 7.1-3 and Fig 4; Raubitschek, 1949, p.10-1, No.6; Theodorescu, 1980, p.163, No.46.

Dimensions: Due to the state of the capital and method of measuring the dimensions are approximate, but usable for comparison. Those measurable dimensions reported by Raubitschek (1943) [ie A, and B {reconstr}, and fragment top socket-bottom bearing], and Jacob-Felsch (1969) {Similar}, were used as regulating dimensions, after which drawings by Raubitschek (1943, Fig.4) and Puchstein (1887, Fig.6) were reproduced to the same scale [according to the existing regulating measurements] and elements then scaled off. The echinus diameter is hypothetical due to its damaged state. The statue plinth on Raubitschek's side elevation has been drawn to look like an abacus. The author's inspection has shown that he has drawn the plinth incorrectly [there is no abacus]. Jacob-Felsch (1969, p.119, No.2b) mentions a [500 high] plinth connected with the 1100 column, totalling 1600. Notes: The column was offered to Athena in honour of Chairion the Eupatrid (Treasurer), father of Alch[k]imachos (Raubitschek, 1940, p.17).

- The plan ordering device of a rectangle-across is shown in Theodorescu (1980, Table 2).

**Ion-37a** (See also Ion-37b) Two damaged sandstone (Base and column of limestone) Ionic capitals of the pronaos of the Athena temple (Krauss, 1959), Posidonia (Paestum). Paestum Museum.

Site found: -

Origin: Paestum

Date: 510-500 BC (Kirchhoff, 1988, p.40; Theodorescu, 1980, Plate 1, No.74).

Description references: Benoit, 1954, p.35, Fig.13-4; Kirchhoff, 1988, p.39-41, No.27, Fig.1.7; [-] Krauss, 1948, *Mdl*, Vol.1, p.11, Fig.1.2; Krauss, 1959, Capital I, p.45 flw., Fig.27.1, 28.1 and 3, Plate 34-5; Theodorescu, 1980, p.164, No.74.

Dimensions: Measurable dimensions and reconstruction from Krauss (1959, Plate 34-5). Volute extremities are damaged [but Ion-37b gives clues].

Notes: Krauss (1959, p.43-8) notes the standard foot measure of 328 is inherent in the horizontal and



vertical dimensions of the peripteros and pronaos, including the Ionic capital.

- The plan ordering device of a rectangle-across is shown in Theodorescu (1980, Table 2).

**Ion-38** Indigenous marble Ionic capital of a votive column, Thasos. Thasos Museum.

Site found: -

Origin: Thasos

Date: End of the Sixth Cent BC (Kirchhoff (1988, p.42) apparently dated this capital according to his proportional analysis.

Other dates: Martin's (1972) date is 510-480 BC.

Description references: Kirchhoff, 1988, p.41-2, No.28; Martin, 1972, p.308, No.3, Fig.4, 5; Theodorescu, 1980, p.163, No.38.

Dimensions: From Martin's (1972, Fig.5) **reconstruction**. Volutes extremities are damaged. The cyma is lost, and these dimensions are hypothetical.

Note: The plan ordering device of a hexagon is shown in Theodorescu (1980, Table 2). [Test module 291,4]

**Ion-39a** Fragment of an indigenous limestone Ionic capital of Temple 'A' (Zeus Polios (?)), Histria (Theodorescu, 1968, Fig.16-7). Histria Museum. Invoice No. not published.

Site found: Sector of the Greek temple (Sector "T"), 1956 campaign

Origin: Histria

Date: 500-480 BC (Theodorescu, 1968, p.285 [capitals between 500-490 BC], 382).

Other dates: End of the Sixth Cent BC (Kirchhoff, 1988, p.43).

Description references: Kirchhoff, 1988, p.42-3, No.29; Theodorescu, 1968, p.261-84, No.A1, Fig. 1-4 [capitals], 11 [bases], 14 [column, 15-17 [temple]; Theodorescu, 1980, p.163, No.43.

Dimensions: From Theodorescu's (1968, Fig.4a-d, 11, 14) **reconstruction**. Volute extremities are damaged. Fragment more than half a capital.

Note: Theodorescu identifies a design module of one foot = 328 [qt ft = 80,0], and one dactyl is 20,5. The plan ordering device of a hexagon is shown in Theodorescu (1980, Plate 4). The echinus relief does not continue under the bolster.

**Ion-40a** Soft Comiso limestone Ionic capital of unknown building type or votive column, Gela. Gela Museum.

Site found: The cistern at the acropolis Molino a venta.

Origin: Gela

Date: Barletta argues that seen with the other architectural elements, as well as based on the proportions, a date at the end of the Sixth Cent BC is indicated (1983, p.249).

Other dates: Theodorescu's (1974, p.39) date is 550-525 BC, but his last revision (1980, Plate 1, No.75) is 525-500 BC; Adamesteanu's (1960) date is 520-500 BC; Kirchhoff's date is late Sixth Cent BC (1988, p.89); Barletta (1983, Note 32) reports other dates [500-450 BC].

Description references: Adamesteanu, 1960, p.79 flw., Fig.4-5; Barletta, 1983, p.245-8, Fig.40; Kirchhoff,

1988, p.89-90, No.55.1; Theodorescu, 1974, p.12 No.2.1: No.I, Plate I, Fig.1, Plate XI, Fig.3 [dimensioned drawing]; Theodorescu, 1980, p.164, No.75.

Dimensions: From Theodorescu (1974, Plate XI, Fig.3). These dimensions differ from those of Adamesteanu (See Barletta (1983, Note 42)). Also note the *errata* in Theodorescu's horizontal volute-to-volute and volute bead-to-centre dimensions. The echinus has a fixed astragal, included in the dimensions. The capital allows for accurate retrieval of all dimensions. Notes: Barletta stresses the Geloan uniqueness of the echinus [elongated vertical ovoli] and extended abacus, and sees it as a purely stylistic device, but points out the similarities in proportion with Samian and northern east-Ionian examples of the late Sixth Cent BC, (1983, p.249-51).

- In terms of function Barletta argues for a prostyle porch (1983, p.245, 247). Adamesteanu (1960, p.81-2) argues for a votive column.

- The plan ordering device of a rectangle-across is shown in Theodorescu (1980, Table 2).

**Ion-41** Marble Ionic capital of a votive column.

Private owner.

Site found: Unknown.

Origin: Unknown (Gela?)

Date: Kirchhoff (1988, p.90) connects this capital with examples from Gela, and dates it to the late sixth Cent BC. [See Chapter 4 where this date is revisited after the main analysis in this study].

Description references: Kirchhoff, 1988, p.90, No.56; Sotheby, 1970, p.100, No.174, Fig.174 [Photograph and length and breadth measurements only].

Dimensions: All dimensions must be taken as approximate. The capital was redrawn over the photograph [taken from slightly above] from Sotheby's, and other dimensions scaled from the drawing, taking the given capital length [578 in damaged state] as base measure. The bearing-bearing dimension is app 240, which means that the column drum and bead added below the echinus measures 47. The bottom bearing diameter is not obtainable.

Note: Also see Kirchhoff (1988, p.89, No.55.I and IA)

**Ion-42** Reconstruction from fragments of two related sandstone Ionic capitals with marble volute eyes from Massalia (Marseille), possibly of architectural origin (Maybe an Apollonion (Benoit, 1954)). Chateaux Borely.

Site found: 'Pavillion de santé', port of Marseille.

Origin: Massalia (Marseille)

Date: Benoit's (1954) date is 520-10 BC. Benoit (1954, p.35-7) argues for a date after 540 BC [The sack of Phocaia and Ionian colonisation of Massalia], and also between the Heraion IV of 540 BC and the Doric-Ionic temples of Paestum and Silaris from the end of the century. Other dates: The capital is dated to the end of the Sixth Cent BC by Kirchhoff (1988, p.91), and between 520-10 by Theodorescu (1980, Plate 1, No.73). Pedersen (1983, p.111) accepts the Heraion IV capital as the model for this one. We know that the capital of the Heraion IV only came about after 500 BC, and therefore Pedersen (1983, p.111) dates the

Massalia capital to a date after 500 BC (He does not accept Benoit's date). In this study it is accepted that the Massalia capital preceded that of the Heraion IV. Description references: Benoit, 1954, p.16 flw., Fig.1-12, 16; Kirchhoff, 1988, p.91, No.57, Fig.2.4; Theodorescu, 1980, p.164, No.73. Dimensions: All dimensions are by Benoit (1954, p.19-26 and Fig.4, 9, 12) given in his reconstruction drawings. Due to the capital's state the bearing-to-bearing height and volute height remain hypothetical.

**Ion-43** Marble corner capital [and hypothetical standard capital] from a temple, Miletos. Milet Museum, item 2285.

Site found: The city area, modern Milet

Origin: Miletos

Date: From historical and proportional considerations Koenigs's date is to the end of the Sixth Cent BC (1979, p.194). Datewise Kirchhoff (1988) quotes Koenigs.

Description references: Kirchhoff, 1988, p.209, No.EK4; Koenigs, 1979, No.2, p.191-4, 198, Tables 62-3, Plates 4-6 [dimensioned drawings].

Dimensions: From Koenigs's (1979, Plate 5) reconstruction for which most dimensions are not measurable from the fragments. Koenigs reconstructs two possible capital heights: Versions A and B, as well as a hypothetical standard capital from the corner capital dimensions. All dimensions used by the author are as Version A standard capital (Koenigs, 1979, p.198). Koenigs shows his reconstruction method for the volute spiral on Table 4 and postulates a total column plus capital height of 6500-8500 on p.194. The module of 1 dactyl = 21,87 in Koenigs (1979, Note 350).

Notes: Part of the cyma is lost, and capital height is hypothetical. Capital length is deduced from the formula for finding the echinus centre posed by Bammer (Koenigs, 1979, Note 16). Enough is left of the volute front and polster to enable accurate reconstruction of these parts.

**Ion-44a** Fragment of an Ionic capital of a temple, Ephesos. Selçuk Museum.

Site found: The "Door of persecution", St John basilica, Selçuk.

Origin: Ephesos

Material: Unpublished.

Date: Kirchhoff's (1988, p.92) date is around 500 BC. Further, capital No. Ion-44e, was dated to 530-10 (?) BC by Theodorescu (1980, Table 1, No.3)), and Alzinger's (1972-3, p.177) date is 480 BC [Because he links it to the Temple B (now Monopteros III) capitals]. The date of the Temple B capitals is accepted as being soon after 500 BC. This, together with Thieme's tentative dating of the Ephesos capital to ca 500 BC [see comment at Ion-77] leads the author to place it with the Temple B capitals, ie 500 > BC.

Description references: Alzinger, 1972-3, p.177 flw., Fig.6d; Bammer, 1972a, Capital K2, p.440 flw., 446, Fig.18-21; Kirchhoff, 1988, p.92, No.58.

Dimensions: A few dimensions are retrievable [B, E, F, H, M] from the fragment shown by Alzinger (1972-3, Fig.6g) and Bammer (1972a, Capital K2, Fig.21

[Dimensions], Table p.450 [Dimensions]). For limited comparative purposes very approximate dimensions [M, J, K] could be scaled from Bammer (A scaled abacus height of 70 is similar to that of Capital K1, and the maximum echinus diameter is scaled to 530). Kirchhoff reports a maximum capital length gleaned from Bammer (1972a) but no such dimension is given there.

Notes: The capitals were squared off to be re-used as building material, and as a result three-quarters of the volute members, as well as the abacus extremities were lost.

- Although the form and detail of the capitals of the series of capitals by Bammer (1972a, Capitals K1-4 [See Ion-44a-d]) are similar to the other example in Bammer's article, namely Capital KA1, the proportions are quite different.

- One is unsure how Bammer could have overlooked the similarities of the example reported by Alzinger (1972-3, Fig.6f [Wilberg, 1906, Fig.200; See Ion-44e]), and which Theodorescu (1980, Table 1, No.4) mistakingly apportioned to the Artemision 'D'.

**Ion-45** Fragment of a marble Ionic capital (Most probably a temple (?)) near Miletos (Yeniköy, Milet). Milet Museum, item 2264.

Site found: Wall, north of Yeniköy, modern Milet.

Origin: Miletos

Date: From the proportions, as well as other statuary found nearby, about in the second half of the Sixth Cent BC (Koenigs, 1979, p.189). Other dates: Kirchhoff (1988, p.230) dates it to approximately 500 BC.

Description references: Kirchhoff, 1988, p.229-30, Nr.N2; Koenigs, 1979, p.187, No.1a, Plate 60.1-2, Beil.2 [capital drawing], 3 [volute drawing].

Dimensions: From Koenigs's (1979, p.198, Beil.2-3) reconstruction. The fragment allows for accurate echinus and volute dimensions.

Notes: Although Koenigs does not exclude the possibility of the capital being from a votive column, the smooth capital top together with the postulated column height of 5500-6000 (1979, p.189) indicates a building in a sanctuary outside the city.

- Koenigs (1979, Plate 2, p.198) shows the method of volute reconstruction and indicates use of a foot measure of 350 as well as a dactyl measure of 21,87 used as module. The volute-offset spandrels are hypothetical, and the capital may even have had an echinus as the small capital Excl-8 below.

**Ion-46** A limestone Ionic normal capital and two fragments of limestone corner capitals of the pseudo peripteral octastyle Temple 'D' (Mertens, 1979, Fig.2), Metapontum.

Site found: The old sanctuary, Metapontum.

Date: 500-490 BC: Late Archaic, in the Fifth Century BC (Mertens, 1979, p.128, 138-9).

Other dates: Merten's date corresponds with that of Kirchhoff (1988, p.231), ie the early Fifth Century BC. Pedersen (1983, p.111) accepts the Heraion IV capital as the model for this one. We know that the capital of the Heraion IV probably only came about after 500

BC, and therefore Pedersen (1983, p.111) dates the Metapontum capital to a date after 500 BC. In this study it is accepted that the Metapontum capital originated about simultaneously with that of the Heraion IV.

Description references: Kirchhoff, 1988, p.231-4, No.N4; Mertens, 1979, p.103 flw., Fig.2-3; Mace, 1978, p.200, Fig.136-7 [Photographs].

Dimensions: Accurate main dimensions from Mertens (1979, p.107 and Fig.2), with additions from Kirchhoff (1988, p.231) and Mace (1978, p.200). The author has scaled the *canalis* and echinus heights, as well as volute edge-to-eye distances, from Mertens's good drawing.

Notes: Mertens (1979, p.114-5) describes the method of ascertaining the basic design module (an island-Ionic Solonic-Attic foot variation of 293) and the module for the column centres (the module being the epistyle element = 11/16 of a 293 foot = 201,4).

- The pointed ovoli are grooved in the middle.

**Ion-48** Marble Ionic capital of the Propylon II [?], Delos [Standard capital of Ion-32]. Olympia Museum. Site found: The harbour of Pheia, Olympia.

Origin: Cycladic

Date: As Ion-32, 520-500 BC (Gruben, 1997, p.368).

Other dates: Late Archaic piece, date as for the corner capital from Delos [Ion-32] by Mallwitz (1980, p.369. 371); Kirchhoff (1988, p.38.) previously dated it to 525-500 BC, and later (Kirchhoff, 1988, p.231) after proportional comparison with the corner capital, to 500-475 BC.

Description references: Kirchhoff, 1988, p.38, 231, No.25/N3; Mallwitz, 1974, p.108-11, Fig.6 {Provenance. Likeness to Ion-32}; Mallwitz, 1980, p.361 flw., 371 flw., Fig.3, Plate 165-6; Michaud, 1974, p.618 flw., Fig.96; Korrés, 1996, p.95 [Disputes link to Ion-32]; Gruben, 1997, p.363-72, Fig.52-4 [Links capital Ion-32, -48 and 27].

Dimensions: From Mallwitz's (1980, Fig.3) reconstruction, also used by Gruben (1997, p.371). Volute bottom and outer extremities are not measurable from the artefact. The upper surface is damaged.

Notes: There is a bead attached below the echinus. The bearing-to-bearing dimension of 344 includes this element (Dimensions J, K, and L at Ion-48).

- The capital has both concave and convex volutes. The ovoli [pointed] do not continue under the polsters.

- This capital is not part of the Apollo *Porinos Naos* on Delos as previously thought but the outer façade capital of the Propylon II. It shares many of the characteristics of capital Ion-32, a corner capital many thought to also have been from the Delian Apollo *Porinos Naos* but now apportioned to the Propylon II (See capital Ion-32).

**Ion-50a** Thasian marble Ionic capital of the Temple of Artemis, Neapolis. Kavalla Museum.

Site found: Near the Serapeion, Kavalla (Neapolis), north west of Thasos.

Origin: Thasos

Date: Roux's (1961) date is 500-480 BC. Other dates:

In the second half of the Sixth Cent or early Fifth Cent BC (Bakalakis, 1936, p.11). Other dates: First quarter of the Fifth Cent BC (Kirchhoff, 1988, p.45). Raubitschek (1938, p.163) is of the opinion that Bakalakis's date is too early.

Description references: Bakalakis, 1936, p.1-19, No.1, Fig.10-3; Kirchhoff, 1988, p.45-7, No.31; Theodorescu, 1980, p.163, No.42.

Dimensions: From Bakalakis's (1963, Fig.13 and p.10) reconstruction, which dimensions Kirchhoff (1988, p.45) augments.

Notes: The hexagonal plan ordering device is shown in Theodorescu (1980, Table 2). The back volutes have no eyes.

**Ion -51a** Marble Ionic capital of the Dionysos temple (Bakalakis (1963, p.34)), Therme-Thessaloniki. Saloniki Museum.

Site found: Bishop's throne of Basilica Demetrios, - Thessaloniki.

Origin: Therme-Thessaloniki

Date: Late Sixth Cent BC (Bakalakis, 1963, p.31). Bakalakis's (1963, p.31) dating is 'Late Archaic', and statues of the late Sixth Cent BC have been found in the deposit. Kirchhoff's (1988, p.49) date is the first quarter of the Fifth Cent BC, and Theodorescu's (1980) is 510-480 BC.

Description references: Bakalakis, 1963, p.30-4, Plate 17, 1 and 17,4; Kirchhoff, 1988, p.47-6, No.32A.1; Theodorescu, 1980, p.163, No.41 [His capital No.41 actually refers to all Bakalakis's examples. See note at Ion-51e on Miletian influences].

Dimensions: Accurate overall dimensions provided by Bakalakis (1963, p.31, Note 3). For an approximate size the column top diameter is used for H; Internal dimensions scaled from his frontal photograph [Plate 17.1] are related to these dimensions, but are approximate.

Notes: This capital's *canalis* is concave, and not convex as in the pronaos. Kirchhoff mentions its relatedness to the capital from Neapolis [see Ion-50], both in form and time (1988, p.49, No.31). Theodorescu's (1980) dimensions differ from that of the reference he uses [ie Bakalakis (1963)]. The octagonal plan ordering device is shown in Theodorescu (1980, Table 2).

**Ion-52** Thasian marble Ionic capital of a free-standing anta column of an unidentified temple, Thasos. Thasos Museum, item 213.

Site found: -

Origin: Thasos

Date: Martin's (1972, p.323) date is 510-460 BC. Other dates: Kirchhoff's (1988, p.50) date is the first quarter of the Fifth Cent BC.

Description references: Kirchhoff, 1988, p.49-50, No.33; Martin, 1972, p.315, No.4, Fig.8-11; Theodorescu, 1980, p.163, No.39.

Dimensions: Martin (1972, Fig.9) provides dimensions, all measurable. The capital is well preserved.

Notes: The hexagonal plan ordering device is shown in Theodorescu (1980, Table 2).

- See Ion 53a-b for a very similar capitals.

**Ion-53a** Thasian marble Ionic anta capital of an unidentified temple, Thasos. Thasos Museum, item 214.

Site found: -

Origin: Thasos

Date: Martin's (1972, p.323) date is 510-46 BC. Other dates: Kirchhoff's (1988, p.51) date is the first quarter of the Fifth Cent BC.

Description references: Kirchhoff, 1988, p.50-1, No.34; Martin, 1972, p.317, Fig.12 (Capital No.5); Theodorescu, 1980, p.163, No.40 (Theodorescu refers to Martin's Fig.12, but his dimensions don't tally with Martin's).

Dimensions: Martin (1972, p.317) provides dimensions of measurable sections, but approximate volute measurements were scaled from the author's reconstruction drawing based on his frontal [but not corrected] photograph [Fig.12].

Note: The square plan ordering device is shown in Theodorescu (1980, Table 2).

**Ion-54** Two volute fragments of an hard lime tuff Ionic capital of the Late Archaic 'Megaronbau' (Boehlau *et al.*, 1940, p.161), Larisa (On-the-Hermos). Izmir Museum (Capitals 17 and 18 from Larisa).

Site found: -

Origin: Larisa (On-the-Hermos)

Date: Late Archaic (Mertens, 1969, p.134; Schefold in Boehlau *et al.*, 1940-2, p.161). Other dates: Theodorescu's (1980, Plate 1, No.16) date is approximately 510 BC, and Kirchhoff's (1988, p.51) date is the first quarter of the Fifth Cent BC (Based on apportionment to the Megaronbau and the relief detail).

Description references: Alzinger, 1972-3, p.182, Fig.12; Schefold in Boehlau *et al.*, 1940, p.125, 161, No.17-8, Plates 20-1; Kirchhoff, 1988, p.51-3, No.35; Theodorescu, 1968, p.267, Plate 1, No.8; Theodorescu, 1980, p.162, No.16.

Dimensions: Dimensions are to be seen as approximate and only used for comparative purposes. Polster and volute dimensions [Except I<sup>3</sup>] scaled from the excellent drawings by Johannes in Boehlau *et al.*, 1940, Plate 21. All other dimensions are hypothetical, from a reconstruction attempted from these drawings. The curve described by the polster volute channel beads at the bottom of the capital were used to gain a probable centre point. This centre point resulted in a probable capital length [922] coinciding with that [925] posed by Theodorescu (1968, Table 1, No.8). Theodorescu's proposed bottom diameter of 400 is very realistic if it is seen in relation with the scaled capital width of 382. The most contentious part of the reconstruction was the determination of the bottom echinus plane. Rather than taking other capitals' proportions, the author, from a design perspective, took the line horizontal to the end of the upcurled, outside volute bead as a probable reference line for the echinus bearing plane.

Note: The abacus is thin, in the form of a beading.

**Ion-55** White big-crystalline marble Ionic capital of a free-standing anta column, Halicarnassos. Izmir Museum, item 3553.

Origin: Halicarnassos

Date: 500-480 BC (Martin, 1959; Theodorescu, 1980, Table 1). Kirchhoff (1988, p.53) dates it to the 1st quarter of the Fifth Cent BC on stylistic grounds.

Description references: Alzinger, 1972-3, p.179, Fig.10; Kirchhoff, 1988, p.53-4, No.36; Martin, 1959, p.65, Plates I, II [\*]; Plommer, 1955, p.169, Fig.15, Plate 12a-b; Theodorescu, 1980, p.161, No.14.

Dimensions: All main dimensions are from Martin, R. 1959. *Le Chapiteau Ionique d'Halicarnasse*. *REA*, Vol.61 (1959 [as reported in Alzinger (1972-3, Fig.10)]), augmented by the author with dimensions [K, J] scaled from the drawing, together with a probable but hypothetic vertical volute dimension [G]. The reconstruction drawing by Plommer in Bean & Cook (1955, Fig.15) does not conform to the dimensions by Martin (1959). Dimensions are used for comparative purposes.

Notes: Theodorescu (1980, Table 1, No.14) describes it as the capital of a votive column. The ovoli do not appear on the echinus under the polster. The rectangular-across plan ordering device of the capital is shown in Theodorescu (1980, Table 2).

- Martin (1972, p.323), also quoting Gruben, describes the uniqueness in proportion of this isolated provincial capital.

**Ion-56** Limestone Ionic capital used as games table, Tamassos (Nikosia), Cyprus. Nikosia Museum, item 1935/ V 27.2.

Site found: -

Origin: Tamassos, Cyprus.

Date: The date of the early Fifth Cent BC (According to Kirchhoff's (1988, p.54) proportional system, based on a photograph even he identifies as unsuitable) must be seen as very tentative. Other dates: Buchholz (1974, p.558) dates the capital in the Hellenistic period. The discussion by Wright (1992a, p.441-3) precludes the existence of any Ionic capitals on Cyprus before late Sixth C BC. He does not provide a date for this specific capital.

Description references: Buchholz, 1974, p.558 [Abacus length], Fig.4; Buchholz, 1987, p.196, Note 63; Kirchhoff, 1988, p.54, No.37; Michaelidou-Nicolaou, 1970, p.549 flw, Fig.1 and 2.

Dimensions: All dimensions are approximate, due to the angle of the elevation photo in Michaelidou-Nicolaou (1970, Fig.1-2). The author took the reported abacus length [C<sup>1</sup>] of 355 as guide. The abacus width [B<sup>1</sup>] is scaled from the top elevation in his Fig.2. The capital is not used in quantitative comparison, and is here identified as a candidate for re-documentation.

Notes: The marks on top of the abacus relate to the game played on the capital. The flat-round beading of the volutes become rectangular at the canalis.

- A double abacus is a normal occurrence in contemporaneous Cypriot proto-Aeolic capitals (See Shiloh, 1979, p.36-8, Plate 11.1).

**Ion-57** Two volute fragments of a coarse grained yellowish marble Ionic capital, Kyzikos [Cyzicus], NE Troad (Close to Bursa).

Site found: In terrace wall outside the eastern acropolis wall.

Origin: Kyzikos.

Date: The date of this capital should be revisited after the analysis in this study and related to other capital designs. Existing dates: 'As early as the Ephesos [IV-Polycrates] temple ...with adorned pulvinar' (Hazluck, 1901, p.196); First quarter of the Fifth Cent BC (Kirchhoff bases this on his proportional analysis (1988, p.55), acknowledging the lack of complete reconstructive drawings).

Description references: Alzinger, 1972-3, p.184, Fig.14; Hasluck, 1901-2, p.196 [Dimensions], Plate VI.6; Kirchhoff, 1988, p.55-6, No.38.

Dimensions: Only the extant elements [D, B, H] dimensioned by Hasluck (1901, p.196 [taking note of Kirchhoff's (1988, p.55) assignation of the given echinus dimension to the capital bottom diameter H]. Capital cannot be used in quantitative comparisons.

Notes: Kirchhoff believes that the cyma was connected to the column, which places another light on the cyma measurements of Hazluck (1988, p.55). According to Hasluck (1901, p.196), the polster is smooth, thus not adorned or divided by beads.

- Kirchhoff, without precise dimensions, believes this capital to be from the island-Ionic region, due to the relationship of capital elevation proportions to the Megaronbau capital from Larisa-am-Hermos (See Ion-54). [Also part of new date?]

**Ion-58a-b** Reconstruction from fragments of indigenous marble Ionic capitals of the uncompleted Heraion IV (Polycrates; Bld-1e), Samos. Pergamon- and Samos Museums.

Site found: -

Origin: Samos

Function: Capitals of the Heraion IV (Polycrates), Samos. Functional context dwg

Date: After 500 BC: The building period of the building started by 538 BC (Kyrieleis (1981, p.48, 70) or 540 BC (Kienast (1992, p.186)) just before the North Building I/Phase III and peripteral South Building I, but work was halted during Polycrates's reign [ie somewhere between 535-22 BC]. Importantly, Pedersen (1983, p.112) says that the inner columns with cyma capitals [Cym-9] were up by 522 BC. Although work on the upper parts only fully recommenced around 500 BC (Kienast, 1992, p.186 [Lasting to the Fourth Cent BC (Gruben, 1963, p.89)]), and even whilst there was quite a lot of building activity at Samos after Polycrates, eg the South Building I and North Building II/ Phase IV peristyle by 525-10 BC (Kienast *et al.*, 1989, p.7), there is no proof for the peripteral columns being up. The Syracuse Athenaion of after 500 BC was a huge project modelled after the Heraion IV. Kirchhoff's [capital] date of 490-80 BC (1988, p.96) and Gruben's date of around 480 BC (1961, p.236) for the capitals would refer to the Heraions' final completion stage, and this date is accepted for the capital.

Description references:

Ion-58a: Gruben, 1960, p.42-5, Drawings 42-5, 49 [dimensioned drawings]; Alzinger, 1972-3, Fig.3; Kienast, 1992, p.182-88; Kirchhoff, 1988, p.94-7, No.62, Fig.2.5; Reuther, 1957, p.45-7, No.28. See Kyrieleis (1981, Fig.43)/ Mace (1978, p.221-4, Fig.81-93).

Ion-59b: Gruben, 1960, p.89-91, Dwg.46 [Side+bottom elevations]. The author has made a collage from Gruben's (1960, Drw.42-3) drawings of the reconstructed standard capital and added new portions to show the elevation parallel to the architrave, Dwg.73 [Underside of diagonal volutes]; Kirchhoff, 1988, p.209 flw, No.EK5.

- See Cym-5 and Cym-9 for cyma capitals of the temple interior.

Dimensions: All dimensions of the standard capital from the reconstruction by Gruben (1960, Drw.49), for which he (1960, p.85) did not rely on any proportional system, and in which the main dimensions are deemed to be accurate to 1-2% (1960, p.184). Only after reconstructing the capital was a modular link with the column upper diameter found.

Notes: Gruben (1960) reconstructed seven complete standard capitals (Ion-58a) from the 52 fragments, and 2 corner capitals (Ion-58b), of which fragments of the diagonal volutes exist.

- The capitals were earlier seen as contemporaries of those of Temple 'B', Samos (Kirchhoff's (1988, p.97) No.63, Theodorescu's (1980, p.162) No.32). These and newly found examples [See Ion-59] have recently been shown to rather belong to Monopteros II, seen to be a contemporary and miniature replication of the Heraion IV (Kienast (1992, p.188-9)).

**Ion-59** Indigenous marble Ionic capitals of the Monopteros II (Bld-25; previously wrongly assigned to Temple B (Kienast, 1992, p.188-9)), between the Heraion and altar, Samos. Museum depot, Samos.

Site found: -

Origin: Samos

Date: The construction of the building related to the Heraion IV (Kienast, 1992, p.188-9) which started ca 540 BC. Other datings of the capitals have always rested on the assumption that they belonged to Temple 'B', also deemed to be related to the building period of the Heraion IV (Eg 490-80 BC by Kirchhoff (1988, p.96)). Although now shown to be of the Monopteros II, Kienast (1992, p.189) also links the Monopteros II with the Heraion IV stylistically. As explained elsewhere [See Ion-58] the Heraion IV started at ca 540 BC, stopped somewhere between 535-522 BC, and whilst most work on the pronaos and upper portion resumed ca 500 BC (Kienast, 1992, p.189), this little building may even have been complete before then. In this study, the dates are used as similar, ie ca 480 BC. Description references: Alzinger, 1972-3, p.172, Fig.4 (top capital); Buschor, 1957, 1957, p.20; Ziegenaus, 1957b, p.95 flw., 106 flw., Beil. 108.1-3 [capital I]-9.1-2 [capital II], Table XV; Gruben, 1965, p.327, Fig.249 [-]; Kirchhoff, 1988, p.97-8, No.63.1; Kyrieleis, 1982, p.13-4, Fig.35; Theodorescu, 1980, p.162, No.32; Kienast, 1992, p.188-8, Fig.17a-b.

Dimensions: From Ziegenaus (1957b, Table XV). All dimensions measurable on artefact.

Note: The echinus is undecorated under the bolster, and the back of the capitals are left flat and undecorated.

**Ion-60** Fragment of an Ionic capital, possibly of the Athenaion II (rebuilt after Harpargos), Phocaea. Basmahane Museum, Izmir.

Site found: -

Origin: Old Smyrna

Date: End Sixth Century BC, at the rebuilding of the destroyed temple [Phase I - Bld.16] (Akurgal, 1985, p.117). Other dates: Kirchhoff's (1988, p.106) date is 490-80 BC, being a contemporary of the capitals of the Heraion IV (Polycrates temple [whose upper part is dated from 500 BC onwards in this study]). Boardman (1959, p.209) also believes this capital is from the Athenaion II, built soon after the incursion in the late 540's by Harpargos.

Description references: Akurgal, 1956, p.36 [Turkish text], Plate 3 a-b; Alzinger, 1972-3, p.186, Fig.15; Kirchhoff, 1988, p.106, No.72.

Dimensions: None published. Due to this, but more to the damaged state of the capital, it cannot be used in quantitative comparisons.

**Ion-61** Fragments of a white limestone Ionic capital of a temple in the Athena sanctuary, Syracuse. Syracuse Museum.

Site found: Under the 17th Cent AD Palazzo Vermexio/del Municipio.

Origin: Syracuse

Date: The capitals are placed in the Fifth Cent BC, probably after 480 BC: Pedersen (1983, p.111, 103) sees the capital of the Heraion IV at Samos (dated to ca 500 BC by him), as the model for this Syracusan capital of after 500 BC (In this study the Syracuse capital is also thought to have followed that of the Heraion IV - Phase 1 start-up ca 540 BC to Polycrates, Phase 2 from 500 BC). Pedersen (1983, p.111) dates the Syracuse temple to after 480 BC. Other dates for the temple: Barletta's (1983, p.88-9) dates are <525-500 BC and ".....not later than 520 BC"; Last quarter of the Sixth Cent BC (Gentili, 1967, p.76); Last third or quarter of the Sixth Cent BC (Martin, 1969, p.21); Before 530 BC (Fuchs, 1964, p.690); Not older than early Fifth Cent BC (Kirchhoff, 1988, p.99). It seems that all these dates are linked to earlier notions of only one building phase of the Heraion IV. Barletta's concluding remarks, which bring us to the relatively late date for the completion of Syracuse capitals which also ties in with latest dates for the upper parts of the Heraion IV and the Monopteros II (whose capitals she obviously also thought to be of the Temple B at Samos), and closer to the date by Pedersen. Barletta's (1983, p.88-90) date for the lower portions of the temple is 525 BC or even later [ie after Heraion IV start-up], and for the upper portions and capital, from the Fifth Cent BC [ie after Heraion IV's possible earlier, and definite later capitals]. Kirchhoff (1988, p.99) ventured, based on his proportional analysis, that it is not older than early Fifth Cent BC. This also ties in with the accepted date.

Description references: Kirchhoff, 1988, p.98-9, No.64; Martin, 1969, p.185 flw., Fig.1; Schefold, 1972, p.80, Plate 21, 2-4 [capital fragments, column fragments; Fuchs, 1964, p.684, 690-93, Fig.11 [Announcement, date, column]; Barletta, 1983, p.89-90; Gentili, 1967, p.67-8, Fig.18-21, 24 [Drawings of

reconstruction, dimensions of echinus and volute fragments, other fragments].

Dimensions: The scaled reconstruction drawing by Gentili (1967, Fig.18) remains hypothetical.

Notes: There are three different reconstructions of this capital from the early fragments reported by Gentili (1967, Fig.18-20), namely that of Gentili (1967, Fig.21), Martin (1969, Fig.1) and Pedersen (1983, Fig.24). Gentili (1967, p.77) and Barletta (1983, p.87-8) indicate that there were two capital types (Barletta indicates interior, and exterior [pteron] capitals), without abaci and occasionally with loose echinus, but both referring to the Archaic Samian type with capital bearing offset. This confirms Gentili's reconstruction rather than that reported by Martin (1969, Fig.1), who shows an abacus. Pedersen's (1983, Fig. 24) reconstruction of the polster view, using the fragments shown by Gentili (1967, Fig.24), shows a side view of a Samian type but which postulates a top bolster-palmette addition with side ovoli decoration (Like the Giardino Spagno capital [See capital Excl-9]). Despite the different reconstructions both Martin and Barletta confirm the connection between the capitals they describe and the column shown by Fuchs (1964, p.690 and Fig.11 [As Gentili, 1967, Fig.Fig.12]), dated by him to before 530 BC. Due to the Samian trend shown by the Giardino Spagno capital Martin's reconstruction seems less probable. Also, Martin (1969, Fig.1) gives no references for his reconstructed capital and column model [Although Gentili (1967, Fig.17) and Schefold (1972, Plate 21.4) shows the fluting to be correct]. Later excavation reports (by eg Vosa [See Schefold, 1972, p.80, Note 3]) have produced more fragments of volutes and echini (Schefold, 1972, Plate 21.2), but which do not increase our insight in overall capital form.

- The capital does not lend itself to full interpretation.

**Ion-62** Reconstruction of a Naxian marble Ionic capital of the 'Nike of Kallimachos', a votive column dedicated to the hero Kallimachos, Athens. Acropolis Museum, No's. 3776, 3820, 3830, Theta 312, unnumbered item.

Site found: The Belvedere, acropolis, Athens.

Origin: Athens

Date: 490-89 BC (Raubitschek, 1940). The date is confirmed by means of epigraphic information, and is thus confirmed as an established date by both Jacob-Felsch (1969, p.35, 127) and Raubitschek (1949, p.18) Description references: Alzinger, 1972-3, p.196, Fig.28; Jacob-Felsch, 1969, No. 30.2a, p.127 [date, dimensions]; Raubitschek, 1940, p.53 flw., Fig.1; Raubitschek, 1949, p.18-9, No.13; Theodorescu, 1980, p.163, No.48; Zuchner, 1969, p.329-31, Fig.18-20; Möbbius, 1927, Beil.18.5; Hampe, 1939, p.168-74, Fig.1; Korres in Economakis, 1994, p.174 [scaled reconstruction drawings of capital and column]

Dimensions: The dimensions provided must be seen as approximate and mostly hypothetical, due to the fragmented state of the capital, but they give an idea of the capital's probable size. Dimensions are used for comparative purposes. Dimensions are from the scaled drawings of existing fragments and the reconstruction by Korres in Economakis (1994, p.174 [With one

dimension on the drawing]). However, Korres's drawing and scale are not accurate, and the abacus length and width do not tally with known dimensions by Züchner (1936, Note 1). Also, how Theodorescu came to his dimensions for the proportional relationships is unclear [He does not provide the capital dimensions in any table]. He (1980, Table 1, No.48) indicates that his relationships rely on Raubitschek (1940, Note 7). This work in turn again refers mainly to Möbius (1927 [fragment size]) and Züchner (1936, Note 1 [More fragments and three new dimensions C1=550, B1=ca 400, plinth depression length = 350]). Theodorescu's relationships do not tally with those gained from the Korres drawings which are scaled and which do provide a dimensions for control in scaling. Notes: Erected just after the death of Kallimachos during victory over the Persians. It is (chronologically seen) the last example from the Archaic era up to the Persian wars. Raubitschek (1940, p.55-6) finds in the Nike statue the origins of the severe style, and argues for a sculptor from Paros, based on detail of the sculpture as well as the flower on the cushion of the capital, related to two unpublished Samian capitals. - The relationship column : statue = 1:½ (Jacob-Felsch, 1969, p.127). - Korres's reconstruction shows a squashed inward volute form. The author detects a possible double-square rectangle between the volute ends, used as plan ordering device.

**Ion-63** Partial reconstruction from a volute fragment of an Ionic capital from a votive column, Miletos. Milet Museum, No.2293.

Site found: Miletos

Origin: Miletos

Date: From the dimensions available, still in the Sixth Cent BC (Koenigs, 1980, p.58)

Description references: Koenigs, 1980, p.56-8, Fig.5; Kirchhoff, 1988, No.N6, p.235.

Dimensions: Scaled from Koenig's (1980, Fig.5) partial reconstruction drawing. The length A, width B and depth L are obviously not measurable, and only suggested by Koenigs. These tentative but responsible dimensions are used for gaining proportional relationships for comparative purposes. Koenigs (1980, Note 1-2) reconstructed the proportions of the fragment by referring to the capitals from the Lower Temple at Myus [Capital Ion-15, itself a reconstruction], the [Archaic] Didymeion [capital Ion-28a], a capital fragment resembling these but smaller [Capital Ion-82, undimensioned], as well as one from Yenikoy [Capital Ion-45].

**Ion-64** Ionic capital of a votive column from Sangri, Naxos, of stratified grey-white, coarsely crystalline marble and with pattern aligned parallel with the column axis. Naxos Museum No.2

Site found: Church of Ag. Nikolaus, Sangri.

Origin: Naxos

Date: App 550 BC ['Der über 5 Jahrzehnte jüngere Kioniskos B' (Gruben, 1989, p.169) [ie. 50 years after Col.1, Sangri, Naxos, {Also Capital Ion-1}, which is still in the 7th Cent BC {Orlandos in Kirchhoff, 1988, p.137}]]

Description references: Gruben, 1989, p.165 flw., Fig.3, Plate 19.5. Also drawing by author *in situ*.

Dimensions: Gruben (1989, p.165 flw., Fig.3). All dimensions measurable from capital. Author scaled those dimensions not noted on drawing [D, G, J, K, L]. The drawing does not allow for accurate dimensions of E, F, I<sup>1-4</sup>].

Notes: Capital and column are of one piece. The back of the capital is smooth. The column tapers 14%, and the capital sides follow the taper upwards to the top. The echinus is an undeveloped, flat, sloping piece below the canalis edge bead. The back side of the capital is unworked.

- Gruben (1989, p.166) notes the similarities in proportion with the Parian 'Archilochos' capital [See Ion-17] and dates it similarly.

**Ion-65** Two Ionic votive column capitals (with torus echinus) from Branchidai-Didyma.

Site found: The processional way from the polis to Branchidai-Didyma.

Origin: Unknown. The capital is not included in geographical analyses.

Material: Marble

Present location: Unpublished.

Date: Not older than Sixth Cent BC (Tuchelt, 1991, p.39). Due to this rather vague date it cannot be included in chronological comparisons.

Description references: Tuchelt, 1991, p.39, Fig.58.1-2; Ohnesorg, 1996, p.45, Fig.5 [frontal elevation].

Dimensions: No dimensions have been published. Tuchelt's photograph with measure on the foreground can only give a rough indication.[Ca 1200 long, 360 wide, 506 high]. Due to the lack of dimensions the capital is not suited for quantitative interpretation, but the capital should be properly documented.

Notes: Two capitals were found. Ohnesorg (1996, Note 36) describes them as "fast identisch", and from her analysis probably votive capitals without statues.

- The Delphic capital with reconstructed torus echinus (See capital Ion-66) is seemingly similar but is actually thought to have had a leaf cyma. It is also different in terms of the volute element which shows a double beading and large flat central eye. It is also more elongated in overall form.

**Ion-66** Parian marble Ionic capital with a reconstructed plaster echinus from a votive column from Delphi. Delphi Museum (Not displayed).

Site found: Delphi

Origin: Paros (?)

Date: 525-500 BC (Hahland, 1964, p.194). Date based on comparison of formal qualities with other artefacts. Other dates are: 500-475 BC (Kirchhoff, 1988, p.100); 540-30 BC (Buschor, 1957, p.8); 2nd half of the Sixth Cent BC (De la Coste-Messeliere, 1957, p.310).

Description references: Mace, 1978, No.34, Fig.51; Kirchhoff, 1988, No.65, p.99-100; De la Coste-Messeliere, 1957, p.27, 310, Fig.17. [Photograph of reconstructed capital; Dimensions of volute]; Buschor, 1957, p.8; Hahland, 1964, p.194.

Dimensions: Dimensions are very approximate due to the manner of defining dimensions and the lack of a representation of the side elevation. In order to

provide an idea of the size of the capital the capital volutes were reconstructed by the author and dimensions of the reconstructed front elevation scaled, taking De La Coste-Messeliere's (1957, p.310) given dimensions of the extant front width [590] as departure point. Dimensions are used for comparative purposes only.

Note: The plaster reconstruction of the missing echinus shows a ribbed torus shape, but Kirchhoff (1988, p.100) thinks the real echinus would have been an egg-cyma.

**Ion-67a-b** Two similar marble Ionic capitals from votive columns, one (Ion-67b) from the acropolis, Athens. Ion-67a: National Museum, No.85; Ion-67b: Acropolis Museum, Athens. No.135.

Origin: Athens.

Date: Ion-67a: Not published.

Ion-67b: 520 BC (Theodorescu, 1980, Plate 1; Mace, 1978, p.155); around 530 [Type B] (Jacob-Felsch, 1069, p.34-5, Note 106.5).

Description references Ion 67a: Unpublished. Author's photograph with measuring staff printed with kind permission of Mr. Nikos Kaltsas, Curator of the Sculpture Collection. Dr H Kienast and Mr Kaltsas are thanked for their advice on differentiating between this capital and Ion-67]. The shaft piece [?] has been shorn off. This capital has a triple raised band on the polster centreline. It is proposed that this capital be fully documented.

Description references Ion-67b: Von Luschan, 1912, p.8, Fig.3 [unscaled front elevation]; Borrmann, 1888a, p.15, Table 29.2a-d; Borrmann, 1888b, p.277, Fig.18 (not 25 as mentioned by Mace) [scaled side elevation]; Theodorescu, 1980, p.163, No.45, Plate 2; Trowbridge, 1888, p.26, Fig.6 [Dimensions on drawings without scale]; Mace, 1978, No.3, p.154-5, Fig.106-7 [Drawings by Borrmann and Trowbridge].

Dimensions Ion-67b: There are wide variations in reports on dimensions, and published dimensions cannot be regarded as fully accurate. For comparative purposes dimensions for Ion-67b are taken from Mace (1978, p.154), with consolidation of remaining elements from others where information is deemed to be reliable: Canalis, echinus and shaft piece [36 high, 187 diam] connected to the echinus are from Borrmann (1888b, Fig.18 [Dimensions taken from the scaled drawing in Borrmann (1888a, Table 29.2) are: A-506, B-270, C-357, D-159, E-188, F-315, G-180, H-189, I<sup>1</sup>-106, I<sup>2</sup>-95.5, I<sup>3</sup>-74, J-86, K-72, L [without shaft piece]-158, M-48, Q-320 {Alpha results in 27,9°}); both vertical volute edge-to-eye dimensions were scaled from Von Luschan (1912, Fig.3), taking the volute height of 180 as co-ordinating dimension. The shaft piece dimension is not included in the bearing-to-bearing height in order to make the dimensions useable for comparison.

- It is proposed that capital Ion-67b be remeasured, and the probability of the use of the Pheidonic foot standard of 328 be tested (Motivation for this from Drerup (1937, p.234 [See Ion-30])).

- The rectangle used as plan ordering device is indicated in Theodorescu (1980, Table 2). The abacus has a painted meander.

Note: The similarity in capital form is remarkable.

**Ion-68** Marble Ionic capital (due to its size, most probably of a votive column) from Paros. Paros Museum (Previously in Museum, now in storage. No visible item No.)

Site found: Unidentified

Origin: Paros.

Date: No published dating could be found. The piece is believed to be Archaic: Because the column and capital are made of one piece, as those from Sangri, Naxos, this may indicate old age, ca <550 BC. The capital is not used in chronological analyses. This capital's date is evaluated after the main analysis in the study.

Description references: Descriptions by the author of this (as far as is known) previously unpublished capital. This description with kind permission of Dr D.U. Skillardi, Director of the Paros excavations of the Athens Archaeological Institute, through the instances of the BSA.

Dimensions: A few main dimensions were taken from the capital and augmented from an enlarged photograph with measuring staff. Due to the angle of the photograph the scaled dimensions are not reliable. Those elements and mouldings that were still visible on the capital were the main guides in the reconstruction, together with the use of a probable volute spiral ordering system [Circle segments]. Dimensions are used for comparative purposes only.

The capital should be re-documented in future.

Notes: The capital has a canalis bottom beading with an upside down cord-shape. The volute turns in very sharply after the first half turn, and seems to be very small. Although the top of the capital is damaged, it is unlikely to have had an abacus. The cyma decoration cannot be discerned. There are convex, oblong losenges as a necking under the cyma, on the column shaft [length unknown]. The volute angle spandrel palmette has no profile.

**Ion-69** Marble Ionic capital (Due to its size and markings, most probably of a votive column [but without sculpture]) from Paros. Paros Museum, No.929 (München TU No M72).

Site found: Modern wall in the Antique city.

Origin: Paros [?]

Date: Contemporary with Ion-17, namely ca 550 BC [>] (Ohnesorg, 1993b, p.115). Dr D.U. Skillardi confirmed its Archaic heritage [Interview in November, 1997]. Museum description is 'proto-Ionic, Sixth Cent BC'.

Description references: Ohnesorg, 1993b, p.115 [No photograph], Notes 27-8 [Gives a few dimensions and a commentary {The Greek publication she mentions in which more drawings are provided, is unfortunately not named, and is thus unobtainable}]. The author's further qualitative description with kind permission of Dr D.U. Skillardi, Director of the Paros excavations of the Athens Archaeological Institute, with whom the author made contact through the instances of the BSA.

Dimensions: Apart from Ohnesorg's two given dimensions [A>680 {Column top diam=ca 244}] all dimensions used must unfortunately remain



approximate (Scaled from a photograph by the author) and viewed as guide. The capital length was taken as framework dimension to calculate other dimensions. Markings on the capital that were still visible were the main guides in the reconstruction which includes a probable volute spiral ordering system. The capital has a socket the size of its current modern stander, ca 182 diam. Although not correct, as an indication of the capital bearing [H] diameter, the column [top] diameter of ca 244 can be taken as a guide. The capital should be re-documented in future.

Notes: The groove under the echinus leaves continues right round, and the leaves have no borders at their bottom. The volute spandrel palmette has no profile. The bottom bead of the canalis is horizontal with the top bearing plane of the capital. The capital, especially the canalis, reminds of the example from east Ionian Nasos as well as the Archaic Athenian examples.

**Ion-72** *In situ* yellow limestone Ionic capital from rock cut tomb at Kyrene (Cyrenaica).

Site found: Tomb N8, Cyrenaica (Kyrene)

Origin: Cyrenaica

Date: 525-500, or even later (Boardman, 1959, p.208; Mace, 1978, p.169). Other dates: White (1971) dates the capital between 570-500 BC.

Description references: White, 1971, p.55 flw., Fig.7; Boardman, 1959, p.207-8; Mace, 1978, p.168-9, Fig.134-4.

Dimensions: No dimensions have been published. Capital cannot be used in quantitative comparisons.

Notes: The bottom cyma of the two superimposed ones partially continues under the polster.

- No quantitative interpretation will be attempted due to the lack of dimensions. Because the capitals are from a rock-cut tomb, the qualitative and quantitative aspects must not be seen from a structural, tectonic point of view.

**Ion-73** Fragments of a Poros anta capital of the South Building I (*Sudbau*; Bld-24) of the Hera sanctuary, Samos. Pergamon Museum, Berlin.

Site found: Unpublished.

Origin: Hera sanctuary, Samos

Date: The temple is a contemporary to the North Building of 545-35 BC (Furtwängler et al (1989, p.61)). Other dates: Building completed between the First Dipteral Heraion and Phase IV (Kienast (1992, p.191)) [which supports the above date]. Kyrieleis (1981, p.92) reckons start ca 550 BC and completion late Sixth Cent BC. Buschor (1930, p.60) placed it together with the "Rhoikos" [ie First Dipteros] Temple period, as did Ziegenaus (1957a, p.69), due to occurrence of column rejects of the dipteros in the foundation of South Building I. Kienast (1992, Note 84) for more datings.

Description references: Buschor, 1957, p.17 flw, Fig.11, Plate XIV.2.

Dimensions: None. Capital can not be used in quantitative comparisons. Due to the size of the fragment the capital is not included in qualitative comparisons.

Note: Kyrieleis (1981 p. 92) indicates no [standard] Ionic capitals are extant, as does Kienast (1992, p.189).

**Ion-74a-b** Reconstructions of the two island marble Ionic capitals tentatively linked with the East fountain house or *Enneakrounos* (Bld-27) in the Athenian agora. [Agora Museum].

Site found: A616: Odeion, Agora, S of bastion Athena Nike, Acropolis.

Origin: East Ionian artist (?)

Date: Late Archaic, based on the capitals, together with the bases, and if linked with the Enneakrounos, in the third quarter of the Sixth Cent BC [During the reign of Peisistratos] (Merrit, 1980, p.88, 92). The architectural use of island marble dates it to before the Persian War (Merrit, 1982, p.83).

Description references: Capital Ion-74a-b: Merrit, 1982, p.82-92, Fig.1-2, Plate 12.a-f [capitals].

Capital 74b: Möbius, 1927, p.171, Beil.XIX.2-3; Theodorescu, 1980, no.56.

Dimensions: Merrit, 1982, p.82-92, Fig.1-2, Dimensions augmented by the author [scaled from her drawings], except for the echinus height which is from Möbius (1927, p.171). Volute height and abacus length/width dimensions are hypothetical.

Notes: For the discussion of the link between three bases and capitals, see Merrit (1980).

- Merrit (1982) believes this is not a local work, but executed by east Ionians for Athens.

- The author has tested the use of the Samian foot measure of 349 as module for the capital and the building, and there is reason to think it may have been used. The Pheidonian foot of 328 however also finds application in the capital and the building.

- Detail (eye, echinus, palmette) differs on both sides. The polster baldus consists of three flutes with double separating beads. The abacus has been reconstructed with a rounded shape. Capital A616 has been extensively altered later as a stander.

**Ion-75** Fragments of an Ionic capital of soft poros (Known as the "large Archaic poros capital") deemed to be part of the Kekrops column found on the acropolis, Athens. One portion built into the acropolis wall, and location of another portion unpublished.

Site found: North wall of the acropolis, Athens.

Origin: -

Date: Before recent publication of new evidence surrounding the capital the author placed this capital at probably 530 BC at the earliest for the following reasons: Raubitschek (1938, p.164) groups this capital with the block like capital Iver-8, and calls it 'altertümlich'. This form of capital has always been thought to have been of the oldest types of Ionic capital, but Iver-8 has been dated to 550 BC (See Raubitschek, 1938, p.164; Betancourt, 1977, p.102). Later Raubitschek (1949, p.5) even deemed it possible to be older than 550 BC, with the proviso that it be proved that the capital matches a column [to which it could be linked] which is dated on epigraphical evidence. Raubitschek (1949, p.5, 6) elsewhere also datewise links the capital to the Naxian and Aeginetan sphinx columns, which would make this capital the earliest Athenian Ionic capital. However, Boardman disputes this early dating in terms of the concave *canalis*, large volute eye [with bronze insert] and simple cushion binding. [However this also occurs at

Paros, capital No.Iver-2, dated 550 BC]. He (1959, p.206, Note 6) mentions that capitals with linked volutes don't appear in Athens until 530 BC. The author's chronology in Chapter 2 confirms this view, and the date of 530 BC is thus seen as the earliest possible. However, from the latest work by Korrés (1997, p.95) this capital is linked to the Late-Archaic Kekrops monument, and therefore belongs to the end of the 6th Cent BC.

Description references: Raubitschek, 1949, p.5-6, Item No.1 [column]; Raubitschek, 1938, p.148, Note 4, p.160, Note 3, p.164, Note 2; Weikert, 1929, p.99 [2 450 total column height]; Boardman, 1959, p.206, Note 6 [capital]; Wiegand, 1904a, p.173, Fig.172a [portion still in wall, from Acropolis Institute photograph 75], 172b [volute], 172c.1-2 [Dimensioned drawings of Fig.172a]; Korrés (1997, p.95 flw).

Dimensions: Wiegand's (1904a, Fig.172c1-2) drawing shows a possible width [B] of 1005. Capital cannot be used in quantitative comparisons.

Notes: The piece that is built into the wall is not dimensioned but shows more detail than the loose fragment. The rectangular beading on the volute and canalis is similar to that of the one façade of Ion-74. Raubitschek (1949, p.148, Note 4) reports that the capital had a separate abacus, fixed to the capital top with a socket.

- Wiegand (1904a) thought the piece might be either a votive column capital or part of an altar due to its size.  
- The given capital width is ca 12¼ qt ft of 82, and the top to eye dimension ca 7¼ qt ft (See Drerup, 1937, p.233) for foot standard).

**Ion-76** Pentelic marble Ionic capital of a votive column by Gorgias and dedicated by Ameinias, found on the acropolis, Athens. Athens Nat Arch Museum No.3850.

Site found: Acropolis, Athens.

Origin: Athens

Date: 530-20 BC (Raubitschek, 1943, p.19). Due to dating of the Kore [and epigraphic evidence of the column linked with it], this is an **established date** for Archaic Athenian capitals. This coincides with Boardman's (1959, p.206, Note 6) statement that capitals with linked volutes do not appear in Athens until 530 BC. Elsewhere Raubitschek (1949, p.10) mentions the last quarter of the Sixth Cent BC. Both Raubitschek's dates revolve around the style of the Kore No.611. This Kore, together with capital No.3850, is linked to column, No.5 (1943, p.19; 1949, p.10)). Jacob-Felsch dates the Kore to 530-20 BC, and the column (1969, p.34-5, Note 106 [Type B]) to ca 530 BC.

Description references: Raubitschek, 1943, p.18 flw; Table 7.5-7 [reconstruction drw]; 1949, p.9-10, No.5 [no dimensions]; Jacob Felsch, 1969, p.117, No.14 [no dimensions]; Boardman, 1959, p.206, Note 6 [capital]. Dimensions: None published. Capital cannot be used in quantitative comparisons. The proper documentation of this capital with an established date is very important. Notes: The top diam of the column No.5 is ca 190 (Jacob Felsch, 1969, p.117). The volute spandrel palmette was probably painted on. The domed

echinus on Raubitschek's reconstruction is conjectural.  
- Although no dimensions have been published, Drerup's (1937, p.234) comment suggests that the Pheidonian foot standard of 328 should be applicable to the capital design.

**Ion-77** Fragment of a Mylasan marble Ionic capital of an in antis temple or treasury at Labraynda [Presently Labranda] NE of Mylasa halfway between present Bodrum and Milet. Capital presently still on the temple terrace.

Site found: The temple terrace at Labraynda.

Origin: The stone of the building is Labrayndan gneiss and Mylasan marble, but the execution of the cyma is close to Parian (Burgtempel A, Paros), Samian (Heraion) and Siphnian (Treasury, Delphi) work, and the capital resembles that at Ephesos (Ion-44) tentatively dated by Thieme to ca 500 BC [But which is linked to Ion-59 to 500> BC]. No definite statement as to the Origin: of the design and workmanship is provided by Thieme. The fact that Mylasa is the Carian capital and the shrine of Zeus Labrayndos a Carian shrine points to the fact that the work was done from outside.

Date: Ca 500 BC (Thieme, 1993, p.49-50). The capital's date is also connected to the date of other architectural elements, together in the range 520-500 BC.

Description references: Thieme, 1993, p.47-51, Fig.1-2 [drawing and reconstruction], Plate IX [photograph].

Dimensions: Thieme, 1993, p.47-51, Fig.1-2.

Note: The piece is severely damaged and detail of the [smooth] polsters and capital top are not known. Thieme has provided a reconstruction of the volutes which may be used as guide to the capitals façade size and proportion.

**Ion-78a-b-c** Three completed limestone Ionic capitals of an uncompleted temple at Miletos (Mengerevtepe, Milet)

Site found: Mengerevtepe, modern Milet.

Origin: Miletos

Present location: Unpublished

Date: Ca 500 BC [Before 494 BC] (Weber, 1996, p.86); Other dates: Late Archaic (Weber, 1995, p.228). Description references: Weber, 1995, p. 228-38, Fig.29-32 [column drums], 33-6 [Capital a {No.13031} and b {No.13132}], 38 [Hypothetical reconstruction of column and capital on stylobate]; Weber, 1996, p.85, Fig.4, 6 [Capital a {No. 13031}], p.86, Fig.5 [Capital c {No.13032}].

Dimensions: Dimensions are retrievable from the artefact, and shown on Weber's (1995, Fig.33, 38) drawing, except for the horizontal volute [D] and inter-volute dimensions [E] which were scaled from Fig.33 by the author (Intra-volute dimensions [I1-4, F] are absent due to the unworked state of the volutes).

Notes: Weber mentions that the columns were found on the stylobate, without bases. Previously Weber stated that the capitals were uncompleted before the temple was damaged (1995, p.238), but that markings for future echinus leaves appear on the echinus top. Later Weber (1996, p.86), from his further observations, stated that the stonework was completed,

and that detail on volutes and echinus would have been paintwork, although never applied. The capitals are without abaci, and what looks like an abacus are most probably the profiles of spandrel palmettes on the volute offset [An offset as in the examples of the Samian Heraion IV [See Ion-58]]. Capital a's bottom bearing [4300] overhangs the column top [4160]. Because Weber now sees the capitals as complete, the possibility does not exist anymore that this thickness would have been taken away with the modelling of the echinus cyma. The detail of Capital c shows a slightly different echinus shape which could have had a smaller bottom diameter, or the capitals may have been of different sizes. Due to the lack of dimensions there is no certainty regarding the fit.

**Ion-80** Bright yellow limestone Ionic capital from a votive column with reclining lion, dedicated to Mikos (One of the few examples of those used at a grave). Ankara Museum.

Site found: From an unknown site

Origin: Miletos/Didyma

Date: Koenigs's & Philipp's (1978/80, p.164) date of ca 500 BC is accepted. There has been a lot of controversy around this capital, as may be seen from the other dates: Akurgal's (1961, Fig.249) date is 470-60 BC. Kirchhoff (1988, p.101) mentions that his date in the early Fifth Century BC is based on dating of stylistic influences of both capital and lion, by others (Namely Borchardt and also Gabelmann (See references in Kirchhoff, Note 321)). However, Jacob-Felsch's (1971, p.132, no.36) date for the lion is 470-60 BC, and she also refers to Gabelmann. Alzinger (1972-3, p.181) sees this capital as contemporary to the "frühklassische Kapitell vom Polykratestempel in Samos". Koenigs's & Philipp's (1978/80, p.164) date for the lion is 530-500 BC, brought down to 500 BC by stylistic aspects of the capital.

Description references: Kirchhoff, 1988, p.101, no.67; Alzinger 1972-3, p.181, Fig.11; Akurgal, 1961, p.280, Fig.249. Koenigs *et al*, 1978/80, p.157-73, Fig.1-2 [First published, dimensioned drawings].

Dimensions: Koenigs *et al*, 1978/80, Fig.1-2. Only the abacus length was scaled.

Notes: Koenigs *et al* (1978/80, p.157) report that the volutes of the capital seem to be constructed free-hand. The echinus is not flat above, but battered towards the canalis. The volute faces are inclined to the top (Also see Ion-64), and taper towards their outside ends.

- The apportioning of the place of origin of the capital is derived from the stylistic aspects of the lion statue (See Koenigs *et al*, 1978/80, p.163) and capital (p.161).

- According to Koenigs *et al* (1978/80, p.160) there is no dactyl module used in the form, although there is proportioning A:B = ca 5:2, A:G = ca 1:3, D:E:D = 4:5:4, G:L = 3:2.[Do\*]

**Ion-81** Fragment of a marble Ionic capital of a votive column, Acropolis, Athens. Acropolis Museum.

Site found: Acropolis

Origin: Athens

Date: Ca 520 BC (Mace, 1978, p.158).

Description references: Mace, 1978, No5, p.157-8,

Fig.108; Borrmann, 1887, *Ant Denk*, Band 1.2, p.8, Plate 18.2 [scaled drawing of segment]; Wurz, 1925, p.103, Note 13, Fig.265.

Dimensions: Only dimensions published reported by Mace (1978): Fragment height 120; Fragment width app 180; Capital cannot be used in quantitative comparisons.

Note: The capital face is smooth and has painted detail. The middle and bottom of the capital is lost.

**Ion-82** Fragment of a marble Ionic capital of a votive column, Didyma. Didyma Museum depot. Item F723 Site found: Didyma

Origin: Didyma

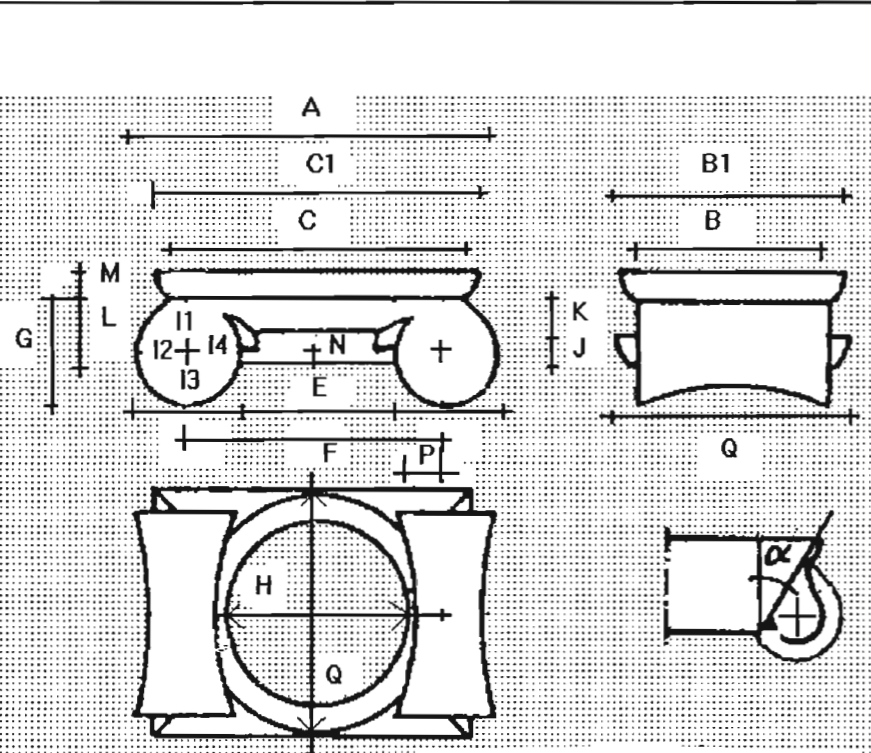
Date: Just before the capitals of the Didymeion (Gruben, 1963, p.142). The capitals of the Didymeion are dated 540-30 BC, from the latest firm dating of the frieze at ca 530 BC (Schattner, 1996, p.41), rather than 540-20 BC by Gruben (1963, p.176). Gruben (1963, p.164) also gives 530 BC as an approximate date for the Didymeion capitals. Other dates: Kirchhoff's (1988, p.86) date for this capital is also 540-30 BC.

Description references: Gruben, 1963, p.140, No.30, Fig.32, 33; Kirchhoff, 1988, p.86-7, No.52; Knackfuss in Wiegand, 1941a, *Did. I*, p.148, F723 Tab.213.

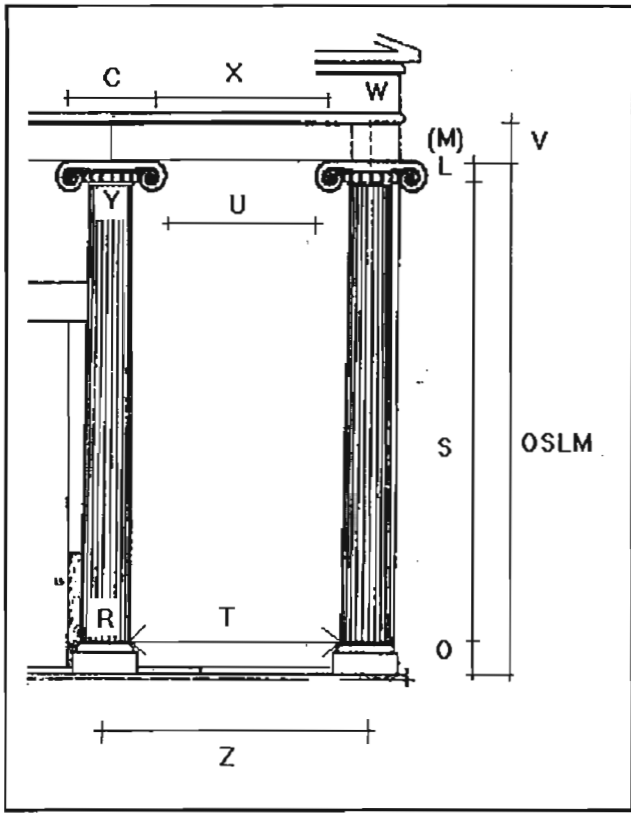
Dimensions: None published. The fragment cannot be used in quantitative comparisons.

Notes: This piece closely resembles those of the Apollonion, Didyma, but is about 60% of the size. Gruben (1963, p.142) describes it as a characteristic Milesian capital. Koenigs (1980, p.57, Note 1) identifies it as from a votive column, and relates his capital Fig.5 (Ion-63) to this one and those of the Didymeion (Ion-28a) and Myus (Ion-15), Yenikoy (Ion-45) for proportional reconstruction.





Augmentation of the diagram by Theodorescu (1980)



Original elevation by Gruben (1989)

Table 2.2

Archaic Ionic standard capitals up to 490 BC		No	ION-1	ION-4	ION-5	ION-6	ION-7	ION-9	ION-10	ION-11	ION-12	ION-13	ION-14	ION-15	ION-16	ION-17	ION-18	ION-19	ION-20	ION-21	ION-22	ION-23	ION-24	ION-25	ION-26	ION-27	ION-28	ION-29	ION-30	ION-31	ION-32	ION-34	ION-35	ION-36	ION-37	ION-38	ION-39	ION-40													
Q U A N T I T A T I V E D E S C R I P T I O N O F E L E M E N T S	A	550	880	858	1857	1785	950	601	948	645	1590	1900	3080	925	1106	925	1106	925	1106	925	1106	925	1106	925	1106	925	1106	925	1106	925	1106	925	1106	925	1106	925	1106	925	1106	925											
	B	243	370	432	703	605	324	320	660	250	480	525	1116	380	410	380	410	380	410	380	410	380	410	380	410	380	410	380	410	380	410	380	410	380	410	380	410	380	410	380	410	380	410								
	C	555	730	572	1551	1275	755	453	620	505	1170	1400	1980	700	828	700	828	700	828	700	828	700	828	700	828	700	828	700	828	700	828	700	828	700	828	700	828	700	828	700	828	700	828	700	828						
	D	166	210	217	462	430	266	185	290	188	480	580	915	277	362	277	362	277	362	277	362	277	362	277	362	277	362	277	362	277	362	277	362	277	362	277	362	277	362	277	362	277	362	277	362	277	362				
	E	240	460	425	937	925	399	260	368	270	630	740	1250	368	382	368	382	368	382	368	382	368	382	368	382	368	382	368	382	368	382	368	382	368	382	368	382	368	382	368	382	368	382	368	382	368	382				
	F	378	616	808	1328	1265	609	430	630	385	1020	1220	2050	620	650	620	650	620	650	620	650	620	650	620	650	620	650	620	650	620	650	620	650	620	650	620	650	620	650	620	650	620	650	620	650	620	650				
	G	196	243	254	550	500	308	255	365	225	560	675	1047	352	484	352	484	352	484	352	484	352	484	352	484	352	484	352	484	352	484	352	484	352	484	352	484	352	484	352	484	352	484	352	484	352	484				
	H	250	420	462	703	684	317	290	430	350	470	780	1430	365	396	365	396	365	396	365	396	365	396	365	396	365	396	365	396	365	396	365	396	365	396	365	396	365	396	365	396	365	396	365	396	365	396				
	I-1	114	143	143	317	290	169	169	230	115	310	310	600	193	288	193	288	193	288	193	288	193	288	193	288	193	288	193	288	193	288	193	288	193	288	193	288	193	288	193	288	193	288	193	288	193	288	193	288		
	I-2	97	132	125	259	260	161	161	215	115	285	285	560	175	228	175	228	175	228	175	228	175	228	175	228	175	228	175	228	175	228	175	228	175	228	175	228	175	228	175	228	175	228	175	228	175	228	175	228		
	I-3	83	100	111	233	210	140	140	195	115	250	250	500	140	188	140	188	140	188	140	188	140	188	140	188	140	188	140	188	140	188	140	188	140	188	140	188	140	188	140	188	140	188	140	188	140	188	140	188		
	I-4	70	78	92	203	170	105	105	140	115	200	200	400	105	140	105	140	105	140	105	140	105	140	105	140	105	140	105	140	105	140	105	140	105	140	105	140	105	140	105	140	105	140	105	140	105	140	105	140		
	J	115	112	130	264	185	94	86	130	80	225	230	460	115	140	115	140	115	140	115	140	115	140	115	140	115	140	115	140	115	140	115	140	115	140	115	140	115	140	115	140	115	140	115	140	115	140	115	140		
	K	75	88	85	115	185	106	97	175	95	255	323	646	106	130	106	130	106	130	106	130	106	130	106	130	106	130	106	130	106	130	106	130	106	130	106	130	106	130	106	130	106	130	106	130	106	130	106	130	106	130
	L	190	200	215	395	370	200	193	305	175	480	553	1106	200	250	200	250	200	250	200	250	200	250	200	250	200	250	200	250	200	250	200	250	200	250	200	250	200	250	200	250	200	250	200	250	200	250	200	250	200	
	M	n appl	n appl	n appl	n appl	n appl	n appl	n appl	n appl	n appl	n appl	n appl	n appl	n appl	n appl	n appl	n appl	n appl	n appl	n appl	n appl	n appl	n appl	n appl	n appl	n appl	n appl	n appl	n appl	n appl	n appl	n appl	n appl	n appl	n appl	n appl	n appl	n appl	n appl	n appl	n appl	n appl	n appl	n appl	n appl	n appl	n appl				
	Q	301	540	550	1060	1040	513	513	750	880	1652	2000	3300	550	600	550	600	550	600	550	600	550	600	550	600	550	600	550	600	550	600	550	600	550	600	550	600	550	600	550	600	550	600	550	600	550	600	550	600		
	alpha	41.5	38.0	35.0	45.0	42.5	22.0	22.0	32.0	29.3	19.5	19.5	35.0	32.0	29.3	19.5	19.5	35.0	32.0	29.3	19.5	19.5	35.0	32.0	29.3	19.5	19.5	35.0	32.0	29.3	19.5	19.5	35.0	32.0	29.3	19.5	19.5	35.0	32.0	29.3	19.5	19.5	35.0	32.0	29.3	19.5	19.5	35.0	32.0	29.3	

Archaic Ionic standard capitals up to 490 BC		No	ION-41	ION-42	ION-43	ION-44	ION-45	ION-46	ION-48	ION-50	ION-51	ION-52	ION-53	ION-54	ION-55	ION-56	ION-57	ION-58	ION-59	ION-60	ION-61	ION-62	ION-63	ION-64	ION-65	ION-66	ION-67	ION-68	ION-69	ION-70	ION-72	ION-73	ION-74	ION-75	ION-76	ION-77	ION-78	ION-80	ION-81	ION-82							
Q U A N T I T A T I V E D E S C R I P T I O N O F E L E M E N T S	A	392	1800	940	X	1053	1220	1340	5495	1700	740	596	922	950	372	X	2060	751	X	2780	735	814	469	X	X	603	498	524	680	X	X	900	X	X	496	X	815	X	X	980	616	X	X				
	B	235	900	445	430	484	551	610	615	800	365	280	382	465	176	X	1504	368	X	X	360	356	198	X	X	490	260	255	280	X	X	456	X	X	200	X	420	252	X	X	420	252	X	X			
	C	480	1560	645	X	704	863	1010	1080	1070	480	360	596	755	305	X	2310	650	X	X	1845	520	514	370	X	X	432	359	400	534.6	X	X	500	X	X	500	X	950	445	X	X	445	X	X	445	X	
	D	480	0	662	X	920	none	none	596	none	none	none	596	none	355	X	none	none	X	X	537	537	514	none	X	X	none	359	none	none	534	X	X	534	X	X	534	X	950	445	X	X	445	X	X	445	X
	E	197	580	260	X	332	412	510	562	590	282	228	306	375	148	X	385	955	238	X	680	275	250	475	X	X	190	155	148	208.81	X	X	264	X	X	264	X	none	none	none	none	none	none	none	none	none	
	F	368	1130	638	648	681	720	764	851	1070	424	333	510	200	76	X	1150	313	X	X	920	185	314	124	X	X	220	188	229	262.38	X	X	263	X	X	263	X	263	310	191	X	X	191	X	X	191	X
	G	227	660	311	X	368	510	600	675	700	339	299	352	410	159	X	1104	280	X	X	825	305	320	197	X	X	232	180	203	270.03	X	X	305	X	X	290	X	290	355	204	X	X	204	X	X	204	X
	H	X	850	410	495	450	550	500	700	340	236	400	400	400	X	X	360	1600	398	X	X	345	X	125	X	X	X	190	208	244	X	X	354	X	X	430	430	270	X	X	270	X	X	270	X		
	I-1	130	400	187	X	204	305	344	382	430	195	186	209	225	86	X	684	159	X	X	X	X	196	X	X	X	109	94	86	X	X	160	X	X	160	X	160	X	1								

**2.3.3.3 Ionic Aeolicising capitals** [Note widely differing dates] Description of the quantitative and qualitative aspects of these capitals are not provided in Table form. Photographs of Aeolicising capitals in Appendix 1. There is no Iver-1

**Iver-2** Marble Aeolicising capital of a *perirrhantèrion* with upside down capital, Paros. Paros Museum, item 737 (München TU No.78).

Site found: The Early-Christian Tris Ekklesies Basilica, Paros, also used as water basin [Holes are modern].

Origin: Paros

Date: Maybe around 550 BC (Ohnesorg, 1993b, p.117). Other dates: "Kaum später als im 6.Jhd" (Kirchhoff, 1988, p.139, 217).

Description references: Betancourt, 1977, p.140, No.32; Daux, 1961, p.843, Fig.14; Daux, 1962, p.860, Fig.6, 7; Gruben, 1972, p.378, Fig.37; Kirchhoff, 1988, p.139, 127, No.E and A5; [-] Orlandos, A. *Prakt*, 1961a, p.189, Fig.8, Plate 147γ; Orlandos, 1961b, p.193, Fig.199; Ohnesorg, 1993b, PlateXXII.3-4.

Notes: Kirchhoff's description of the artefact being a votive column cannot be sustained. The portion of the basin edge has been found (See Orlandos (1961a, Fig.8). This type of water basin has parallels in Paros (eg Ohnesorg, 1993b, Plate XXII.5). Capitals Cont-13 and -14 are related to this type). The back side of the capital has been left uncompleted.

- The volutes are constructed from quarter circles according to Ohnesorg (1993b, p.117). The back side of the capital face is unworked.

**Iver-3** Marble Aeolicising capital (without echinus) of a votive column, Delos. Delos Museum.

Site found: -

Origin: -

Date: Early Sixth Cent BC (Kirchhoff, 1988, p.220). Other dates: Betancourt (1977) dates it to the second half of the Sixth Cent BC.[!]

Description references: Betancourt, 1977, p.92, 140, No.31, Fig.45; Kirchhoff, 1988, p.217, No.A6; Martin, 1973, p.373, No.1, Fig.1; Martin, 1958, Plate 27.5 [Three-dimensional drawing].

**Iver-4** Fragment of a marble Aeolicising capital of a votive column, Delos. Delos Museum.

Site found: -

Origin: -

Date: Early Sixth Cent BC (According to Kirchhoff's proportional analysis (1988, p.14)).

Description references: Kirchhoff, 1988, p.14-5, No.2; Martin, 1973, p.374, No.2, Fig.3; Vallois, 1966b, p.170, No.6.

Note: The inscription on the capital may be original, or of a later re-use of it (Kirchhoff, 1988, p.15). Revisiting this information is essential.

**Iver-5** Parian marble Aeolicising capital of a votive column (Ohnesorg; Betancourt), or votive- or architectural capital (Kirchhoff), Paros. Paros Museum Inv 793 (München TU No. M1)

Site found: The Aesclepeion at Paros.

Origin: Paros

Date: Due to stylistic detail ca 540-30 BC (Ohnesorg, 1993b, p.116). Other dates: Second quarter of the Sixth Cent BC (Kirchhoff, 1988, p.215). Betancourt's (1977) dating is the last third of the Sixth Cent BC.

Description references: Betancourt, 1977, p.93, 140, Footnote 136, No.33; Gruben, 1972, p.376 flw., Fig.35; Kirchhoff, 1988, p.214-5, No.A1; Ohnesorg, 1993b, p.115-6, Plate XXI.7.

Notes: Ohnesorg (1993b, p.116) notes that the capital may have been unadorned by sculpture. She indicates the similarity with the Oropos capital (Iver-11), and that the capital base dimension derives from the volute eye diameter of 56 mm.

**Iver-6** Volute of an Aeolicising capital from a votive column from the Thesmophorion, Paros. Paros Museum item 1006-7 [Not displayed] (München TU No.M132a-b).

Site found: Ag Georgios, Paros

Origin: Paros

Material: Not published.

Date: Around 525 BC [After Iver-5] (Ohnesorg, 1993b, p.117). Other dates: Gruben dates the capital in the third quarter of the Sixth Cent BC (1982c, p.687); Still before the middle of the Sixth Cent BC (Kirchhoff, 1988, p.235).

Description references: Gruben, 1982c, p.687, Fig.37; Kirchhoff, 1988, p.234-5, No.N5; Ohnesorg, 1993b, Note 39, Plate XXII.1-2.

Notes: The capital is too small to be architectural (See Gruben (1982c)).

- Ohnesorg (1993b, Note 39) provides the main reconstructed dimensions: Length 1 125, depth 405, height ca 380. [Do\*]

**Iver-7** Parian marble Aeolicising capital of a votive column, Athens. Acropolis Museum, item 3794.

Site found: -

Date: 550-500 BC (Betancourt, 1977, p.100); Other dates: 550-30 BC [Type A] (Jacob-Felsch, 1969, p.34, Note 105.2).

Description references: Betancourt, 1977, p.141, No.36 (See further references), Plate 53-5, Fig.48.

**Iver-8** Blue-grey Humettic marble Aeolicising capital of a votive column, Acropolis, Athens. Acropolis museum, item 10261.

Site found: -

Origin: -

Date: 550-500 BC (Betancourt, 1977, p.102); Jacob-Felsch, 1969, p.304, Note.34; Raubitschek's (1938) date is 550 BC

Description references: Betancourt, 1977, p.141, No.37 (See further references), Fig.49; Raubitschek, 1938, p.164, Fig.20-1; Raubitschek, 1943, No.f.t; Jacob-Felsch, 1969, p.34 Note 105, p.122, Cat.II.

**Iver-9** Parian marble Aeolicising capital of a small building or sanctuary (Betancourt, 1977) on the Acropolis, Athens. Acropolis Museum, Item 9980.

Site found: -

Origin:-

Date: 550-25 BC (Betancourt, 1977, p.104).  
Description references: Betancourt, 1977, p.141 (See further references), No.38, Plate 56-9; Borrmann, 1887, p.8, Plate 18.3 [drawing with scale provided]; Borrmann, 1888b, p.276, Fig.16; Trowbridge, 1886, p.24, Fig.2; Lehmann-Haupt, 1913, p.471, Fig.4; Von Luschan, 1912, p.16, Fig.10; Braun-Vogelstein, 1920, Table 1.2 [3 dimensional drawing].

**Iver-10** Marble Aeolicising capital of a votive column (from the Hypostyle Stoa), Delos. Delos Museum Item 202 (?).

Site found: The Hypostyle Stoa, Delos

Origin: Unpublished. The capital will not be placed in geographical analyses.

Date: Uncertain - According to Kirchhoff (1988, p.215) the capital originated in the mid Sixth Century BC because of similarities with the Aeginetan [Aphaia] sphinx column which he (1988, p.20) erroneously dated to 550-40 BC. Ohnesorg dates the capital to 550 BC on volute detail alone. The capital is not included in chronological analyses.

Description references: Kirchhoff, 1988, p.215, No.A2; Vallois, 1966b, p.165, No.2 [Dimensions]; Ohnesorg, 1996, Fig.4a,b.

Note: The capital has a smooth round torus echinus with scales engraved. The top of the capital is missing. There is indication of metal applique, possibly on the volutes. The bolster is deeply contracted.

**Iver-11** Cycladic (Parian?) marble Aeolicising capital of a votive column, Oropus (Oropos). Athens National Museum, item 4797.

Site found: St Eleussa, Sykamion-Oropos.

Origin: -

Date: Just after the middle of the Sixth Cent BC (Kirchhoff, 1988, p.216). Other dates: Betancourt's date is approximately mid Sixth Cent BC.

Description references: Bammer, 1972, p.453; Betancourt, 1977, p.106, 141, No.39, Plate 67; Kirchhoff, 1988, p.215-6, No.A3; Ohnesorg, 1993b, p.116, Plate XXI.8.

Note: Ohnesorg (1993b, p.116) indicates the similarities with Iver-5. Although the marble is Cycladic, the concave-convex volute channel design is not.

**Iver-12** Fragment of a rough grained crystalline marble Aeolicising capital from votive column, Delos. Delos Museum.

Site found: -

Origin: -

Date: 550 BC (Martin, 1973, p.377). The date is certain due to external indices.

Description references: Martin, 1973, No.3, p.375-8, Fig 4-5; Kirchhoff, 1988, No.A9, p.219.

**Iver-13** Fragments of an Aeolicising capital from the acropolis, Athens. Acropolis Museum, Item 3847.

Site found: Acropolis, Athens

Origin: Athens

Material: Unpublished

Date: 540 BC (Raubitschek, 1938, p.164); Other dates: 550-530 BC [Type A] (Jacob-Felsch, 1969, p.34, Note 105.1).

Description references: Raubitschek, 1938, p.164,

Fig.22.

Note: No dimensions are available. The resemblance to Phoenician and Israelite Timorah type capitals in terms of the abacus and bolster spandrel palmette is noteworthy.

#### Concluding note:

The Aeolicising capital of the small building (No.31) at Alâzeytin ([Bodrum Museum No.3582]) across from Hallicarnassos, of the 2nd half of the 6th Century BC, as shown in Betancourt (1977, p.56, Fig.19b, Plate 32-4, are not included with these capitals. The capital is an isolated import into the Lelegian region.

#### 2.3.3.4 Aeolic capitals

Description of the quantitative and qualitative aspects of these capitals are not provided in Table form. Some main dimensions are noted here, and photographs and drawings of mentioned capitals are in Appendix 2. Omissions: See p.60

**Aeol-1** Fragments of tufa Aeolic capitals of the incomplete peripteral temple of Athena, Old Smyrna. Izmir Archaeological Museum, No.3546.

Site found: Old Smyrna, Bayrakli, Izmir,

Origin: Old Smyrna

Date: Ca 580 BC. Probably ca 580 BC, due to Kuhn's (1986, p.80) dating of the first quarter of the Sixth Century BC concurrent with the building of a new cella or sekos as part of a total Smyrnaean enlargement of the temple area, after Alyattes took the city. Other dates: Akurgal (1960; 1985, p.119) gives a date around the end of the Seventh Century BC (620 BC in *Alt Smyrna I*, p.66) for an Archaic temple and mentions (1985, p.121) the Smyrnaean restoration of this temple in 580 BC after its total destruction by the Lydians in 600 BC (It is clear his idea of a restoration of a 7th Century BC temple destroyed by Alyattes is rejected by Kuhn). Betancourt (1977, Plate 36) gives one date, namely 600 BC. The Izmir Museum dates the piece at 580 BC. Wiegartz (1994, p.125) places it at the early Sixth Cent BC following Akurgal's argument in *Alt-Smyrna I*, ignoring Kuhn's arguments.

Description references: Betancourt, 1977, p.60-3, 138, No.18 (Also see further references), Plate 36, Fig.20; Akurgal, 1985, Fig.40a; Akurgal, 1962, Plate.101, Fig.22; Kuhn, 1986, p.39-49 [Some dimensions p.47, Fig.3], Fig.3-4 [New capital elevation/plan reconstruction].

Notes: The restoration of Kuhn (1986, Fig.3) is not certain for all aspects of the capital, restored from the fragments of 24 different capitals, but the leaf cyma is not accepted as being part of the capital any more: Various earlier alternative interpretations for the column have previously been put, like Wesenberg's (1971, Fig.230), who saw the cyma as a column base flaring up and outwards. According to Betancourt (1977, p.59), archaeological records indicate their use at the top of the shaft. Akurgal's (1985, Fig.41a) drawing of his proposed Phase II restored temple of 580 BC [from his 1983 *Alt-Smyrna I* report] shows

smooth cylindrical bases, the cyma as capital echinus and most importantly, a first speculated reconstruction of a voluted capital of which small fragments are extant (See Betancourt, 1977, p.59). However, Kuhn's (1986, p.41, Fig.1, 10) critique of Akurgal's *Alt-Smyrna I* report establishes the so-called echinus cyma as column base, but flaring down and outwards, with capital resting directly on the column shaft end [Although this base form was soon replaced by other canonic forms, a leaf cyma is also used as column base at Neandria (See Aeol-2 below), and the outwardly flaring type is once again in monumental form at Temple 'D' in Metapont of 470 BC, and later in other buildings, all references to this early rather atectonic form].

- The Old Smyrna temple columns are deemed by Kuhn (1986, p.43; 80) to be the first stone peristyle in east Ionia, and their capitals be the first Aeolic capitals. No corner capital pieces have been found. [Do\* dwgs].

**Aeol-2** Porous tufa Aeolic *peripteros* capitals [with mushroom-shaped leaf cyma *naos* capitals] of the temple (Bld-Aeol-4), Neandria. Archaeological Museum, Istanbul. No.704 K275.

Site found: Acropolis of Neandria

Origin: Neandria

Date: Ca 550 BC (Wiegartz, 1994, p.125); Other dates: ca 550 BC (Wesenberg, 1971, p.138); 575-50 BC (Betancourt, 1977, p.73, Plate 41).

Description references: Betancourt, 1977, p.64-73, 138, No.19, Plate 41, Fig.25-9, 32 (Other relevant references and dims. are indicated on p.138: bottom diam H=400, restored length A=1200, top bearer C scales 504). Clarke, 1886, p.1-7, Fig.1-2 [Small capital - found in city wall]; Schefold, 1939, p.43, Fig.21; Wiegartz (1994, p.125, 130-1) [New small capitals - found 125 NW of temple].

Notes: Schefold (1939, p.47) earlier deemed the large bulging leaf cyma to not be part of the capital. Wiegartz (1994, p.129-31) supports the idea of a *peripteros* for the temple, with the bigger capitals apportioned to the front columns with wider spacing, and the smaller capitals for the rest. This leaves the mushroom-shaped leaf-cymas as capitals for the *naos* aisle. The *peripteros* columns have the bulging leaf-cymas as bases (Here Wesenberg's (1971, p.78, 133, 128, Note 54, Fig.164) idea for the outer columns is made more definite, and Altekamp's (In *Forschungen Kleinasien II*, 1991, p.45-62) question is answered).

- Drerup (1952, p.13 flw) suggests that these capitals are the result of design aspects relating to metalwork in architecture, furniture making and art. [Kuhn, 1986, p. 55-9 however states that Aeol-1 has timber precedents, the others stone relief and metalwork applique]

**Aeol-3** Tufa Aeolic capital of a building (Bld.Aeol-8), Larisa (On-the-Hermos). Archaeological Museum, Istanbul, Item No.1924 K277.

Site found: Acropolis of Larisa.

Origin: Larisa (On-the-Hermos)

Date: 575-50 BC (Wiegartz, 1994, p.125); Other dates: 575-50 BC (Betancourt, 1977, p.76, Plate 42).

Description references: Betancourt, 1977, p.138,

No.20, Plate 42, Fig.34 (Further references and dims. are indicated on p.138); Boehlau et al, 1940, Plate 19a [Dimensions: Bottom diam H=425, length A=1300, top bearer C scales 880]; Schefold, 1939, p.42, Fig.14; Krischen, 1938, Plate 32 [as free-standing column]; Wesenberg, 1971, p.75, No.2 [With further references], Fig.153-4; Kuhn, 1986, p.59.

Notes: Betancourt (1977, p.76) argues that it is definitely architectural, probably from the Megaron, and not from a free-standing column as Krischen (1938) drew and Schefold argued, and from this he dates it to 575-50 BC. Schefold in Boehlau *et al* (1940, p.161-2) argues convincingly that the Megaron had two Ionic columns and capitals in antis (See Ion-54). As the date of the Megaron was used to date the capital, Betancourt's date should actually be reconsidered from new evidence as it arises.

- Schefold (1939, p.50) saw it as capital of statue-carrying votive column, and dating from the 7th Cent BC.

- Wesenberg (1971, p.79), on the strength of the argument for the new reconstruction of the Neandria cyma, column and capital, that the leaf cyma was not situated between column and capital but used as column base (Also recently so argued for Old Smyrna by Kuhn (1986)).

**Aeol-4** Phocaeen stone Aeolic capitals of the Old Palace ('B')(Bld.Aeol-5), Larisa (On-the-Hermos). Archaeological Museum, Istanbul. No.1925 and 6.

Site found: Acropolis of Larisa.

Origin: Larisa (On-the-Hermos)

Date: 550 BC (Betancourt, 1977, p.76).

Description references: Boehlau *et al*, 1940, Plate 19b, 22a; Betancourt, 1977, p.138, No.21 (See further references and dimensions: Capital Bottom diam H=385, reconstructed length A=1220, top bearer C=728)], Plate 45-7.

Note: Possibly sheathed with bronze.

**Aeol-5a/b** Local Trachyte Aeolic capitals of the Late Archaic (Apollo Napaio?) peripteral Temple II (Bld.Aeol-2b), Klopédi [also known as Kolumdado, or Nape, presently Keramidoti], Mytilene [Lesvos]. Archaeological Museum, Mytilene.

Site found: Klopédi, near Aia Paraskeve, Mytilene [Lesvos]

Origin: Klopédi, Lesvos.

Date: The last third of the Sixth Cent BC (Betancourt, 1977, p.85).

Description references: Aeol-5a: Betancourt, 1977, p.83-5, 139, No.27 (Also see further references and dims.), Plate 49, Fig.41-2; Condis, 1950, p.28, Fig 3; Koldewey, 1890, p.44 flw, Taf.XVI.1-3, XVII [Capital detail and dimensions: Bottom diam H=480, length A=1360, top bearer C=880]; Scully, 1964, p.129-34, Fig.10-1.

**Aeol-6** Limestone Aeolic capital of temple (See Bld.Aeol.2b) at Klopédi or the city Mytilene, island Mytilene [Lesvos]. Istanbul Archaeological Museum, No.985 K276.

Site found: "Acropolis of Mytilene" [could be either the town or island]



Origin: Even though it could be from Klopedi, Williams (1993, 85) indicates it to be from Mytilene [Town].

Date: Late Sixth Cent BC (Betancourt, 1977, p.87, Plate 50).

Description references: Betancourt, 1977, p.85-7, 139, No.28. (See further references and dimensions: Bottom diam H=360-90, length A=1260, top bearer scales 728 using Fig.18 from Schefold), Plate 50; Condis, 1950, p.30, Fig.4 [photo includes portion of base and column drum]; Scully, 1964, Fig.14; Schefold, 1939, Fig.18. Note: Schefold (1939, p.46) indicates that the capital carried a timber architrave.

Aeol-7 Grey granite Aeolic capital of unknown architectural application (See Bld.Aeol-7), Eressos (Eressos), Mytilene (Lesvos). Archaeological Museum, Mytilene town, without invoice No.

Site found: Modern house near Eressos.

Origin: Eressos, Lesvos.

Date: In the second half of the Sixth Cent BC, or even later (Betancourt, 1977, p.88).

Description references: Betancourt, 1977, p.88, 139, No.,29 (Also see further references and dimensions), Plate 51, Fig.43; Kirchhoff, 1988, p.139, No.F; Condis, 1950, p.25flw [Dims.], Fig.1-2.

Note: The back side of the capital is both flat and smooth.

Aeol-8 Marble leaf cyma [of an Aeolic capital?] (further detail lost/unknown), Thasos. Thasos Museum invoice No.1385

Site found: Agora, Thasos.

Origin: Thasos

Date: Akurgal (1959, p.3) dates it to the second half of the Sixth Century BC.

Description references: Martin, 1958, p.125, Plate 26.3; Salviat, 1956, p.421, No.2 [Announcement of discovery]; Akurgal, 1959, p.2, Table 5a; Betancourt, 1977, Plate 37.

Notes: The cyma has an upside down truncated cone form, and the leaf pattern is similar to that of the bases of the columns of the capitals from Larisa (Aeol-3) and Neandria (Aeol-2). Martin (1958, p.125) describes the cyma as definitely part of an Aeolic capital, with the style 'plus évolué' [He also still thought that the Old Smyrna capital had a leaf cyma echinus. His definition has to be revisited in the light of Aeol-1 and -2].

Aeol-9 One of many [lost] Andesit leaf cymas and a fragment of an Andesit volute of an Aeolic capital from a temple (?), Aegae [Aigai, near Pergamon]. Pergamon Museum depot, invoice No. unknown (DAI Photoarchiv Pergamon in Istanbul PE71 and 90).

Site found: from the rubble of the upper town of Aegae, between the market and cistern.

Origin:

Date: Ca 550 BC, as the capital from Neandria [Aeol-2; dated to 550 BC as accepted in this study] (Radt, 1991, p.482); Other dates: As Neandria [Aeol-2] (Wiegartz, 1994, p.125).

Description references: Schefold, 1939, p.49; Wesenberg, 1971, p.80 Note 393; Radt, 1991, p.481-3, Notes 1-22 [References to artefacts, site and photo

sources], Beil.56.1-5 [photographs]; Wiegartz, 1994, p.123-5, Note 28-9.

Notes: The close similarity of the volute detail with that of Neandria [Aeol-2] is mentioned by Radt (1991, p.482, who uses this as a dating technique. The size, material and proximity on the site of of both volute and leaf cushion indicate to Radt (1991, p.483, Note 19) their belonging together, but there is no definitive conclusion as to the relative positions (Here one refers to the similar problematique at Neandria).

### 2.3.3.5 Torus capitals

Description of the quantitative and qualitative aspects of these capitals are not provided in Table form. Photographs and drawings of Torus capitals in Appendix 2.

Tor-1 Poros fragment of one torus capital (Group E) of the First Dipteros (Bld-1d), Samos. Pergamon Museum, Berlin, No. SK1726.B

Site found: Earthworks around the Heraion IV

Origin: Samos

Date: Ca 575 BC (Kienast, 1990, DiskAB5, p.124 [-]; Kienast, 1992; Hendrich, 1997, p.77).

Description references: Kienast, 1992, p.176-7, Fig.5; Hendrich, 1997, Vol.1 p.5-35, Fig.7-12, Beil.5, Table 1 and Vol.2 [Drwg of fragments and reconstructions from fragments; Positions].

Notes: All the torus capitals of the temple exist only in small fragments. Other than the bases which were built into the Heraion IV foundation walls, the capitals were deliberately smashed to provide material for the new coastal road and ramp for the transport of the marble blocks to the Heraion IV site. Hendrich (1997, Table 1, Beilage 5) has apportioned the fragments into 6 categories according to their position in the First Dipteros (A-cella, B-pronaos, C-inner peristyle, D-outer peristyle, E-corner groups, F-front peristyle).

- Due to the amount of torus fragments it is obvious that there were more than needed for the column bases. This, and the shape and surfaces of the torus fragments lead Kienast (1992, p.176) to believe that the First Dipteros had torus capitals rather than Ionic capitals [An idea earlier expressed by Gruben (1960, p.75)]. The idea of the torus being used for capitals is also underpinned by the stone torus capital from kettle stand from Samos (Kienast, 1985, p.384). Kienast further proposes that the capital carried a timber block on the upper surface of the capital (See drawing in Hendrich, 1997, Beil.5), an idea also earlier stated by Gruben (In Gruben et al, 1961, p.241), but his idea now being supported by the roughness of the upper capital surface. The hypothesis presently rests mostly on a reconstruction of a probable corner capital timber and metal pre-form by Kienast (1999), indications that the upper surfaces of the capitals were prepared for timber elements, and to a lesser degree on the existence of a grooved marking on one of the capital fragments (R240 [See Hendrich, 1997, Fig.30a]). This fragment is from the Museum depot, from an unknown site. The mark would indicate where a timber block or beam would have to be positioned. Whilst Hendrich (1997,

p.37) indicates that this fragment may have come from the Heraion IV foundation wall, and thus received a marking, one must keep in mind that all the other capital fragments (So fragmented that any markings are not traceable) were not from the foundation but from the earthworks around the Heraion IV, increasing the possibility that the marking had another reason. Kienast has for some time expressed the hypothesis that this capital form may have provided the vehicle for metal applique plates, mostly due to the probability that such a corner example might have been the pre-form of the stone capital, in that plates from both sides would form the diagonal, concave corner volute shape, when fixed to the timber block and to each other. The author has, from Kienast's verbal descriptions in 1997, prepared a type drawing (See Chapter 4.1.1.12 and Append.1, Tor-1), but which has very recently been superseded by Kienast's (1999, Fig.5) own, more erudite drawing. One may think that Hendrich's (1997, p.37, Note 141) apportionment of the capital fragment with marking line to an inner peristyle, where no bracket blocks are expected if one takes the Heraion IV as a further evolution of the type, would make the hypothesis invalid. One must indicate that, as the inner capitals would probably have had markings for epistyles, this is still no proof that the outer capitals may not have had similar markings. Whilst there may be reservations around the proportions of the hypothesised timber block (Ie not as thin in width as later canal forms), the reasoning around the evolution of the corner capital form demands that the possibility of timber brackets must remain open for now.

- Photographs of torus SK 1726.B are published with kind permission of Prof. Dr. Heilmeyer, Director of the Staatliche Museen, Berlin. Thanks also to his member of staff, Dr. V Kästner, and to Dr. H Kienast of the DAI, Athens, for help in this regard.

-The height dimension of the specific capital shown here by Ch. Hendrich, as received verbally from Dr H. Kienast, rather than referring to the general dimension of type E.

**Tor-2** Fragments of limestone torus capitals of the so-called 'Limestone' Apollo temple (Didymeion), Didyma, rather deemed to be an early phase or inner limestone peristasis of the Archaic temple (Bld-6d). Present location of fragments A670, A675, A158 (grooved) and A149 (smooth) is unknown.

Site found: Didyma

Origin: Didyma

Date: Not earlier than 540 BC if part of the Archaic Didymeion. The existence of a separate limestone building, started early in the Sixth Century BC (Schneider, 1996, p.83; He indicates the roof cyma detail dates from ca 570 (Schneider, 1996, p.83)) is currently viewed with caution (Verbal communication Kienast), with the limestone elements possibly being of an early phase or the inner peristasis of the Archaic temple, whose terracing was begun in 550 BC (Tuchelt, 1991, p.21). These capitals are therefore not older than those of the First Dipteros, which building was started around 575 BC (Kienast, 1992; Hendrich, 1997, p.77), but from that tradition.

Description references: Schneider, 1996, p.80-1, Fig.5-6

Notes: If the first dipteral Heraion did have timber brackets on the outer peristasis torus capitals (See Tor-1), one cannot surmise the same detail for an inner peristasis here.

- The diameter of the capitals are between 1020-1360 (Schneider, 1996, p.80).

**Tor-3** Capital of a small kettle stand replica (Col-9), Samos.

Origin: Samos

Date: "Altertümlicher.." [if read in context here meaning closer to] the outgoing years of the 7th Cent BC (Buschor, 1930, p.46); Kirchhoff (1988, p.147) dates it in the early 6th Century BC.

Description references: Buschor, 1930, p.46, Beil.XI; Kirchhoff, 1988, p.147, No.K1.

Note: The very shallow torus 'capital' is slightly faceted. The column has a round moulding at the top. Column: See Col-9 in 2.4.1.2.

**Tor-4** Limestone capital of small kettle stand replica (Col-10), Samos.

Origin: Samos.

Date: ".näheren sich eng der Rhoikoszeit". (Buschor, 1930, p.46); Kirchhoff (1988, p.147) just states "Rhoikoszeit". [Referring to the time of the 1st Dipteros]

Description references: Buschor, 1930, p.46, Beil XI [base], Beil XII [capital]; Kirchhoff, 1988, p.147, No.K2.

Note: The shaft and capital are monolithic. The capital is turned with concave flutes with flat edges.

Column: See Col-10 in 2.4.1.2.

### 2.3.3.6 Cyma capitals

Description of the quantitative and qualitative aspects of these capitals are not provided in Table form. Photographs and drawings of cyma capitals in Appendix 2. Omission: See p.57.

**Cym-1** Fragment of a leaf cyma capital of the Apollo temple (Bld-20), or a votive column\*, Naukratis.

Site found: Level 312-27, *Temenos* of Naukratis. British Museum

Origin: Naukratis, built by the Milesians (See notes at Bld-20).

Material: Limestone.

Date: Pedersen (1983, p.99, 116) reports the dating as being in the second quarter of the Sixth Century BC, around 500. Other dates: According to the cyma shape around 580-70 BC, a bit earlier than the Naxian sphinx capital at Delphi (Kirchhoff, 1988, p.198).

Description references: Flinders-Petrie *et al*, 1886, p.11 flw., Plate III; Dinsmoor, 1927, p.103, Fig.37; Dinsmoor, 1928, p.125-6, Fig.47; Pedersen, 1983, p.99-100, 116, Fig.11-12; Kirchhoff, 1988, p.188-9, 197-8, No.E1.

Notes: There are four reconstructions of the capital: i) Petrie's (1886, Plate III), with (lost) volute capital-torus combination on the leaf cyma (much like shown in Capital Ion-66 from Delphi and Capital Ion-65 from

Didyma); ii) Dinsmoor's (1927, Fig.37; 1928, Fig.47) standard volute capital, made up of a separate canal and torus; iii) Kirchoff (1988, p.198) who sees this as a cyma capital only; iv) Gruben (1976, p.333) believes the canal part was of timber (Also see Pedersen, 1983, Note 74).

-\*Kirchoff also refutes the theory that this capital belonged to the Archaic 'first' or 'limestone' temple of Apollo. However, Pedersen (1983, p.99, No.S2) in his work on decorated column shafts and capitals mentions a fragment from a second column similar to this one, giving more credence to the architectural nature of the capital. Nevertheless, no finality exists on the matter. - One would like to acknowledge Petrie's find of a volute section, but that might have belonged to another monument. This capital is placed with the cyma capitals, but the existence of a timber or stone canal piece may not be excluded.

**Cym-2** Fragment of a marble leaf cyma capital of a votive column, Didyma. [Original invoice No. F656].  
Site found: The town Jeronda

Origin: Didyma

Date: Second quarter of the Sixth Cent BC (Kirchoff, 1988, p.198).

Description references: Kirchoff, 1988, p.198, No.E2; Wiegand, 1941a, Plate 224.1; Wiegand, 1941b, p.148, No.gß, p.194 No.F656.

Note: Wiegand describes it as a base of an altar, but Kirchoff (1988, p.198) believes it is too flat for that.

**Cym-3** Two fragments of a marble leaf cyma capital of a votive column, Didyma. Pergamon Museum, Berlin.

Site found: -

Origin: Didyma

Date: Second quarter of the Sixth Cent BC (Kirchoff, 1988, p.199 (according to the egg-cyma form)).

Description references: Kirchoff, 1988, p.199, No.E3; Wiegand, 1941a, Plate 220; Wiegand, 1941b, p.148, F657, Z657-8.1-7.

**Cym-4** Fragment of a marble leaf cyma capital of a votive *Kore*(?) column, Delos. Delos Museum, item 222.

Site found: Delos

Origin: Unknown. However, the similarities with the leaf cyma of capital Ion-23 from Thasos, of the same period, leads one to suspect the same origin.

Date: *Ca* 550 BC - Ohnesorg (1993b, p.112) believes the capital is younger than Cym-14 [575-50 BC] from Paros, therefore Martin's (1973, p.382) date of the first (rather than the second) quarter of the Sixth Cent BC is too early. Kirchoff's (1988, p.200) date of mid Sixth Cent BC seems feasible then.

Description references: Kirchoff, 1988, p.199-200, No.E4; Martin, 1973, p.378, No.4, Fig.6-8; Ohnesorg, 1993b, p.112, Note 8-9.

Notes: Upper diameter 640, height 210, diameter of top plinth 390-400, height of plinth 55, leaf width 110 (Ohnesorg, 1993b, Note 8, 9). The similar diameter dimension in Martin (1973, p.380, Fig.8) therefore does not allow for 20 leaves of 95mm, but rather 18 of 110mm.

- The bordered cyma leaves are separated by another round beading, a detail in this period only found in Thasos (Much later in Chios [Ion-26 and Cyprus [Ion-56]).

**Cym-5** Fragment of a marble leaf cyma capital of an interior column of the cella, Heraion IV (Bld-1e), Samos [Also see Cym-9]. Pergamon Museum.

Site found:

Origin: Samos

Date: After 540 BC, at earliest before 535 BC, probably before 522 BC: Pedersen (1983, p.112) indicates that "...bei dem Tod des Tyrannen im Jahre 522 v. Chr. noch längst nicht vollendet. Ein Teil der Säulen - vermutlich der Cella - wird jedoch fertiggestellt."

Other dates: Buschor (1957, p.16). Kirchoff (1988, p.200) concurs.

Description references: Buschor, 1957, p.16 flw., Beil.11.2; Kirchoff, 1988, p.200, No.E5; Reuther, 1957, p.51.

Notes: Kirchoff wrongly apportioned this capital to a votive column, even though Buschor (1957) correctly identified it as from the Heraion IV. The cella columns seem to be the first architectural columns in stone to show the honeysuckle necking detail.

- See Capital Ion-58a-b for description and dates for the standard and corner capitals in the *peripteros* of this building. See Gruben (1963, Fig.38) for a functional context drawing.

**Cym-6** Fragment of a marble leaf cyma capital of a votive column, Didyma.

Site found:

Origin: Didyma

Date: Around 500 BC (Kirchoff, 1988, p.201, (according to the ornamentation)).

Description references: Kirchoff, 1988, p.201, No.E6; Wiegand, 1941a, Plate 220; Wiegand, 1944b, p.148, F659.

**Cym-7** Fragment of a Poros leaf cyma capital of the North Building Phase IV (Kienast *et al*, 1989) (Bld-1e), Samos. Presently in the Depot, Samos.

Site found: Heraion

Origin: Samos

Date: 525-10 BC (Kienast *et al*, 1989, p8). Other dates: Still in the Sixth Century BC (Kyrieleis, 1978, p.258); Last quarter of the Sixth Century BC (Kalpaxis, 1986, p.640); Early Fifth Cent BC (Buschor, in Kirchoff, 1988, p.201 (according to the cyma form))  
Description references: Kienast *et al*, 1989, p.48-62 [building description], 153-9 [finds], Fig.35 [drawings of fragment], Plate 12.4, p.154-6 Items No.11-20 [description and photo of capital fragment], Fig.9 [reconstruction of unfluted column and capital of peristyle], 10 [reconstruction of pronaos], 11 [reconstruction of building], 36-7 [Frieze], Plates 15-20 [plans]. See also Buschor, 1957, p.20, Beil.21.1 ['Heraion: Poroskapitell']; Kirchoff, 1988, p.201-2, No.E7.

Notes: Buschor (1957) ascribed this capital to the Heraion. The possibility that the capital is from the Artemis-Apollo (See Walter, 1976, p.91, Fig.85) sanctuary north east of the Heraion, Samos, was

rejected by Kirchhoff (1988, Note 713) who sees it as a votive column capital [Also see Reuther, 1957, p.51]. One must remember that the 'Artemis-Apollo' building is actually the North Building I. Walter's cult designation was disputed by Furtwängler *et al* (1989, p.64).

- Even though the reconstruction by Kienast *et al* (1989) shows only torus capitals, the possibility of an element between cyma and epistyle cannot be completely excluded.

**Cym-8** Fine white porous stone leaf cyma\* of the Athenaion I (Before Harpagos) (See Bld-20), Phocaea (Foça). Earlier Basmahane Museum, Izmir, now [Sept 1999] in a court of the Archaeological Museum.

Origin: Phocaea

Date: Second quarter Sixth Cent BC (Akurgal, 1985, p.117, 394). Other dates: Akurgal (1961 p.328 Note 16) previously dated the capital in the second half of the Sixth Century BC (he concurs with Roland (1959, *Revue des Etudes Grecques*, Vol.72, p.324 [-])).

Description references: Akurgal, 1961, p.238, 287, Fig. 252; Akurgal, 1962, p.377, Table 101.23; Akurgal, 1985, p.117-8; Akurgal, 1956, p.7 [Turkish text], Fig 36; Akurgal, 1959, p.1-2, Table 1b; Martin, 1958 [BCH, *Etude d'arch Class. I*, 1955-6], p.121, 125, Fig. 3. Notes: It must still be ascertained whether the piece (See Akurgal, 1960) is a cyma for an Aeolic capital, just as wrongly (See Aeol-1) speculated for the Old Smyrna capitals (See Betancourt, 1977, p.60-3, 138, No.18), a stand-alone cyma capital, or even a column base, as is evident for Old Smyrna, Neandria and Larisa (See Aeol-1 to -3). The lower portion of the column [the torus] shows Samian/Ephesian detailing. After Harpagos, Phase I was rebuilt in the Ionic style as Phase II with complete Order (See Ion-60).

\* The existence of a fragment of a second cyma at the Museum was recently brought to the author's attention.

**Cym-9** Marble leaf cyma capital from the eastern inner ring (See Buschor, 1957, p.16) of the dipteros of the Heraion IV (Bld-1e; Polycrates), Samos. Presently Pergamon Museum, Item A601. [Also see Cym-5]

Site found: Heraion

Origin: Samos

Date: After 540 BC, at earliest before 535 BC, but probably before 522 BC: The building start-up commenced by 540 BC (Kienast, 1992, p.185). Work was halted during Polycrates's reign, and work on the upper parts recommenced *ca* 500 BC (Kienast, 1992, p.186), but it cannot be said with certainty that some outer peristyle columns have not been completed by that time [We know of all the other activity in the sanctuary before 500 BC. Pedersen indicates that the eastern peristyle columns were commenced after 500 BC]. The inner [cella] columns [See Cym-5] were up by 522 BC (Pedersen, 1983, p.112). Other dates: Buschor (1957, p.16) dated these capitals to 515-500 BC.

Description references: Buschor, 1957, p.16; Reuther, 1957, p.43-4, No.8, Plate 21, 1-2, Drw.39 [Also see capitals A602-5, Drw.40-3]; Mace, 1978, No.61-5, Fig.81-91 [His No.66 and 68 are not of the Heraion IV as stated]; Boardman, 1959, p.200-1; See Cym-5 and Cym-7 and Notes 710 and 713 in Kirchhoff, 1988.

Notes: See Capital Ion-58a-b for description and dates for the standard and corner capitals in the *peripteros* of

this building. See Gruben (1963, Fig.38) for a functional context drawing.

**Cym-10** Cyma capital of the *in-antis* Klazomenaean Treasury ('XVI'; Bld-30), Sanctuary of Apollo, Delphi.

Origin: Klazomenai

Date: *Ca* 528 BC: "Two decades after the fire of 548 BC (Gruben, 1961, p.135; 1966, p.78). Other dates: Beginning 2nd half Sixth Cent BC (Weikert, 1929, p.135).

Description references: Dinsmoor, 1913, p.5-83, Fig.3; Gruben, 1961, p.135-6; Weikert, 1929, p.135.

**Cym-11** Cyma capital of the *in-antis* Massiliot Treasury (Bld-31), Sanctuary of Athena, Delphi.

Origin: Massilia.

Date: Soon after the Klazomenaean Treasury [ie after 528 BC; See Cym-10] Gruben, 1961, p.135. Other dates: De la Coste-Messeliere's (1957, p.330) date is 530-10 BC; Akurgal's (1961, p.287 and Note 15) date is 533-500 BC.

Description references: Dinsmoor, 1913, p.5-38, Fig.3; De la Coste-Messeliere, 1957, p.330, Plate 214-7.

Notes: The building is on the *Terasses Orientalis*, west and set back of the Athena *Pronaia* temple. Pomtow (1913, p.1-49 [alternative no. p.199-246], Fig.22-3, 42, 50, 58, Table II) previously reconstructed this building and held it to the Klazomenaean *Phylacus* [Repentance] temple which he dated to 550 BC, and reconstructed with a capital with two superimposed leaf crowns.

**Cym-12** Fragment of a leaf cyma capital (with inscribed top band) from a votive kouros column, Paros. Paros Museum Inv 767 (München TU No. M 158).

Site found: Unpublished

Origin: Paros.

Material: Unpublished.

Date: *Ca* 550 BC (Ohnesorg, 1993b, p.111) due to stylistic criteria.

Description references: Ohnesorg, 1993b, p.111, Plate XX.1-3 and Note 2 [Dimensions and references to analyses of inscription].

Notes: The epigraphically based date of 525-500 BC is not accepted by Ohnesorg [No reason].

- The main dimensions are: Diameter 504, height 146,5. The echinus side is smooth with painted leaves, but relief leaf ends appear on the bottom

**Cym-13** Cyma capital of the Caryatid column of the distyle *in-antis* Cnidian Treasury (Bld-19), Apollo Sanctuary building 'XXV', Delphi.

Site found: -

Origin: Old Smyrna.

Date: *Ca* 560 (Gruben, 1961, p.135) or *ca* 550 BC (Gruben, 1966, p.78). Other dates: 575-50 (Weikert, 1929, p.103-5); 550-45 (De la Coste-Messeliere, 1957, p.319).

Description references: Durm, 1910, p.260; Dinsmoor, 1913, Fig.3; De la Coste-Messeliere, 1957, p.319, Plate 55 [Capital]; Gruben, 1961, p.135, Fig.26, 28, 30 [left].

Note: The supporting columns for the caryatids have

Samian bases.

**Cym-14** Fragment of a leaf cyma capital (with top band) from a votive *kouros* column, Paros. Paros Museum Inv. 364 (München TU No. M 215).

Site found: Unpublished.

Material: Unpublished.

Date: 575-550 BC (Ohnesorg, 1993b, p.111).

Description references: Ohnesorg, 1993b, p.111, Plate XX.4-5, Note 5-7.

Notes: The main dimensions are: Diameter 432, height 164-5, hole in bottom bearing is 160 in diam and 50 high

**Cym-15** White Parian marble leaf cyma capital, Keos. Keos Museum without Inv. No.

Site found: Unpublished.

Date: Archaic, but no specific date published. The capital cannot be included in the chronology.

Description references: Ohnesorg, 1993b, p.112, Note 10, Plate XX.6.

Notes: The main dimensions are: Top diameter 555, height 211. Leaves inscribed as Cym-11.

**Cym-16** White Attic (?) marble leaf cyma capital with Lesbian *cyma recta* profile, Keos. Keos Museum without Inv. No.

Site found: Unpublished.

Date: Archaic, but no specific date published. The capital cannot be included in the chronology.

Description references: Ohnesorg, 1993b, p.112, Note 11, Plate XX.7-8.

Notes: Leaves are painted on. The main dimensions are: Top diameter 347, height 134

**Cym-17** Damaged Parian marble "Lesbian" leaf cyma capital, Siphnos. Siphnos Museum Inv. 133.

Site found: Unpublished

Date: Archaic, but no specific date published. The capital cannot be included in the chronology.

Description references: Ohnesorg, 1993b, p.112,

Notes: There is no photograph. The main dimensions are: Top diameter 480, height 206

**Cym-18** Egg cyma of a votive column, Didyma. [Original invoice No. F 655].

Date: Whilst Wiegand (1941b, p.148) dated it to the early 6th Cent BC, Kirchhoff (1988, Note 486) cites Tuchelt's [1970] date of 560/50 BC.

Description reference: Wiegand, 1941b, p.148, No.α, Tf 220; Kirchhoff, 1988, p.147, No.K4.

Note: The leafed capital had a top band and a bead-and-real moulding below in the manner of pieces from Myus. There is no photograph.

### 2.3.3.7 Capitals excluded in terms of the time delineation

No detailed quantitative and qualitative information is provided.

**Excl-1** Various fragments of Ionic poros volutes from Didyma.

These fragments were assigned as votive column

capitals by Wiegand (1941a, No. A, B, C and D, Fig.F662; 1941b, p.149). Only capital A was dated by Wiegand who saw it as being of the oldest, known Ionic capitals. According to Gruben (1963, p.137-40) however, not one of these capitals, except Wiegand's No.D, could be an Ionic normal capital, although he then assigned them all as of architectural Origin: (An *acroterion*, console, stair wall edge, etc). Gruben (1963) provided provisional dates, all being in the Sixth Century BC, but much later than Wiegand's. Lately one of the mentioned Ionic capitals, No.D has been redated to ca 600 by Gruben (1996, p.63) and reassigned as an architectural capital on top of a rectangular timber column. This capital is included as a pre-form of the Ionic capital as Preion-2 in the study. Wiegand's capitals A, B, and C are excluded from this study on the basis of Gruben's (1963) chronological assignation.

**Excl-2** The Ionic capital described as being found on the north flank of the Propylaea, acropolis, Athens, which is actually from the Athenaion II, Sounion.

Capital reference: Puchstein (1887, p7-8, No.4, Fig.4) [drawing and dimensions]; Mace No.8, p.161; Theodorescu, 1980, No.53.

Like Puchstein (1887, No.4) Mace identifies the capital [National Museum No.4478] as 'found at the north flank of the Propylaea', and reports the date of manufacture as being a little before 480 BC (1978, p.161, No.8, Fig.150 [Not Fig.149. Here Mace confused the order of the illustrations]). Theodorescu (1980, Table 1 and No.53 on p.163) identifies a capital [No.53] as Puchstein's No.4, and calls it 'chapiteau votif (dans la Pinacothèque)', dated to 470-50 BC. Möbius (1927, p.170, Beil.18.9) however identifies a different capital [DAI photograph 871] as Puchstein's No.4 capital, and mentions its close likeness to a capital from the Athenaion II at Cape Sounion. There is another capital, identified by Theodorescu (1980, Table 1, and No. 68 on p.164) as being from 'Cap Sounion, Athénaion', dating from 475-50 BC. The capital that Gruben (1966, p.210) connects to the Athenaion II at Cape Sounion, and dates to 460-450 BC, corresponds to the capital 'found at the north flank of the Propylaea', namely Puchstein's No.4. The reader can hopefully gather that there are two similar capitals, both connected to Cape Sounion. Although they are not exactly the same in terms of dimensions, there is enough proximity to show they might be closely related. The above two capitals are presently in the National Museum, Athens (items No.4478 and 4479), and identified as coming from the Athenaion II, Sounion (Also see confirmation from Daux (1961, Fig.1 and p.605). Due to the assigned function and corresponding dating of the building [475-50 BC], the mentioned capital is excluded from the study (A third capital in this series was found by Züchner (1936, p.332, Fig.21) behind the Acropolis Museum (Drerup (1937) dated the capital to 500-480 BC and believed the series to have belonged to a propylaea)).

**Excl-3** '*Chapiteau votif(?) dans la Petit Musée de l'Acropole*'.

Theodorescu (1980, No.47) dates the capital to 480 BC, and Mobius's (1927) date was in the Fifth Century BC.

**Excl-4** '*Chapiteau d'angle trouvé sur les pentes de Areopage*'.

Theodorescu's (1980, No.49) cited date is 480 BC. The capital is excluded from the study.

**Excl-5** The Ionic capital from the Museum in Eritria. This capital is dated by Theodorescu (1980, No.65) to 490-70 BC, but Kirchhoff's (1988, No.39) date of the second quarter of the Fifth Century BC applies.

**Excl-6** The Ionic capitals of the prostyle harbour sanctuary, Emporio Chios.

Capital description: Boardman, 1967; Also École Française D'Athenes, 1955, 289, Fig.12.

Kirchhoff (1988, No.54, p.88-9 and No.EK3, p.208) dated the capitals to 520-10 BC. In the light of Boardman's discourse on all other building elements, which he dated to the first half of the Fifth Century BC, and more probably the second quarter, these capitals will not be included as Archaic capitals, although they display all the traits of the Ephesian Archaic capitals.

**Excl-7** Two Ionic capitals of the *Hestiatorion* of Céos (presently Kea/Tzia), Delos.

Capital description: Kirchhoff, 1988, p.43-5, No.30; Roux, 1961, p.342-3, Plate 90.2; Roux, 1973, p.535-45, fig.5-7 [Building] p.525-54, fig.8 [capital and base]; Theodorescu, 1980, p.162, No.30; Vallois, 1966b, p.186, No.22.

Vallois classified these marble capitals (On poros bases and columns) as being from the so-called *Thesmophorion*. Roux's (1961) date for this function was 489-79 BC, and that of Kirchhoff (1988, p.44) in the first quarter of the Fifth Century BC (according to his proportional analysis). However, Roux (1961) argued against this classification. After having been assigned to a *Hestiatorion* by Roux, their accepted dating is 480-70 BC (Roux, 1973, p.543). The upward flaring echinus is remarkable. There is correspondence to the inner corner of the capital now assigned to the south entrance of the Apollo sanctuary at Delos (See Ion-32, -27, -48 and Gruben (1997, p.372) who sees the *Hestiatorion* capital as copying them).

**Excl-8** Small marble Ionic capital of a votive column from Didyma, found in the foundation of the church built in the *aduton* of the Didymeion. Presently in the Pergamon Museum, Berlin.

Capital description: Kirchhoff, 1988, p.100, No.66; Wiegand, 1941b, Part 1<sup>2</sup>, p.147-8 No.e, Plate 210-1, Inv No.652a-d; Part 1<sup>3</sup>, p.652-3, Plate 83a; Alzinger, 1972-3, p. 171, fig.2; Theodorescu, 1980, p.161 No.9; Mace, 1978, p.191, Fig.121-3. Kirchhoff (1988, p.66, Note 317) reports the dimensions from the drawings by Wiegand, with his own additions from the drawings and text. Like Alzinger he also draws attention to the Samian shape of the capital, excluding of course the abacus. Apparently Gruben (1963, Notes 137,164,

247, 300) sees this as a fusion of two distinct types.

Date: Even though the capital looks as if it might be an early type, Wiegand (1941b, p.148) sees this as a late capital from after the Persian destruction of Didyma in the Fifth Century BC. The capital is therefore not included in the work. Other datings: Alzinger's (1972-3, p.172) date is in the early Fifth century BC; Kirchhoff's (1988, p.100) date is between 475-450 BC; Theodorescu (1980, Table 1) provides a date of 490-80 BC without any motivation.

**Excl-9** Fragmented Ionic limestone capital of a votive column from the Giardino Spagno excavation, Syracuse. Presently in the Syracuse National Museum, Inv.No.3420 [Thanks to S. and E. Pauw for information].

Capital description: Cultrera, 1943, NSC, p.79-80, No.6 [Dimensions], Fig.37-8; Kirchhoff, 1988, p.102, No.68; Theodorescu, 1980, No.76; Benoit, 1954, RA, p.35, Fig 15 [3-d photograph, no date]; Alzinger, 1972-3, p.179, Note 20; See Theodorescu (1980, Plate 4) for plan ordering of the capital's bottom elevation. Due to the ornamentation and the capital bearing offset this capital is similar to those of the Heraion IV and Monopteros II (See Kirchhoff, 1988, p.102; Gruben, 1960, p.89), but it has bolster palmettes, similar to Pedersen's (1983, Fig.24) reconstructed side elevation for the Archaic Syracusan temple capital Ion-61.

Dating: Kirchhoff (1988, p. 102) dates it to 450-425 BC; Theodorescu (1980, Table 1) dates it to 510-480 BC without motivation; Benoit (1954) provides no date; Cultrera (1943) also provides no date; Alzinger (1972-3, p.179) seems to place the capital after 450 BC due to correspondences with other capitals.

**Excl-10** Portion of a marble Ionic capital from the Athenaion II or 'Newer' Athena temple, Miletos [Kalabak-tepe, Milet], found at the 'Newer' temple. Presently in the Balat Museum

Origin: Miletos

Date: This capital has evoked much debate, but the date accepted is that of after 479 BC, in the 2nd quarter of the Fifth Cent BC (Mallwitz, 1968, p.123; Koenigs, 1980, p.58 [His date is an approximate date based on detail]). Other dates are: 525-500 BC (Weickert, 1929, p.141). Alzinger (1972-3, p.178, Note 18) states it was found at the Athena temple, [but] that it dates to the Sixth Cent BC, and that identification is problematic regarding both form and function. Boardman (1959, p.208) could not date it closely, but clearly apportioned it to the 'Newer' temple. Kleiner (1968, p.36-8) apportioned it to a Classical rather than an Archaic Athenaion. Notwithstanding the dating, and the fact that Koenigs (1980, p.58) couldn't expressly confirm or reject Von Gerkan's apportionment of the capital to the Classical Athenaion, he discerned pre-Classical proportions (Proportions being midway between an example from Ephesos [Ion 29: 550-25 BC] and Kavala [Ion-50: 500-480 BC]). Mace (1978, p.105, Note 191) became confused when he reported on Wiegand (In *Milet I*, Vol.8, p.67) and Boardman's (1959) dates, which he misread to have been in the Archaic period.

Dates for the 'Newer' temple: After 494 BC

(Boardman, 1959, p.208; He appoints this capital to the newer temple); After Mykale, namely 479 BC (Kleiner, 1968, p.36). Kleiner (1968, p.36) mentions that from the capital piece, as well as from a egg cyma from the epistyle, we are dealing with elements from the Classical, post 479 BC temple. Akurgal (1985, p.221) says the temple dates from the first half of the Fifth Century BC due to its conformity with the Hippodamos plan.

Description references: Apart from [-] Von Gerkan's (1925, *Milet*, 1, Vol.8, p.16flw, 52 flw) [now disputed] reconstruction there are others by Mallwitz, A. 1968. *Athena-Tempel*. *IstMitt*, Vol.18, p.89-143]; Schiering, W. und Mallwitz, A. 1968. *Athena-Tempel*, *IstMitt*, Vol.18, p.144-60 [-]; Gruben, 1963, p.121, Note 71 [disputes the reconstruction with volute eye]; Boardman, 1959, p.208, Note 1 [argues for 4 *scotia* in the cushion instead of the 5 in the reconstruction [this will impact on the width]]. Also discussed by Alzinger, 1972-3, p.178, Note 18, Fig 9 [V. Gerkan's drawing]; Kleiner, 1968, p.36-8, Fig.20; Weickert, 1929, p.140-1; Koenigs, 1980, p.58, No.6, Table 29.1-2.

### 2.3.3.8 Contentious and 'ghost' capitals, comments, and omissions.

**No detailed quantitative and qualitative information is provided. There is no Cont-4.**

**Cont-1** The lost/not completed Ionic capitals, Temple 'A', Paros.

The definitely Ionic temple was not fully completed. Gruben (1982a, p.215, Fig.16) reconstructed a capital outline, and dated the temple to 530-20 BC (1982a, p.229).

**Cont-2** Not completed Ionic capitals of the Apollonion, Palati, Naxos.

Date of temple 550-25 BC (Zaphiropoulou, 1988, p.14). See Gruben (1970, p.341-2) for hypothetical capital dimensions.

**Cont-3** Capital of the Iphidike dedication.

This dedication of the last quarter of the Sixth Century BC by the Chiot sculptor Achermos (Raubitschek, 1949, p.8; Jacob-Felsch, 1969, No.4.2, p.161) is deemed to have had an Ionic capital.

**Cont-5** Fragment of a yellowish marble volute of an Ionic capital from Adrasteia, Kyzikos [Cyzicus. NE Troad/Propontis [And a colony of Miletos]] found in a cistern opposite the isthmus. Istanbul Archeological Museum, Item No. 1358.

There is doubt whether the capital from Kyzikos is from a temple or an altar (The more likely, according to Hazluck (1901, p.196)). The capital is dated to after 500 BC (Alzinger, 1972-3, p.184) and described by Hazluck, (1901, p.195, Plate 6.5 [Dimensions]); Alzinger (1972/3 p.184, Fig.14 top). The double volute bead, as in early Naxian examples, is noteworthy. Alzinger (1972-3, p.186) mentions that the dishform eye is as an example from Halkipinar [See Ion-12], of the Sixth Cent BC.

**Cont-6** The Ionic capital of unknown stone type, from Sardis, found near 'Dede Mezari' (Sardis excavation

Inv.No. LX 76.5).

Description: Mace 1978, p.224-5 and Fig.154-7 (He cites Greenewalt, 1978, Fig.10-13). The date that Mace reports is 525-500 BC or later. Too little remains for full interpretation.

**Cont-7** Ionic capital from Athens.

Description: Raubitschek (1938, p.169 [No invoice No. and no picture]). He reports that the capital's column had a Samian torus, and dates it with the Kallimachos capital of 489 BC. Due to lack of description the capital is not used in further inquiries.

**Cont-8** Ionic capitals from Athens.

Description: Puchstein, 1887, Fig.5, 7, 8. No further information regarding the date or provenance of these Athenian capitals is known.

**Cont-9** Ionic capital from Kition, Bamboula acropolis, Cyprus

Wright (1992, p.441-2, Fig.291A) reports on a Sixth Cent BC Ionic capital of unknown function. The author was unable to get the *Report of the Department of Antiquities at Cyprus*, 1984, p.209-13, to go further into this matter.

**Cont-10** Nine small Ionic capitals from Paros

Mentioned by Ohnesorg (1993b, p.115 Note 29) as Paros Museum No. 930, 935, 936, 420 and one without No. but München TU No. M75, as well as No. K188 in Museum and No.154 in a church on the southern part of Paros. Apart from a short description of M 75 in Ohnesorg (1993b, p.115, Plate XXI.6) no further detail is available.

**Cont-11** Fragment of a possibly Archaic Ionic volute in a rock pile of the castle at Mytiline.

Mentioned by Williams (1993, p.86), and although there are remains of an Ionic column that is suggestive, the capital's provenience, function and dating are still far from settled.

**Cont-12** Two uncompleted *perirrhantaria* in the shape of an upturned Ionic colonnette, Paros. Paros Museum Inv No.997 and in court of the Katapoliani Church, Paros Town. (München TU No. M281 and KA684).

Ohnesorg (1993b, p.117, Note 47, Plate XXII.5) identifies these previously unpublished items. These *perirrhantaria* are easily taken for Ionic votive colonnettes (eg Cont-13, 14 and Iver -2) if the water basin is broken off. No date is provided.

**Cont-13** Lost Parian Archaic capital, copied as a marble Ionic capital of a *perirrhantereion*, Ag Antonios Kephalos, Marpissa, Paros (München TU No. I 4).

Found at Castro of Mount Kephalos, Paros. Presently built in under the church altar piece.

Origin: Paros

Date: Byzantine (Ohnesorg, 1993b, p.118), but being a copy of an Archaic example. Other dates: Early Sixth Cent BC (Kirchhoff, 1988, p.138).

Description references: Alipranti, 1975, p.90, No.γ, Fig.23 [Photograph showing context of present use; dimension]; Kirchhoff, 1988, p.138, No.B, Fig. 3.2

[rudimentary sketch].

- This capital up till recently was deemed to have been one of the first Ionic capitals next to that from Sangri, Naxos (See dates above). Ohnesorg (1993b, p.118) deems this to be a crude Byzantine copy of an (then extant) Archaic upside down capital and column, designed as *perirrhanteion* (Like Iver-2). One must bear the existence of this Original Archaic capital in mind in the analyses.

- The capital, presently used in the normal upright position under an altar, is fixed to a column shaft which has rudimentary flutes stopping abruptly, making it uncertain whether the shaft had no base and followed the Doric fashion, or whether it has been sawn off to make it shorter. If seen as water basin the loss of 'base' should be seen as a loss of bowl, which made possible for the column to be used in the normal upright fashion (It is noted here that there should be search for shards of a possible water bowl rim).

**Cont-14** Lost Parian Archaic capital copied as a marble Ionic capital of a *perirrhanteion*, Ag Antonios Kephalos, Marpissa, Paros (München TU No. 15). Found at Castro of Mount Kephalos, Paros. Presently built in as base of the ambo support column in the church.

Origin: Paros

Date: Byzantine (Ohnesorg, 1993b, p.118), but being a copy of an Archaic example. Other dates: Early Sixth Cent BC (Kirchhoff, 1988, p.138).

Description references: Alipranti, 1975, p.90, No.α, Fig.17 [Photograph; One capital dimension]; Kirchhoff, 1988, p.138, No.C; *Archaiologika chronika*, 1960, Chron. 1, No.2, Plate A2.

- This capital is almost similar to Cont-13, and also deemed to have been a very old Ionic capital [only surpassed by Ion-1]. Even though this is not the case, in future analyses one must bear in mind that there was an original Archaic capital made in Paros.

- The capital has no column any more {Capital part of 16th Century ambo column base}.

- Other than Cont-13, the cup lozenge shape of the canalis top is more pronounced, the horizontal canalis profile differs, and the polster edge detailing differs. The volute bottoms have been chopped away partially for the column alteration.

- The rounded capital top has very small angle pieces to create a flat bearing surface.

**Cont-15** Fragment of a marble Ionic capital (function unknown), Delos. Delos Museum.

Origin: Not published

Date: Last quarter of the Sixth Cent BC, (Kirchhoff, 1988, p.38).

Description references: Kirchhoff, 1988, p.39, No.26; Vallois, 1966b, p.33, 185, No.21. No photograph available. Capital cannot be used in study. No dimensions published. Capital cannot be used in quantitative comparisons.

**Cont-16** Lost torus and possibly also cyma capital of the North Building I - Phase III, Samos.

The Phase III/Nordbau I building was started by 545-35 BC [Slightly before the Heraion IV], and the Phase IV/Nordbau II peristyle by 525-10 BC (Kienast *et al*, 1989, p.7-8).

**Cont-17** Possible lost Ionic[?] capital for a monumental column at Kolonna, Aegina.

Material : Aeginetan limestone [column] and Cycladic marble [sphinx].

Date: 620 BC [column shaft flutes [Ionic style] and style of sphinx hypothetically connected with column] (Walter-Karydi, 1994, p.128 and Note 6; Also Walter-Karydi, 1987, p.49). If this date is incorrect, the fluting of the column would make the column at least contemporary with the Aphaia sphinx column, and due to the shallower fluting even slightly earlier. Description reference: Column: Walter-Karydi, 1994, p.125-8, Fig.3-4. Sphinx: Walter-Karydi, 1987, p.49 (This sphinx is the first monumental example in Hellas).

Note: Because of the excellent fit of the sphinx hind-quarters with the capital of the Ionic sphinx column from the Aphaia sanctuary, Gruben (1965, p.187 and Note 22) used it for his Aphaia reconstruction. Because of this Walter-Karydi (1994, Fig.4) *mutatis mutandis* reconstructs the Kolonna column to the likeness of the Aphaia column of Gruben, but we have no proof that the sphinx statue and the Kolonna column belong together, and none regarding the form of the support [capital?] for a statue, or a possible crown if there was no statue. In any event, the column is the oldest known Hellenic monumental column in stone, shows Ionic type fluting, and Ionic columns of this period and of this size would most probably be sphinx columns.

**Cont-18** Marble Aeolicising capital of a stander, Delos. Delos Museum.

Date: Gruben (1982b, p.184 Footnote 38) calls it Byzantine-archaistic. According to Kirchhoff (1988, p.140) a date as for the First Dipteros (to him 600 BC, which would now be *ca* 575 BC; See Hendrich, 1997, Note 314). There is nothing in his description to disprove Gruben's date.

Description references: Kirchhoff, 1988, p.216-7, 139, No.A4 and D, Fig.3.3.

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## OMISSIONS

Knowledge of certain capitals were only brought to the author's attention after completion of the analysis - my thanks to Prof. Dr. B. Wesenberg.

These capitals include the Aeolic capitals from Alazeytin (See W. Radt, *Siedlungen und Bauten auf der Halbinsel von Hallkarnassos*, *IstMitt* 3, 1970, p.23 flw, and currently in the garden of the Bodrum Castle), the newly found piece from Ilion (See *Studia Troica* 5, 1995, p.87, Fig.6-7), and the 'Arkades type' capital in the school courtyard at Foça (See *Akurgal, Anatolia* 5, 1960, Table 2b).

The effect of the inclusion of these three exemplars should be taken into account in future interpretation.



#### 2.3.4 The use of reconstructions of capitals

A delimitation accepted for this study requires that only those capitals, votive columns and buildings of which published information is available are interpreted. As mentioned in Chapter 2.3.3, not all the published information provides reliable quantitative data. The manner in which an indication of the level of reliability of data for reconstructed capitals is provided in the study has been dealt with. There is however a group of capitals which have not been visually documented, damaged capitals which have not been reconstructed, and capitals which have been photographed in such a way that taking reliable dimensions from the photograph is not possible.

The question is how such capitals may still be made useful in broadening the data base and gaining useful knowledge from them, rather than discarding them completely. Firstly, in the catalogue of Ionic capitals the author is explicit about the method used to gain dimensions. Some capitals are identified as being unusable for quantitative or qualitative analysis, but if they are deemed usable, there is an indication of the accuracy level of dimensions in Table 2.2, the fact that certain dimensions are not measurable from the artefact is identified in the catalogue, and the lack of morphological criteria are indicated in Table 2.1. Secondly, where good drawings of damaged capitals are available, or photographs that allow for completion of volute elements through geometric construction, such reconstruction is attempted. (Such drawings being included in the illustrations in Appendix 2), but again identifying the level of reliability in the relevant Tables. In the section dealing with volute geometries, the reliability level is likewise identified, and no reconstructions are attempted for those that are not reliable.

For the sake of completeness the author places new information regarding various capitals where permission was gained to inspect and photograph hitherto unpublished or poorly published capitals, even though the necessary permission to work with calipers could not be obtained due to restrictions beyond the control of the author. (These capitals, together with those capitals that have over time never been properly documented, are identified in the catalogue as candidates for re-documentation). The dimensioning and drawing of capitals Ion-10 (With permission from the *Ephoria* of the Cycladic region) was undertaken for this purpose. Other capitals of which certain dimensions have not been published, like Ion-15 and -21 (with permission of the Staatliche Museum Berlin), Ion-67b (with permission of the National Museum Athens) and capitals Ion-67, -68 and -70 from Paros (with permission of Dr Skillardi, Head of the Paros excavation) were photographed by the author. Comment regarding the accuracy of dimensions that are presented is stated in the catalogue. However, regardless of their nature, this information was retained in the study for the reasons previously stated, and because of their possible usefulness in other studies.

Capitals that are identified for immediate re-documentation are Ion-12, -13, -56, -65, -67b, -68, -69 and -76.

It is the author's serious intention to augment the more synthesising nature of the results obtained from this study through future rectification of data from personal contact with the artifacts. This is made possible by the exposure of the state of reliability of data in this study. In order to understand and evaluate the present inclusion of the abovementioned capitals in the more synthesising analysis, there is an attempt to establish the influence of the use of the more 'contaminated' quantitative data in Chapter 3.2.5.

### 2.3.5 Chronological ordering of capitals

After the identification and description of capitals, and evaluation and acceptance of dates in the text in Chapter 2.3.3 above, the Ionic, Aeolic, Cyma and Aeolicising capitals are ordered chronologically according to their currently seen, approximate chronological positions within 25 year periods in Table 2.3 below. Undated capitals which may be re-dated after the analysis, are indicated at the bottom. (One must remember though, as explained earlier (See 2.3.1.2 and 2.6.2.2) and as pointed out by Theodorescu (1980, p.82, 87-90), that due to the dating methodology often forced on researchers due to lack of contextual evidence, a degree of latitude regarding the accuracy of certain of the 7-6th Century BC capitals should be expected. The seeming preciseness of the chronological succession reflected in the chronological table is an effluent of the analytical process followed in the study and of the compactness of the table format; Nevertheless, the dates remain a reflection of the quality of current scientific endeavour in this regard. The user of the chronology includes the critical assessment of the accuracy of certain dates in Chapter 2.3.2.1, -2, -5, in the catalogue of capitals in 2.3.3 and the text hereafter, all of which acknowledge those instances where precision in terms of dates may be compromised. Apart from the known datum points, the established dates and where dates rely on contextual evidence. Even though there is a continuous striving for greater accuracy in this study, the acknowledgement should remain a tempering influence in this study and further deductions relying on the chronology, and should demand further corroboration in the future.

The datum of the artistic and architectural Ionic standard capitals are identified (See \* in Table 2.3 below, and discussion at 2.3.6). Capitals where established dates are present are printed in boldface and so identified. The chronologically ordered quantitative and qualitative aspects of Ionic capitals are also included in Appendix 1, Table 1.1 and 1.2 in spreadsheet format for further manipulation.

As a result of the chronological ordering, the identification of and dates for morphological innovations, form experiments, interim canonical phases and for a possible canonical form of the Ionic standard capital may be dealt with as part of the interpretation process in Chapter 3. Further discussion based on the chronological ordering of capitals is dealt with in Chapter 4.

Table 2.3 Chronologically ordered inventory of relevant Archaic non-standard Ionic, Aeolic, Aeolicising, cyma standard Ionic and torus capitals (625 up to 489 BC).

No.	ORIGIN	FUNCTION	DATE USED	DATE REFERENCE USED	No.	ORIGIN	FUNCTION	DATE USED	DATE REFERENCE USED
<b>625 to 600 BC</b>									
Preion-1	Delos	Artemision E (?) [Rectangular timber columns]	Before 600 BC	Gruben, 1996, p.64	Cym-5	Samos	Cells capitals, Heraion IV	[?]<522 BC	Pedersen, 1983, p.112
*Ion-1	Naxos [Artistic datum]	Votive column, Demeter and Apollo sanctuary, Sangri	End 7th C BC <u>estab</u>	Gruben, 1989, p.164	Cym-9	Samos	Inner ring cyma capital, Heraion IV	[?]<522 BC	Pedersen, 1983, p.112
[In Guben (1993, p.102) there is an assertion that it is from after mid 7th C BC]									
<b>600 to 575 BC</b>									
Preion-2	Didyma	Unknown building [Rectangular timber columns]	ca 600 BC	Gruben, 1996, p.63	Not made	Palati, Naxos	Temple 'A' [See capital Cont-1]	530-20 BC	Gruben, 1982a, p.229
Iver-3	Delos	Votive column, Delos.	Early 6th C BC	Kirchhoff, 1988, p.220	Ion-30	Athens	Votive column	530 BC >	Boardman, 1959, p.206
Iver-4	Delos	Votive column, Delos.	Early 6th C BC	Kirchhoff, 1988, p.14 [propr]	Ion-76	Athens	Votive column (Ameisias)	530-28 BC <u>estab</u>	Raubitschek, 1943, p.19
Ion-22	Aegina	Sphinx column, sanctuary of Aphaia	Early 6th C BC	Gruben, 1989, p.169, Note 25 Gruben 1993, Note 8	Ion-34	Athens	Votive column	ca 530 BC	Raubitschek, 1938, p.166
Ion-4	Naxos	Votive column, Delos.	Early 6th C BC	Kirchhoff, 1988, p.13 [propr]	Cym-10	Delphi [ex east lonia]	Klasoneseion Treasury, Apollo sanctuary	ca 528 BC	Gruben, 1961, p.135
*Ion-24	Naxos [Archit datum]	Interior capital (And pronaos), Naxian Oikos, Delos	< 580 BC	Ohnesorg, 1996, p.41	Cym-11	Delphi [ex west lonia]	Masiliot Treasury, Apollo sanctuary	>528 BC	Gruben, 1961, p.135
Aeol-1	Old Smyrna	Incomplete temple of Athena I	[ca 580] after Alyattes	Kuhn, 1986, p.80	Iver-6	Paros	Votive column, Thesmorphion, Paros.	ca 525 BC	Ohnesorg, 1993a, p.117
Ion-9	Naxos	Votive column, sanctuary of Demeter and Apollo, Sangri	580-70 BC	Kirchhoff, 1988, p.19	<b>525 to 500 BC</b>				
<b>575 to 550 BC</b>									
Tor-1	Samos	First Dipteros (Heraion III)	575 BC	Kienast, 1992; Hendrich, 1997	Ion-26	Chios	Temple of Apollo Phanaios [Started 550-25 BC]	525-500 BC	Boardman, 1959, p.184
Cym-8	Phocaea	Athenaion I	575-50 BC	Alkurgal, 1983, p.117	Ion-66	Delphi	Votive column [from Paros?]	525-500 BC	Hahlband, 1964, p.194
Aeol-3	Larisa (o-t-Hermos)	Building	575-50 BC	Betancourt, 1977, p.76, Pl. 42	Ion-72	Cyrenaica, N Africa	Rock cut tomb	525-500 >	Boardman, 1959, p.208 and Mason, 1978, p.169
Ion-7a-b	Iria, Naxos	Temple of Dionysos IV [Bldg start 580 (-575) BC]	570 BC	Gruben, 1989, p.172; 1993, p.104	Ion-67	Athens	Votive column, akropolis	520 BC	Theodorescu, 1980, Pl.1 and Mason, 1978, p.155
Ion-6	Delphi	Naxian sphinx column, Delphi	570-60 BC	Amandry, 1933, p.26, 31, 199 and Gruben, 1993, p.104	Ion-35	Athens	Votive column, akropolis	ca 520 BC	Bormann, 1988b
Ion-11	Delos	Capital found in the Competalist agora, Delos.	575-50 BC	Kirchhoff, 1988, p.24 (propr)	Ion-81	Athens	Votive column, akropolis	ca 520 BC	Mason, 1978, p.158
Cym-2	Didyma (Jeronda)	Votive column	575-50 BC	Kirchhoff, 1988, p.198	Ion-12	Smyrna	Votive column, Halikarpinar, Smyrna	[c?] 520 BC	Gruben, 1963, p.174. note 168
Cym-3	Didyma	Votive column	575-50 BC	Kirchhoff, 1988, p.199	Ion-36	Athens	Votive column (Alkimachos)	520-10 BC <u>estab</u>	Jacob-Felsch, 1969, p.119 and Raubitschek, 1940, p.18
Cym-14	Paros	Votive kouros column	575-50 BC	Ohnesorg, 1993a, p.111	Ion-42	Massalia	Architectural	520-10 BC	Benoit, 1954
Ion-10	Paros	Votive column (sep <i>canalis</i> ), A. Katapoliani, Paros	570-50 BC	Ohnesorg, 1993a, p.113	Ion-32	Delos [Naxian ?]	Cornier capital Propylon II	520-500 BC	Gruben, 1997, p.368
Ion-18	Delos	1st Naxian sphinx column from the Artemision of Delos	570-50 BC	Ohnesorg, 1993a, p.113	Ion-27	Delos [Naxian ?]	Inner capital, Propylon II (ac 'Nieborow', Warsaw)	As Ion-32, or 500-BC	Gruben, 1997, p.370
Ion-19	Delos	2nd Naxian sphinx column from the Artemision of Delos	570-50 BC	Ohnesorg, 1993a, p.113	Ion-48	Delos [Naxian ?]	Outer capital, Propylon II (found Phcia, Olympia)	As Ion-32	Gruben, 1997, p.370
Ion-20	Delos	Votive column (theatre)	ca 560 BC	Ohnesorg, 1993a, p.113	Ion-37	Posidonia-Paestum	Athens temple	510-500 BC	Kirchhoff, 1988, p.40 and Theodorescu, 1980, No.74
Cym-13	Delphi	Cnidian Treasury	ca 560 BC	Martin, 1973	Ion-52	Thasos	Anta column of an unidentified temple	510-460 BC	Martin, 1972, p.323
Ion-16	Ephesos	Artemision 'D'	<550 BC	Gruben, 1961, p.135	Ion-53	Thasos	Anta column of an unidentified temple	510-460 BC	Martin, 1972, p.323
Ion-5	Naxos	Proton (east) of the Naxian oikos, Delos	Just < 550 BC	Bammer, 1984, p.76 and Fig.84	Aeol-6	Klopodi or Mytilene	Temple at Klopodi or Mytilene	Late 6th C BC	Betancourt, 1977, p.87, Pl. 50
Lost	Naxos?	Column of Athena Polias, Delos	Just <550 BC	Courbin, 1987, p.74	Ion-51	Miletos-Thessaloniki	Dionysios temple	Late 6th Cent BC	Bakalakis, 1963, p.31
Cym-1	Naukratia, Egypt	Apollonion I / votive column	Just <550 BC	Gruben, 1989, p.166, Note 12	Ion-63	Miletos	Votive column	Still 6th Cent BC	Koenigs, 1980, p.58 [propr]
Tor-2	Didyma	Limestone phase Didymeion [Start bldg ca 600 BC by Schneider (1996, p.83) contextual: <550 BC]	< 550 BC	Pedersen, 1983, p.116	Ion-38	Thasos	Votive column	End 6th Cent BC	Kirchhoff, 1988, p.42 [propr] [Martin (1982) = 510-480 BC]
<b>550 to 525 BC</b>									
Aeol-2	Nesandria	The temple, Nesandria (Acropolis)	ca 550 BC	Wiegartz, 1994, p.125	Ion-40	Gela	Building	End 6th Cent BC	Barletta, 1983, p.249
Aeol-9	Aegae (Pergamon)	Possibly a temple.	As Aeol-2	Rack, 1991, p.482	Ion-43	Miletos [Milet city]	Architectural	End of 6th Cent BC	Koenigs, 1979, p.194
Iver-2	Paros	Peripteranterion	ca 550 BC	Ohnesorg, 1993a, p.117	*Ion-75	Athens	Kekrops column [?] (north wall akropolis)	ca 530	[See Boardman, 1959, p.206]
Cym-12	Paros	Votive <i>kyros</i> column	ca 550 BC	Ohnesorg, 1993a, p.111	Now placed as Late Archaic by Korres (1997, p.95)				
Cym-4	Thasos [?]	Probably a votive <i>kyros</i> column, Delos	Mid 6th Cent BC	[Kirchhoff, 1988, p.200]	Ion-60	Phocaea	Rebuilt Athenaion II	End of 6th Cent BC	Alkurgal, 1985, p.117 [contexted]
Ion-23	Thasos	Votive column	Mid 6th Cent BC	Kirchhoff, 1988, p.28-9	Aeol-7	Ereosus	Unknown architectural application	550-500 > BC	Betancourt, 1977, p.88.
Ion-17	Paros	Votive column (Archilochos/Ag Triis Eklesias)	ca 550 BC [?]	Ohnesorg, 1993a, p.114	<b>500 to 480 BC</b>				
Ion-69	Paros	Votive column, Paros (Modern wall antique city)	as Ion-17	Ohnesorg, 1993a, p.115	Ion-77	Speculative	In axis temple/treasury, Labrynda [Mylasa]	ca 500 BC	Thieme, 1993, p.49-50
Aeol-4	Larisa (o-t-Hermos)	Old Palace (building B), Larisa (On-tho-Hermos)	550 BC	Martin, 1973, p.377	Ion-80	Miletos/Didyma	Votive lion column [Mikros], unknown site.	ca 500 BC	Koenigs et al (1978/80, p.164)
Iver-12	Delos	Votive column	550 BC	Betancourt, 1977, p.76	Ion-58	Samos	Complete entablature Heraion IV [Start-up 540 BC]	2nd phase 500>BC	Kienast, 1992, p.186
Ion-14	Kyrene	Sphinx column of Kyrene	550 BC >	White, 1971, p.52	Ion-59	Samos	Monopteros II [If linked to the Heraion IV 2nd phase]	500>BC	Kienast, 1992, p.188-9
Ion-15	Myus	Lower temple	ca 550 BC	Weber, 1967, p.139	Ion-61	Syracuse	Ionic temple in the Athena sanctuary	500>BC	Barletta, 1983, p.88-90
Ion-64	Sangri, Naxos	Votive column	ca 550 BC	Gruben, 1989, p.169	Ion-44	Ephesos	Temple (found St John Basilica, Selcuk)	500>BC	Linked to Ion-77, Ion-59
Iver-11	Oropos	Votive column	Just > mid 6th C BC	Kirchhoff, 1988, p.216	Cym-6	Didyma	Votive column	ca 500 BC	Kirchhoff, 1988, p.201
Iver-7	Athens	Votive column, Athens.	550-500 BC	Betancourt, 1977, p.100.	Ion-31	Selinus	Votive column	ca 500 BC	Theodorescu, 1974, p.46[typolog]
Iver-8	Athens	Votive column, acropolis	550-500 BC	Betancourt, 1977, p.102.	Ion-56	Tamassos, Cyprus	(prob) votive column (later game table)	Early Fifth Cent BC	Kirchhoff, 1988, p.54 [propr]
Ion-45	Miletos (Yeniköy)	Temple (?)	ca 550-500 BC	Koenigs, 1979, p.189	Cym-7	Samos	Votive column	Early Fifth Cent BC	Buschor, 1957, p.20
Iver-9	Athens	Small building or sanctuary on the acropolis	550-525 BC	Betancourt, 1977, p.104.	Ion-39	Histria	Temple 'A' (Zeus Potisus?)	500-490 BC	Theodorescu, 1968, p.285
Ion-29	Ephesos	Temple (found in the Byzantine aqueduct)	550-25 BC	Kirchhoff, 1988, p.87 and Theodorescu, 1980, Tab.1, No.2	Ion-46	Metapontum	Temple 'D'	500-490 BC	Martens, 1979, p.128, 138-9
Ion-74	Athens [+East lonia]	<i>Emmenouros</i> in the Athenian agora	550-25 [40-30] BC	Merrit, 1982, p.88, 92	Ion-50	Napoli	Temple of Artemis	500-480 BC	Roux, 1961
Aeol-5	Klopodi	Late archaic (Apollo?) temple, Klopodi.	Last 3rd 6th BC	Betancourt, 1977, p.83.	Ion-55	Halikarnassos	Free-standing anta column	500-480 BC	Martin, 1959
Ion-25	Delos	Naxian stoa	550-40 BC	Martin, 1972, p.314	Ion-54	Larisa (O-t-Hermos)	<i>Megarombas'</i>	Late Archaic	Martens, 1969, p.134
Ion-82	Didyma	Votive column	< Ion-28	Gruben, 1963, p.142	Ion-78	Miletos	Uncompleted Temple (Mengerevtepe, Milet)	ca 500 [< 494] BC	Weber, 1996, p.86
Ion-73	Samos	Anta capital of South temple	545-35 BC	Furtwängler et al (1989, p.61)	Ion-21	Athens	Votive column (?) [Berlin 997]	<489 BC	Raubitschek, 1938, p.170
Iver-13	Athens	Votive column [No.3847]	540 BC	Raubitschek, 1938, p.164	Ion-62	Athens	Votive column (Nike of Callimachus)	490-89 BC <u>estab</u>	Jacob-Felsch, 1969, p.127
Ion-28	Didyma	Didymeion/Apollonion II (Building start 550 BC)	ca 540-30 BC,	Tuchelt, 1991, p.21	[Note: These Archaic capitals not placed due to lack of knowledge regarding dates or place of origin are so indicated in the catalogue. Ion-10, -41, -57 and -68 are not placed chronologically, but their dates are locked into after the analyses. Ion-13 and -41 cannot be placed chronologically. Due to a lack of precise dating Cym-14, -15, -16, -17 and Iver-10 can also not be placed here. Iver-10 can also not be placed geographically]				
Iver-5	Paros	Votive- or architectural	Before frieze 540-30 BC	Schattner, 1996, p.41 Ohnesorg, 1993a, p.116					

### 2.3.6 Geographical ordering of capitals

The geographic ordering of relevant early Ionic capitals is undertaken in two different ways: Firstly, all the non-standard and standard Ionic and Aeolicising capitals up to 525 BC are geographically and chronologically ordered according to geographical provenience for the sake of discernment of broader trends during the delineated founding period in the Archaic era and to facilitate future determination of geocultural aspects. This is done in two ways: In Appendix 1, Table 1.3 and 1.4, in which the quantitative and qualitative aspects, respectively, are given in spreadsheet format for manipulation, as well as in Table 2.4 below, where functional contexts are shown to increase insight and to prevent duplicative work later (Namely Pre-datum Ionic temple (PrITmp), Pre-datum Ionic building (PrBldg), votive column (IVc), -temple (ITmp), -shrine (IShr), -stoa (Istoa), -fountain-house (IFh) or -tomb (Itmb)), or for Aeolicising capitals (Namely votive column (Avc), -stander (AStd) or -shrine (AShr)). The symbol \* indicates the place of manufacture.

The following finely grained geographical ordering in Table 2.5 below relies on knowledge re links between colonies and their mother cities, between religious centra like Delphi, Delos and Branchidae-Didyma with their centres of origin, and from identification of design ateliers where known. This is only done for first generation Archaic capitals up to 525 BC, in order to provide suitable data for typological analyses regarding geographically related design tendencies in the first phase of the founding of the capital. (More detailed research regarding interim typological phases of capital design in the Archaic period after 525 BC is excluded from this study).

### 2.3.7 A datum for the Ionic standard capital

#### 2.3.7.1 External evaluation of the identified datum point of the Ionic capital

Reliable confirmation of the coming into being of the first Ionic capitals from contemporary written sources is impossible due to the lack of any such documentation (See Philipp (1968); Kostof in The architect. Chapters in the history of the profession, 1977, p.17 ); Coulton (1977, p.15); Onians (1988, p.3); Wesenberg (1983; 1996) in this regard). The oldest surviving architectural source, namely Vitruvius (1955 [50 BC], paragraph iv.i.vii) does not mention any Ionic votive column, and furthermore does not acknowledge any Ionic building before the Artemesion at Ephesos - which he, if he refers to phase 'D', erroneously holds as the first .

From Oliver-Smith's (1969, p.148) exhaustive study the first artistic reference to a functional Ionic capital in non-architectural context (ie furniture decoration) dates to 560 BC, and the first reference to the capital in architectural context, to 520 BC. Other early artistic references to the capital form are identified in the work by Blundell (1995, Fig.22, p.221; The date being *ca* 520 BC), Dunkley (1939, p.161-3, Fig.6), Schefold (1966, Fig.79; The date for the hydria showing the furniture with upside down capital being 570 BC), Beazley (1912-3, p.246, Fig.1-4; The date for the vase showing an altar with the typical Ionic canal is 530 BC onwards), Akurgal (1961, Fig.20; The date for the Ionic architectural columns on the sarcophagus No.267, Samos Museum, is known to be between 575-560 BC, very close after the conception of the Order) and Wehgartner (1983, No.B595, Plate 9, Fig.9; The date is 570-60 BC) do not upset the datum point of the Ionic capital as stated in 2.2.9.3 above. However, the early acceptance of the form in earthenware decoration and other functional artifacts is indicated by the dates concerned. Howe's (IDO, p.268) similar inquiry regarding representation of the Doric Order has resulted in a similar result, namely that there is no representation of the Doric capital or the Order before its emergence in 600 BC. It is deemed to be of great importance to the study that no depictions of Ionic buildings occur in Early Archaic Orientalisation earthenware decoration before 575 BC, which surely would have happened if such works existed in either timber or stone formats.



Table 2.4 Geographically and chronologically ordered Ionic and Aeolicising capitals 625-525 BC.

WEST IONIAN	MAINLAND	N.AFRICA	ISLAND IONIAN	EAST IONIAN
<b>625 to 600 BC</b>			Preion-1, Delos - PrITmp Ion-1, Iria, Naxos - IVc (Established date)	
<b>600 to 575 BC</b>			Preion-2, Didyma - PrIBldg Iver-1, Delos - AStd Iver-3, Delos - AVc  Ion-4, Delos - IVc Iver-4, Delos (*Naxos)- AVc Ion-24, Delos - ITmp Ion-9, Sangri, Naxos - IVc(?)	Tor-2, Didyma - ITmp
	Ion-22, Aegina - IVc			Tor-1, Samos - Itmp
<b>575 to 550 BC</b>			Ion-7, Iria, Naxos - ITmp Ion-6, Delphi [ex Naxos] - IVc Ion-11, Delos - IBld? Ion-10, Paroika, Paros - AVc Ion-18, Delos - IVc Ion-19, Delos - IVc Ion-20, Delos - IVc  Ion-5, Delos - ITmp Lost, Athena Polias - Naxos? - IVc Tor-1, Samos - Itmp	Ion-16, Ephesos - ITmp
<b>550 to 525 BC</b>			Iver-2, Paros - Perirhanterion Ion-23, Thasos - IVc Ion-17, Paroika, Paros - IVc Ion-69, Paros - IVc Iver-12, Delos - AVc  Ion-14, Kyrene - IVc  Ion-64, Sangri, Naxos - IVc	Ion-15, Myus - ITmp
	Iver-11, Oropos - AVc Iver-7, Athens - AVc Iver-8, Athens - AVc  Iver-9, Athens - AShr(?)  Ion-74, Athens [e.Ionia] - IFh			Ion-45, Miletos [Yenikoy] - IBld(?)  Ion-29, Ephesos - IBld(?)
			Ion-25, Delos - IStoa	Ion-82, Didyma - IVc Ion-73, Samos - ITmp Ion-28, Didyma - ITmp
	Ion-30, Athens - IVc Ion-76, Athens - IVc [Established date] Ion-34, Athens - IVc		Iver-5, Paroika, Paros - AVc Uncompl [Cont-2], Palati, Naxos - ITmp Lost [Cont-1], Temple A, Paros -ITmp	
			Ion-6, Paroika, Paros - AVc	

Note: Capitals that cannot be geographically put are Iver-10, Ion -66, -77.

Table 2.5 Finer grained geographically and chronologically ordered Ionic and Aeolicising capitals 625-525 BC.

Unknown	WEST IONIAN	MATILAND	NAFRICA	ISLAND IONIAN		MILESIAN		EAST IONIAN	SAMIAN
Unknown	SICILY	ATTICA	ARGINA	Kyrene	PARIAN	NAXIAN		EPHESIAN	
625 TO 600 BC									
Preion-1, Delos - PriTemp [Unknown origin]						Ion-1, Iria, Naxos - IVc [Established date]			
600 to 575 BC							Preion-2, Didyma - Pri bldg		Iver-1, Delos - AStd [Samos?]
Iver-3, Delos - AVc [Unknown origin]				Ion-22, Aegina - IVc		Ion-4, Delos - IVc [ex Naxos] Iver-4, Delos (*Naxos)- AVc Ion-24, Delos - ITmp [*Naxian building] Ion-9, Sangri, Naxos - IVc			
575 to 550 BC							Tor-2, Didyma - ITmp		
					Ion-10, Paroika, Paros - AVc	Ion-7, Iria, Naxos - ITmp Ion-6, Delphi [*Naxos] - IVc Ion-11, Delos - IBldg? [Ex Naxos] Ion-18, Delos - IVc [Ex Naxos] Ion-19, Delos - IVc [Ex Naxos] Ion-20, Delos - IVc [ex Naxos?] Ion-5, Delos - ITmp [Naxian building] Lost, Naxos? Athena Polias - IVc			Tor-1, Samos - ITmp
550 to 525 BC					Iver-2, Paroika, Paros - A Perihalterion Ion-23, Thasos - IVc Ion-17, Paroika, Paros - IVc Ion-69, Paros - IVc				
Iver-12, Delos - AVc [ ]				Ion-14, Kyrene - IVc		Ion-64, Sangri, Naxos - IVc	Ion-15, Myus - ITmp		
	Iver-11, Oropos - AVc Iver-7, Athens - AVc Iver-8, Athens - AVc Iver-9, Athens - AShr (?) Ion-74, Athens [E.Ionia] - IFh						Ion-45, Miletos [Yenikoy] - IBldg (?) Ion-29, Ephesos - IBld(?)		
						Ion-25, Delos - IStoa [Naxian building]	Ion-82, Didyma - IVc		Ion-73, Samos - ITmp
					Iver-5, Paroika, Paros - AVc		Ion-28, Didyma - ITmp		
						Uncompl, Palati, Naxos - ITmp [Lost, Temple A, Paros - ITmp]			
	Ion-30, Athens - IVc Ion-76, Athens - IVc [Established date] Ion-34, Athens - IVc								
						Iver-6, Paros - A Thesmothorion			

Note: Capitals that cannot be geographically put are Iver-10, Ion -66, -77..

As mentioned in Bakker (1992) the above-mentioned domestic use of the capital motif in the Tyrrhenian and Corinthian spheres 50 years after its artistic conception may lead to varying conclusions. The motif might have been known almost simultaneously in the latter and the Naxian/Parian/Samian spheres, or otherwise the early use of the motif in the sanctuary of Delphi might have made it acceptable and available to the non-Ionian spheres. The acceptance of the motif in the Tyrrhenic vocabulary is not strange: We know that Corinth, like Naxos, took the lead in the Orientalising process of the arts (Robertson, 1975, p.24), and the Doric Tyrrhenic sphere was closely linked with the Cyclades. It seems then that the motif was available but did not find the same common use as in the Ionian sphere. However, the later Sixth Century Athenian secular architectural application of the capital motif in stoas and fountain houses, seen together with the Corinthian vase decoration of an Ionic capital as fountain stand (Dunkley, 1939, Fig.6) and allegedly with Athenian religious votive columns (The Keklopien column [?]) and Athenian temples (The pre-Parthenon [?]) on the acropolis, serve as indicators to the widespread embracement of the Ionic style in the Athenian sphere.

#### 2.3.6.2 Self-referential evaluation of the datum

One of the tasks the author had initially set out to do was to define the datum point of the complete, stone Ionic capital (See \* in Table 2.3 above). The oldest extant fully formed stone Ionic standard capital that may be identified is part of the sphinx colonnette (See capital Ion-1; Column Col-1) dedicated to Apollo, at the Apollo and Demeter sanctuary at Sangri, Naxos. The event happened in the last decade of the Seventh Century BC and is underscored by epigraphic evidence on the capital. This capital remains the benchmark from which prior and further evolution is discussed.

## 2.4 PHYSICAL CONTEXT OF AN EVOLVING IONIC ARCHITECTURAL CAPITAL UP TO 525 BC AND OF RELEVANT VOTIVE COLUMN CAPITALS

### 2.4.1 Achieving a relevant data base of buildings and votive columns

The catalogue that follows describes relevant buildings and votive columns before the artistic datum of the Ionic standard capital, ie the Sangri colonnette, and the architectural datum of the Ionic standard capital, ie the Naxian *Oikos*, and then the stone buildings from the architectural datum on until 525 BC - as delineated to test hypotheses re early capital form - in terms of their description sources, accepted dates and related debate and inquiry, their material, place of provenience and explanatory notes. Quantitative description of the main elements of the façades of Archaic Ionic buildings only is provided in Appendix 1, Table 1.5 (Space limitations prohibits provision of façade and plan drawings). Where sources were unobtainable for use they are indicated with [~] and included in the catalogue, in order to enable further research. An index for the catalogue of buildings is provided below to facilitate its use:

Index	Artifacts within which capitals appear	Page No.
2.4.1.1	Catalogue and description of relevant <u>buildings</u> before the architectural datum of the stone, Ionic standard capital.	65
2.4.1.2	Catalogue of relevant free-standing columns before and during the architectural datum of the stone, Ionic standard capital.	69
2.4.1.3	Catalogue and description of Ionic buildings from the architectural datum of the stone, Ionic standard capital to 525 BC [The foundational phase or first generation]	71
2.4.1.4	Catalogue of relevant Aeolic buildings before and during the architectural datum of the stone, Ionic standard capital.	79
2.4.2	Chronological ordering of buildings from the Ionic sphere up to 525 BC	81
	Table 2.6 Chronologically ordered buildings from the Ionic sphere up to 525 BC	81

2.4.1.1 Catalogue and description of relevant buildings before the architectural datum of the stone, Ionic standard capital.

**Bld-1a** Heraion I Samos (Naos)

Date: Start 8th Cent BC (Kienast, 1996, p.16)

Note: This building is held as the first Hellenic temple building.

Capitals: Not extant.

**Bld-1b** In-antis *Hekatompedos IA*, Samos

Date: ca 700 BC (Kienast, 1996, p.16).

Note: The supposed surrounding timber colonnade for Phase I (Buschor, 1930, p.13ffw, Fig.4-5, Beil.2; [-] Buschor-Schleif, 1933, p.152, Fig.3-4, Beil.47.3; Drerup, 1969, p.13, Fig.11-12; Kalpaxis, 1976, p.17-26, Fig.1; Mallwitz, 1981, p.624-33, Fig.16, 24; Ainan, 1988, p.117, Note 45) has been discredited from a re-analysis of the documentation of the remains by Kienast (1996, p.23). So conferred by Gruben (1996).

Capital: Not extant.

**Bld-1c** Prostyle *Hekatompedos II*, Samos

Date: ca 660 BC (Kienast, 1996, p.16)

Note: The supposed surrounding timber colonnade for Phase II (Buschor, 1930, p.35, Fig.7, 13; [-] Buschor-Schleif, 1933, p.154, Fig.5; Gruben, 1966, p.317-8 [Incl plan]; Drerup, 1969, p.14, Fig.12; Kalpaxis, 1976, p.35-7, Fig.17-18; Kyrieleis, 1981, p.79-80, Fig.56; Mallwitz, 1981, p.624-33) has been discredited by Kienast (1996, p.23) from a re-analysis of the documentation of the remains. Gruben (1996, p.62-3) also cannot prove the existence of a surrounding colonnade, but says the Lefkandi, Mazaraki and Ephesos examples are now asking for new examination of the issue.

Capital: Not extant

**Bld-2a** Stone *sekos* I [Artemision 'A'] with timber surrounding colonnade, Ephesos

Bammer (1990, p.136-60, Fig.14; 1991, p.73-5, Fig.21) has identified an Eighth Century BC surrounding timber structure around the outside of a stone *sekos* wall (Artemision 'A') [ie like a U-formed 'stoa'], which in its turn enclosed a monopteral baldachin for the cult statue. Bammer's (1990, Fig.14,

p.148) work shows this *sekos* underwent a series of

reconstructions [Phases 3-4] up to the time of the renewal of the temple by Kroisos (Artemision 'D'). Lambrinoudakis (1996, p.60) believes Phase I to be a flat roofed enclosure, as Bammer's (1990, Fig.30) version of it. Due to the open nature of the *sekos* type, the open version in Bammer's drawing seems more probable.

Capital: Not extant

**Bld-2b** Stone *sekos* II [Artemision 'B'] with higher peripteros, Ephesos.

Date: [not provided] - exists till Kroisos temple phase 'D' (Bammer, 1991)

It is important to note that the peripteral *sekos* (Artemision 'B') existed before the erection of the ca 600 BC north-south orientated, non-peripteral marble *Hekatompedos* [See Bld-15] at its west side (Bammer, 1984, Fig.83; 1991, Fig.1) showing the origins of the surrounding timber colonnade on this site. We deal here with a lean-to around a U-shaped *sekos* wall rather than around a closed building, as well as with a baldachin formed by a colonnade, rather than the peripteral *oikos* form-type which asks for a formalised stone colonnade.

Capital: Not extant

**Bld-2c** Anta *sekos* and naiskos, with no peristyle [Artemision 'C'], Ephesos.

Date: 600-90/80 BC [\*do ck] (Bammer, 1984, p.172, Fig.83). Tölle-Kastenbein (1994, p.43-4, Fig.6) reports that Phase 'C' took place somewhere between the time of the Seventh Century BC flooding [Not a Cimmerian attack] of the Artemision 'B' and Phase 'D' [See Bld- 2c] in ca 560 BC, and her time frame is during 600-590/80 BC.

Notes: Bammer (1984, p.172 and Fig.83) thinks Phase 'C' was an anta building with a *naiskos*. Tölle-Kastenbein (1994, p.52) proposes that this phase was an octastyle peripteral *sekos* which peristyle later provided the foundations for the enlarged *dipteros* of Phase 'D' [Her suggested interaxial distances between columns indicate for her the use of stone construction for the peristyle]. Her argument, namely that we can only conceptualise the Artemision 'C' as a *peripteros* due to the proven existence of a peripteral predecessor [See Bld-2a] and a dipteral follower [Bld-2c], is a theoretical construct and remains hypothetical.

Capital: Not extant



**Bld-3a** Dionysos Temple I, Iria, Naxos (A 2 aisled, stone + timber *oikos* with flat timber + earth roof)

Date: From 8th Cent BC (Gruben, 1996, p.67).

Description: Lambrinouidakis, 1996, p.55-56, Fig.1 [Plan].

Capital: Not extant

**Bld-3b** Dionysos Temple II, Iria, Naxos (A 4 bay hypostyle of stone and timber)

Date: 2nd half 8th Cent BC (Gruben, 1996, p.67).

Description: Gruben, 1996, p.65, Fig.6.I; Lambrinouidakis, 1996, p.55-56, Fig.1 [Plan], 2 [Column base].

Note: Four aisled with three colonnades of 5 timber columns each [With columns on flat stone plates level with the ground], like a 'hypostyle hall' later to be repeated at the Eleusis Telesterion.

Capital: Not extant

**Bld-3c** Tetrastyle prostilon (stone and timber) Dionysos temple Phase III, Iria, Naxos.

Date: ca 700 BC Gruben, 1993, p.102; Lambri-noudakis (1996, p.55) says 680 BC.

Description: Gruben, 1996, p.67, Fig.6.II; Lambri-noudakis, 1996, p.57-60, Fig.3 [Marble spout with cavetto moulding], 4-5, 7 [Prostyle detail].

Notes: Phase III keeps the three outer walls, but changes to a 3-aisled layout with two new colonnades on new, raised bases [these are more formalised and consciously articulated as 'columns'], to provide a central hearth with baldachin/lantern. Gruben (1996, p.67) believes these columns to have had voluted timber bracket capitals and the columns with bulging tops. The total column is deemed to be the godfather of the Sangri colonette [Ion-1 of ca 100 years later]. Importantly the temple gains a tetrastyle front prostyle of timber [both columns and entablature] with columns on stone bases on a continuous, raised strip stylobate.

Capital: Not extant (See Gruben, 1996, Fig.4 and 6.II).

**Bld-4** The (timber + mud on stone foundations) prostyle Apollonion (Daphnephorion) Phase I, Eretria, Euboea.

Date: Eighth Cent BC (Auberson, 1968, p.8).

- Auberson (1968, p.9, 15)), in his reconstruction, claims the existence of a peristyle building following Phase I, in the form of the Phase II in 670-50 BC. His reconstruction shows a *hekatompedos* type with timber surrounding colonnade but without a central colonnade. Kalpaxis (1976, p.30-34, Fig.9-12), like Auberson, is also adamant that it had a stylobate and a surrounding colonnade. Mallwitz (1981, p.634) however contests the existence of the colonnade. Phase II is not accepted in this study.

- The foundations of the Eighth Cent BC Phase I Geometric Apollonion (Auberson, 1968, p.9) indicate the existence of a prostyle portico like the models of the Geometric Heraion of Argos and of Perachora (Auberson, 1974, p.60, Fig.3-4). The reconstruction (Also in Mallwitz, 1981, p.608, Fig.8a-b) shows a small timber and mud wall *oikos* on stone foundations, but having small projecting *antae* and round columns in prostyle arrangement, very slender and not likely to

have supported anything like a capital. This building is more of the *pfostenbau* type, with the proposed prostyle construction being of the latched type. The internal timber columns are also round, but around the *oikos* wall they are used more as wall support framework. It is clear that no kind of articulate form relevant to this study could have been present, and that there was no monumentalisation through rational design devices.

Capital: Not extant

**Bld-5** Hearth Temple, Tsikalariou, Naxos.

Date: Geometric (Drerup, 1969, p.21).

The temple is described by Drerup (1969, p.21, Fig.17). It was a hearth temple with a western entrance, but there is uncertainty whether it was an *anta* temple or a bilobal *oikos*. The non-axial timber columns rested on wide standing plates, and the foundation for the walls were of ashlar stone with rubble infill (There is no knowledge of the stone technique employed for the upper parts). Capital: Not extant.

Note: No remains of a temple is indicated for the Geometric Grotta site at Naxos (Lambrinouidakis, 1988, p.243-5).

**Bld-6a** The stone *Sekos I* (Didymeion I) Didyma, [with timber peripteros?]

Date: Ca 700 BC Tuchelt, 1987a., *sine pag*, Fig.2a, 4.

The *Sekos I* or *Didymeion I* may have had a timber peristyle (Gruben, 1963, p.177), although one can understand that traces of this would have been completely wiped out by the subsequent phases.

Tuchelt (1991, p.20) questions the existence of a baldachin structure for the Geometric *Sekos*.

Capital: Not extant.

**Bld-6b** Schneider's hypothesised Limestone Didymeion I, Didyma [Rather to be seen as an early phase of the Archaic marble Didymeion].

Date: There is no absolute clarity regarding the date of this phase, but it would have to be before the marble dipteros of 550 BC. Schneider (1996, p.83) would want to have it that a limestone temple was started by 600 BC and complete by 570 BC (To him the dating of the raking cyma of the pediment indicates this), five years before the First Dipteros at Samos was started. Whilst to him the excavations and remains clearly indicate a separate phase before the marble phase, there is currently no evidence for a building of the necessary size earlier than the Archaic Didymeion. To Schneider (1996, p.80, Fig.5-6) the limestone phase was a complete peripteral temple with torus capitals and indications of timber entablature, richly ornamented *tondach* (clay tiled roof), and with the limestone raking cyma clearly proving the existence of a gable front, with the oldest leaf cyma in stone (Earlier dated by Kirchhoff (1988, p.117, 122) at ca 570 BC or slightly later, as he thought this temple to have started at 590 BC). The indicated roof tiles are dated by Åkerström (1966, p.112) at between 575-50 BC. According to Schneider (1996, p.83), the Didymeion I underwent various phases of change up to the Didymeion II, but it is too early to know the form of the plan and its relationship between this and following temple. It might currently be

wiser to see these limestone fragments as an early phase of the Archaic Didymeion [Rather not to be called Phase II], with the torus capitals being part of its inner peristasis. Schneider (1996, p.80, Fig.4) shows the columns had 32 flutes, rather shallow, with sharp arris, and rounded at the top (Bottom not extant) [This is closer to the older Archaic designs]. The column also had (Flat) relief work at the top and carried a torus capital.

Capital: Tor-2.

**Bld-7** Athena Temple, Koukounaries, Paros.

Date: After 700 BC (Gruben, 1989, p.165).

The temple was a simple rectangular *oikos* without portico built over a preceding circular structure (See Aiman, 1988, p.113). It had an ashlar-with-rubble-infill foundation, and stone standing plates (Gruben, 1989, p.165) for the timber columns (Of unknown section).

Capital: Not extant.

**Bld-8** Timber South Stoa, Samos

Date: Second half of the Seventh Cent BC (Gruben, 1957, p.52, 61), slightly earlier than Coulton's (1976, p.280) date.

From Gruben (1957, p.52, 58, 60, Fig.1) we learn that the timber columns were not square but rectangular [140x190]. From his drawing we see the existence of flat foundation plates of rectangular form for the outer colonnade, some with rectangular hollows let into stone, and others with upstands, and for the inner colonnade there are no hollows for the posts. The building was composed of three similar sections, each 200 modular feet [1 ft = 349,75] long. Apart from this small example of modular design, nothing else shows up any form of conscious metrication. Gruben sees the whole building as being prototypical of Ionic construction form, and specifically the occurrence of base, column, capital and entablature with epistyle (Timber beam), dentil (Rafters) and cornice (The earth roof edging board). The reconstruction of the building with dentils remains conjectural. He (1957, p.54-5, 61) asks of us to think of the building's timber posts and bracket capitals in a very functional way, and in terms of this extreme functionality and rectangularity, together with the plain form of the bases, not to expect the capitals to have been decorated. However, he also thinks that this construction form evolved into one using round column timbers, from the bulb of which evolved the echinus.

Capital: Not extant

**Bld-9** Roofed [one-columned] in-antis Older Athena Temple, Miletos

Date: 620 BC (Kalpaxis, 1976, p.64, Fig.39-40). In a search for pre-Ionic work Kleiner (1968, p.38) has dated the Older Athena Temple (*Pronaon*) at the west Agora of Miletos (Archaic "Alt-Milet") to the Seventh Century BC (Previously Boardman (1959, p.59, p.208) could not date the temple). Like Kalpaxis, Mallwitz (1968, p.123) also dates the temple to 620 BC, which puts a finer date on Kleiner's date. The one in antis and two suspected naos columns described by Kalpaxis

(1976, Fig.39-40) is as Mallwitz's description (Istmitt, Vol.18, 1968, fig.2 [plan] and 12 [reconstr elevation]).

Although the temple is deemed to have had a flat mud roof, there is nothing to substantiate Mallwitz's stone entablature and Ionic Order for the in antis column. The only element extant is a rough 300 diam in situ column base [no question of a square or rectangular inset], which surely indicates a round column. The base is not shown in Mallwitz's reconstruction!

Capital: Not extant

**Bld-10** Temple 'A', Prinias, Crete

Date: 620 BC (Gruben, 1957, p.60).

Notes: Pernier (1934, Fig.2) shows Temple 'A' as an *in antis* temple [with square column and a stone frieze on a timber epistyle at the portico], and with internal round columns (3 aisled) with stone bases on standing plates, placed axially on both sides of a hearth. The use of a stone standing plate with attached base for a round timber column is confirmed by Gruben (1957, p.60, Note 18 [See his references]), who also sees the pre-form of the Ionic base in this example [The Cretan-Ionian architectural connection is seen as important]. Also of note is the existence of the voluted roof *acroteria* similar to Geometric models of shrines. Apart from the current acceptance of the placement of the frieze in the dado position (Mallwitz, 1981, p.620 [Position not at northern flank of portico]; Boardman, 1978, Fig.32.4), there are another alternative interpretations of the building. Mallwitz's (1981, p.619-20, Fig.20) indicates Beyer's 1976 alternative reconstruction of the temple as saddle-roofed, timber-framed construction on a stone base structure without a columnar outside arrangement as very probable, but criticizes the reconstruction of the sculptural stone door element. If Beyer is correct, the interior would also be of the half-framed timber construction kind. From the size of the architectural stone elements, from the definite indication of the use of stone bases attached to the standing plates, as well as from the craftsmanship of the stone relief work, there is a strong case to be made for a more traditional type of construction, with the hypothetical possibility of the existence of a stone capital form on substantial round timber columns.

Capital: Not extant.

**Bld-11** Timber framed South Stoa, Didyma

Date: End of the Seventh Cent BC (Akurgal, 1985, p.223, Fig.83 No.3), making it the oldest stoa in Asia Minor.

Gruben's (1963, Fig.5) drawing shows the use of round columns. According to a reconstruction in Tuchelt (1987a, *sine pag.*, Fig.6 (Drawn by R. Naumann)) one should rather see this stoa as a timber frame construction [Balkbau] than as half-timber construction. Last reconstruction shows rectangular vertical supports (like at the Samos South Stoa) supported on square standing plates. Tuchelt's roof shows a ceiling cum roof structure of round poles, supporting an earthen roof with timber edge details and no dentils.

Capital: Not extant.

**Bld-12a** Naxian *Oikos* 'I' [Courbin's "Pre-oikos"], Delos [Even though to be rather seen as 2 rather than 3 aisled *oikos*, this pre-phase is now deemed not to have existed].

Date: Pre-600 BC (Galette de Santerre, 1984).

Description references: Gallet de Santerre, 1958, Plan B; Gallet de Santerre, 1984 [Here the existence of this phase is deemed unassailable]; Courbin, 1987, p.65 (Gruben (1997, p.304, -6) cites Courbin (1980) as placing it before 650 BC).

Notes: There are two main streams of thought on this building: The Courbin school which promotes the idea of the existence of the pre-650 BC pre-*oikos*, and the Gruben school which sees the marble *oikos* as the 1st phase (Also see Gruben, 1997, p.306-9). All the reconstructions of the pre-*oikos* show the use of a timber double inner colonnade [Column section unknown] and no pronaos and no *antae* [But an aduton]. Lately Kalpaxis (1990, p.153) has suggested that the post holes for the supposed *Oikos I* double colonnade were for scaffolding, which removed doubts around the difficulties of construction of the upper structure of the central marble colonnade of a supposed *Oikos "IIa"*. The new reconstruction of the marble *Oikos* by Ohnesorg (1993b, No.2, p.9, 53, Table 3) also shown in Gruben (1996, p.70, Fig.9) confirms the central colonnade, but with beams running transversely, the colonnade construction then being integrally bound with wall construction in one phase [Scaffolding still useful, as shown]. The still experimental manner of the marble 'frieze' elements at the beam ends in the upper zone of the wall of the marble temple are more rudimentary than that of the marble Dionysos Phase IV temple at Iria, which could also indicate that a marble *Oikos* could have been constructed earlier and in one, single phase. The awkward roof junction between the main room and the portico posed by Courbin could suggest that the marble *Oikos "IIa"* had a pre-600 BC predecessor [albeit with a central timber colonnade and transverse timber beams], but even this idea is upset by the latest re-evaluations by Ohnesorg (1993b) and Gruben (1997). They reconstruct a building built in one phase, with complete and straight roof lines, and with marble in-antis portico and internal colonnade. Gruben's (1997, p.270, 286) argument also rests on re-evaluation of the sequence of the position of the *kouros* base, the condition of the *Oikos* north wall hard up against it, together with the position of *oikos* buildings in the temenos and gate construction.

Capital: Not extant: Never constructed.

**Bld-13** Unknown building of unknown typology, Didyma

Date: Ca 600 [From capital dating by Gruben (1996, Note 13).

A timber columned structure of unknown typology is assumed from Gruben's (1996, Note 13) designation of a capital from Didyma (Capital Preion-2, previously deemed to have been a roof acroterion (See capitals Excl-1 below), and which is now dated to ca 600 BC (due to similarities in detail with the votive column capital from Sangri [Ion-1]), and which is similar to the capital proposed for the Delian Artemision 'E' The

column/s of the building was/were of rectangular timber, capped by the stone Ionic canal capital. The whereabouts and detail of this building is unknown.

Capital: Preion-2.

**Bld-14** Tetrastyle prostyle stone [+timber?] Artemision 'E', Delos

Date: Ca 600 BC: Older than the Naxian *Oikos* {'IIa'}, according to Kalpaxis (1976, p.76). Kalpaxis calls the Older Artemision temple the 'Temple E' which is different from Drerup's (1969, p.24) description. Kalpaxis (1976, p.76, note 285) indicates that Vallois states that the early 7th Cent BC temple (His Temple 'E') gained a prostyle "Im 6. Jht". Vallois (1966b, p.48-9) and Gallet de Santerre (1958, p.253, 278) state that the Geometric Artemision at Delos was altered to become a prostyle temple [Artemision 'E']; Drerup (1969, Fig.21 [hatched]) date is slightly more than 100 years after its erection in 700 BC [ie early in the Sixth Cent BC, and preceding the erection of the Ionic in-antis façade of the Naxian *Oikos* at Delos and the Ionic prostyle of the Dionysos temple at Iria, Naxos].

Notes: The example from Delos shows the existence of the prostyle typology before the existence of the datum of the standard Ionic capital in the prostyle at the Naxian *Oikos* and the Iria temple IV. The possibility exists that the columns were of stone, but there is no certainty. The capital that Gruben (1996, p.64) tentatively proposes for this prostyle, namely capital Pre-ion I from the base of the Apollo *kouros* statue, clearly rested on a rectangular timber post, and was dated to 'before 600 BC' (Gruben, 1996, p.64), which would mean that the building had timber columns and was older than Vallois's, Gallet de Santerre's and Kalpaxis's dates of after 600 BC. If this was the case it means that timber columns were still commonly used at this late stage, but strangely here rectangular timber columns on round bases after Dionysos III at Iria already had round columns, indicating parallel traditions or an inability to put a [first?] stone Ionic bracket capital on a round column. We see here the use of a continuous stylobate [As before at Dionysos III at Iria] but here turned back to the cella.

Capital: [Preion-1?]

**Bld-15** The amphi in-antis [?] 'Marble

*Hekatompedos*', Ephesos (Naos).

Date: Ca 600 BC (Bammer, 1991, Fig.1).

Bammer (1984, p.174-183, Fig.82-3) indicates the existence of a marble (1984, p.207) *Hekatompedos* west of the Artemision at Ephesos (ie in front of it) by 600 BC. The midline of the 16,0 x 34,40 [100 ft] building with a proportion of ca 1:2 lay on the Artemision's axis. Even though Bammer (1984, p.179, 181) indicates the similarities in temple and altar buildings in the Early Archaic period, he argues against the building being an altar [He indicates the discontinuance of offerings there just at the time of the start of the Artemision 'D', the distance of the building to the Artemision 'C' and the existence of marble roof-tiles, deemed to have belonged to this building, as reasons for this]. There are however no remains of columns or column foundations, which still places a

shadow over Bammer's interpretation, leaving us with no example of Ionic stone colonnades before 600 BC. Capital: Not extant.

**Explanatory note:**

The 8-9th Cent BC timber columned baldachin for the *bomos* of Apollo at Delos (Gruben, 1997, p.409, Note 395), later enlarged as Archaic building No. GD39, is noted as a columnar timber structure, but is not listed as a building in the catalogue.

**2.4.1.2 Catalogue of relevant free-standing Ionic votive columns before and during the achievement of the architectural datum of the stone, Ionic standard capital.**

Note: There are no columns Col-2, -3 and -6.

**Col-1** Local Naxian marble Ionic sphinx colonnette dedicated to Apollo, from the Demeter and Apollo sanctuary, Sangri [Garoula], Naxos. Naxos Museum Date: At the end of the Seventh Century BC (Gruben (1989, p.164) accepts the epigraphical evidence from Kontoleon, which apparently is confirmed by Wörle [his translation and references cited in Gruben's text]). Other dates: Still in the Seventh Century BC (Orlandos in Kirchhoff (1988, p.137)).

Description reference: Gruben, 1989, p.161-72, Fig.1-2, Plate 19; Kirchhoff, 1988, p.137, No.A; Picard, 1955, p.293, Fig.18.

Notes: The capital and column are of one piece. The column apparently had a standing plate. The column bottom was let into a socket in the plate which rested on the ground, a common practice in the Cyclades and similar to Geometric/Early Archaic architectural bases.

- The capital probably carried a small sphinx (Gruben, 1989, p.164), the plinth of which was connected to the hollow on the capital bearing surface. The inscription on the capital shows that the column was dedicated to Apollo (Gruben, 1989, p.164; Walter-Karydi, 1994, p.128, Note 9).

Column dimensions: Gruben (1989, p.Fig.1-2). The ell was used as base dim for the column height (fixed base not included), and there is indication of use of a foot standard in the capital design.

- The column was found in the nearby church of Ag Georgios Lathrinis, Garoula, where it was used as prothesis. Presently it is housed in the Naxos Museum, Item No.8.

Capital: Ion-1.

**Col-4** Lost votive column, Delos.

This column is only suspected from the existence of its capital, Ion-4, and no further detail exists.

Date: The capital is dated to the early 6th Cent BC.

Capital: Ion-4.

**Col-5** Aeginetan poros sphinx column, Aphaia Sanctuary, Aegina (The Kolonna sphinx used for the reconstruction is of Cycladic marble).

Date: *Ca* 600 BC (Gruben, 1965, p.207; Gruben,

1989, p.169 and Note 25). Gruben\* accepts this column as being older than the columns of the Doric Heraion of Olympia and before the Doric peripteral Aphaion II of 570 BC (Gruben, 1965, p.180, 195, 200, 204, 207; 1989, p.169, Note 25). Kirchhoff's (1988, p.20) capital date is 550-40 BC. [\* Gruben's date rests additionally on evidence related to construction [The reparation of damage due to moving the column for the Temple III phase] and also to style considerations [Volutes, cyma, base]].

Description references: Gruben, 1965, p.173-90, Tables 2-3 [Column, capital, shaft and base], Beil.65-70 [Photographs], Fig.1 [Cockerell's drawing], Fig.2 [Fiechter's drawing]; Wurz & Wurz, 1925, Fig.242 [Reconstruction from Cockerell's drawing].

Dimensions: Gruben (1965, p.176, 187, 190, 198, Plate 2).

Notes:

- The column shaft had 36 hollow flutes (Gruben, 1965, Table 2), of deeper section than the Kolonna column. The capital, lost after 1811, was recovered in 1964.

- An Ell dimension of 523 was used as base dim for the total height. Other elements (Except for the lost base, reconstructed from the proportions of the Naxian example of Delphi by Gruben) show use of a Cycladic ft standard of 291,25 (close to that of Dionysos Temple Iria of 291,4, and of the Naxian column at Delphi. Gruben was unaware of this foot standard at the time of his reconstruction). Column height : column bottom diameter [above round beading] is 1:10,55 [10 ½]. Column reduction was achieved by placing the top and bottom column diam in a ratio of 2:3. The Doric foot standard used in the Phase II temple of Aphaia relates to a few elements in the column and capital.

- A supposed twin for this column at the Apollo sanctuary at Kolonna, Aegina (See Col-8 below), is argued to have been constructed in 620 BC (See Walter-Karydi, 1994), but the deductions there remain hypothetical. Gruben and Buschor (See Gruben, 1965, p.187, Note 22) ascribed the sphinx of that column to the ">Aphrodite Heiligtum<", now designated as the Apollo sanctuary, Kolonna. Because of the excellent fit of the hind-quarters of the sphinx from Kolonna with the capital of the Aphaia sphinx column, Gruben (1965, p.187 and Note 22, Fig.5, Beil.71.2) used it in his reconstruction. Gruben's (1965, p.198, Note 48) assertion that the sphinx of Kolonna is of Cycladic origin (So confirmed by K. Schefold), is refuted by Walter-Karydi (1987, No.1 and p.49) who is certain of its Aeginetan pedigree. She (1994, p.128 Note 6) does

see the column as being Ionic in nature. Both Kirchhoff (1985, p.21-2) and Gruben (1965, p.207) see the Aeginetan capital as an indigenous creation, with recognisable Cycladic and east-Ionic (in this case Chiotan) stylistic influences.

Capital: Ion-22.

**Col-7** The Naxian sphinx column, Apollo Sanctuary, Delphi. Delphi Museum.

Date: 575-60 BC [570-60 BC, "plutôt que de 575" BC] (Amandry, 1953, p.26, 31), but with the acceptance of Gruben's (1993, p.104) assertion that it follows the Iria capital [Dated to 570 BC], therefore in the 570-60 BC range [A date also stated by Jacquemin (1993, p.224); Ohnesorg (1996, Note 28) reports Amandry's date as 570 BC]. Other dates: 570-60 BC (Courbin, 1980, p.55, Note 4); Courbin (1987, p.68, Note 20, p.69, p.71) later dates the Naxian *Oikos "IIa"* to 575 BC, with the Naxian sphinx column 'dix ans plus tard', ie in 565 BC. Gallet de Santere's (1958, p.291) date is 575 BC; Boardman's (1959, p.199) date is ca 550 BC. Gruben (1965, p.190, Notes: 32) uses Amandry's date of [575] 570-60 BC, whilst he (1989, p.172) later remains sure that it follows the temple at Iria, Naxos (with similar column, capitals and bases) which temple he (1993, p.104) gives a starting date of 580 BC and (1966, Fig.55) a dedication date of 550 BC. Kirchhoff (1988, p.16) dates the capital at 580-70 BC on proportions, which corresponds to that of Jacob-Felsch (1969, p.15, 109), namely 580 BC [She gives no explanation for her date].

Description references: Alzinger, 1972-3, p.186, Fig.16; Amandry, 1953, p.1 flw., Plate XI, XII.1-3 [capital and column]; Boardman, 1953, p.199; Jacob-Felsch, 1969, p.109-10; Kirchhoff, 1988, p.16-7, No.4, Fig.1.2 [capital]; Theodorescu, 1980, p.162, No.23 [capital]; Ohnesorg, 1996, p.43.

Dimensions: Amandry (1953, p.1 flw., Plate XI) and Gruben, 1963, p.148, 154.

Notes:

- The column is made up of drums, and has no entasis (Jacob-Felsch, 1969, p.109). It has 44 flutes (rather than the 36 of the Aphaia sphinx column), and very shallow top and bottom apophyge with round moulding.
- There is a discrepancy in the column height dimensions of Jacob-Felsch [9 900] vis a vis Amandry [9 894], and a problem with firstmentioned's account of the top column diam : bottom column diam ratio.
- Gruben (1972, p.325, Note 17) could, as Amandry, not find a base dimension for the column design. Following Gruben's work at Iria, the author has applied the foot standard of 291,4, and found it was possibly used as base dimension for both column and capital, as well as the ell of 523 for the design of the total height [9 894]. Column reduction was achieved by placing the top and bottom column diam in a ratio of 3:4. The column height is 10 $\frac{2}{3}$  the bottom diam [taken above shallow apophyge [Wesenberg (1983b, p.46) reports 10,32 using the bottom diam and a height of 9 891]. These figures indicate that the column was of the same studio as the Dionysos temple of Iria, and cross fertilisation between functional types. There is however no torus between base and column as at the Iria

Dionysos temple.

- For the restored middle section of the capital canalis, Gruben (1989) postulates that the canalis bottom bead disappears into the echinus (As the Dionysos Temple, Iria, Naxos), rather than a separated canalis (Also see Betancourt, 1977, p.108 [Also the straight canalis shown in the drawing by Perrot and Chipiez in Betancourt, 1977, Fig.51]). The volutes and canalis have round edges that read as beading.

Capital: Ion-6

**Col-8** Fragment of an Aeginetan limestone votive column (linked with a Cycladic marble sphinx statue and a hypothetical Ionic capital similar to that of the Aphaia sphinx column), Apollo Sanctuary at Kolonna, Aegina.

Date: 620 BC, according to the manufacture date of the sphinx, as well as the form of the column shaft flutes, which are flatter and therefore older than those of the Aphaia column, according to Walter-Karydi (1994, p.128 and Note 6); Also Walter-Karydi (1987, p.49)). Whilst the linking of the column fragment and sphinx fragment are hypothetical, and the column date therefore as well, the column is at least as old as the Aphaia column, and possibly even slightly older.

Description references: Column: Walter-Karydi, 1994, p.125-8, Fig.3a-b [column shaft fragment], Fig.4 [Column reconstruction using Gruben (1965, Table 3)]. Sphinx: Walter-Karydi, 1987, p.49 [The stone sphinx appears in Hellas ca 650 BC, and this sphinx is argued to be the the first monumental example, but not proven to belong to the column].

Notes: The Ionic nature of the fluting, and the age of the column, allows for the deduction that the column was most propobably a sphinx column.

- From Walter-Karydi's (1994, Fig.3b) drawing of the shaft profile one may reconstruct a column section with 36 flutes, similar to the number of flutes on the Aphaia column (See Gruben, 1965, Plate 2). The flatter profile of the fluting, relative to the Aphaia column should be noted (Walter-Karydi did not redraw the column shaft flutes on the reconstruction to reflect their very shallow concave profile. The bottom and top endings of the flutes would therefore not end like those in the Aphaia column).

- Because of the excellent fit between the sphinx hind-quarters and the capital of the Sphinx column from the Aphaia sanctuary [Ion-22], Gruben (1965, p.187 and Note 22) used it in his reconstruction. Walter-Karydi (1994, Fig.4) *mutatis mutandis* reconstructs the Kolonna column to the likeness of the Aphaia column of Gruben. She did not try to compare the tapering of the shaft fragment with those of the Aphaia column, from which action a better reconstruction might be done. Even though the sphinx of this column fits on the capital of the Aphaia sphinx column, we have no absolute proof that the Kolonna column had an Ionic capital. Apart from the fact that the column would have had some capital, it seems to be older than that at Aphaia, making it the oldest monumental votive column in stone.

Capital: None extant. Hypothetical capital proposed for the column by Walter-Karydi: See capital Cont-17.

**Col-9** Kettle stand with torus capital, Samos.  
Origin: Samos  
Date: "Altertümlicher.." [if read in context here meaning closer to] the outgoing years of the 7th Cent BC (Buschor, 1930, p.46); Kirchhoff (1988, p.147) dates it in the early 6th Century BC.  
Description references: Buschor, 1930, p.46, Beil.XI; Kirchhoff, 1988, p.147, No.K1.  
Note: The column neck has a round moulding.  
Capital: Tor-3

**Col-10** Limestone kettle stand with torus capital, Samos.  
Origin: Samos.  
Date: "...näheren sich eng der Rhoikoszeit". (Buschor, 1930, p.46); Kirchhoff (1988, p.147) just states "Rhoikoszeit". [Referring to the time of the 1st Dipteros]  
Description references: Buschor, 1930, p.46, Beil XI [base], Beil XII [capital]; Kirchhoff, 1988, p.147, No.K2.  
Note: The shaft and capital are monolithic.  
Capital: Tor-4.

### 2.4.1.3 Catalogue and description of Ionic buildings from the architectural datum of the stone, Ionic standard capital to 525 BC [The first generation]

2.4.1.3.1 The architectural datum of the stone, Ionic standard capital: The original granite and marble Naxian *Oikos* [Earlier deemed by Courbin as Phase "IIa"].

**Bld-12b** A supposed *Oikos* Phase "IIa": Alterations to the interior axial colonnade and the western in-antis pronaos of the roofed *Oikos*, Delos. This phase is presently deemed to be part of the the initial building phase.

Accepted date: A date of before 580 BC is accepted: between ca 590/80 BC. Ohnesorg (1993b, p.58; 1996, p.41, Fig.1-2) dates the building to the early 6th Cent BC, 20 years before her date for the Iria temple of ca 575 BC; Gruben (1989, p.172; 1993, p.103) to 600-575 BC, later (1996, p.70) to before 580 BC and recently (1997, p.308) to 590/80 BC. Gruben (1997, p.270) indicates the proof for reasoning for the post 600 BC date in the detail of the northern wall of the *Oikos*, related to the erection of the *kouros* base. Previously the dating of the building and its capitals were hotly debated: According to Courbin (1987, p.68, note 20, p.69, p.71) both colonnade and distyle in-antis prodromos are alterations and are contemporary, ca the turn of the first and second quarter of the Sixth Cent BC, [ie 575 BC]. However, just the type of detail of the capital relative to the date of the capital [ie 570 BC] of Iria temple at Naxos asks for an earlier date. Ohnesorg (1993a, p.58) gives a synopsis of dates by others given for the *Oikos* inner capitals over time, and Gruben (1997, p.306, Fig.21) provides a synopsis of Courbin's dates for Delian buildings, followed (1997, p.308, Fig.22) by his own.

Material: Granite, with Naxian marble (Vallois, 1966a, p.101) columns, capitals, frieze and roof (Ohnesorg, 1996, p.41).

Capital: Ion-24 (Ion-5 later east prostyle)

Description references: Bruneau *et al*, 1965, p.33, 79, Fig.6 [Their date is 'des premiere années du VI<sup>e</sup> s']; Bruneau *et al*, 1983, p.121 flw; Courby, 1921, p.233-8, Plate VII; Courbin, 1980, p.42-98 flw., Fig.8-27, Plate 24-5, 73.4 and 73.6 (Courbin (1987) argues this is most

probable reconstruction)]; Mertens, 1986, p.433-6; Courbin, 1987, p.68-74, Fig.6-8, 12-4 [Elevation, section]; Coulton, 1976, p.233, Fig.60.7 [Plan]; 47-8; Gruben, 1963, p.148, 155, Fig.38, Fig.38 [interior column]; Kaster in Gruben, 1963, p.177-82, Fig.47-8 [interior column and capital and section]; Vallois, 1966a [1944], p.16-8, 101, No.2 [interior base]; Courbin, 1979, p.18-21 [Same dates as 1980, but calls phase IIa = II, and IIc = III]; Kalpaxis, 1990 [Rejects *préikos* or Phase I as scaffolding]; Ohnesorg, 1993a, p.53-8, Tables 3-4 [Roof, inner colonnade and E+W prostyle reconstructions]; Ohnesorg, 1996, p.40-3, Fig.1 [Kaster's capital reconstruction], Fig.2 [bldg section]; Gruben, 1993, p.103-4, Note 10 [Alternative tristyle in-antis pronaos column spacing], Fig.4; Gruben, 1996, p.70, Fig.9 [Perspective of Ohnesorg's 1993a reconstruction]; Gruben, 1997, p.301-47, Fig. 22 [New plan], Fig.40 [drawing section naos {showing position of scaffolding posts}, in-antis tristyle western prodromos façade and section prodromos].

Book reviews and critical essays: Bommelaer, 1983, p.121-2 [indicates important *errata* in *Delos XXXIII*; Critique of interior column height]; Mertens, 1986, p.431-6 [Critique of *Delos XXXIII*; dates a bit earlier; description of entablature]; Scranton, 1982, p.455-6 [Critique of *Delos XXXIII*; confirms its dates; political status of building]; Wesenberg, 1970, p.297-302 [Critique of Vallois, 1966; critique of interior column heights; critique of proston date]; Plommer, 1970, p.186 [Critique on interior column height and alternative proposal with superimposed interior colonnade]; Koenigs (1985, p.450) concurs with Courbin that Plommer's proposal is implausible and does not reflect the trend in slenderness in Ionic works.

Notes: The reconstructions by Kaster (In Gruben (1963)) and Courbin (1987) show a single beam down the length of the interior, with the Ionic capital bolsters facing the viewer at the door, logical if capitals supported the single axial architrave along its bearing length. However, Gruben (1996, p.70, Fig.9) shows the new reconstruction by Ohnesorg (1993a, p.57, Table 3) which shows the beams running transversely, and with

capital façades facing the doorway. Also, the beams and roof-tiles are from marble, and where the beams lie on the side walls their ends are covered by marble frieze blocks. Their new interpretation clears up reservations re the improbability of Courbin's reconstruction of a linear central beam with roof construction on top in super-position, already very singular in its conception, to say nothing of its problematic of construction [Even with the double row of posts seen as scaffolding positions, which Gruben (1997, p.318) has now shown to have been required for the marble roof construction]. It is clear that the marble elements on the line of the transverse roof beams in the upper zone like act as frieze plates on the outer wall (These were copied with so much more skill in the Iria temple. This detail makes Ohnesorg's early date of ca 600 more feasible, with the [amphi] prostyle of Artemision 'E' at Delos then being still earlier.

- The outer columns of the alternative tristyle *prodomos* layout argued for by Gruben (1993, Note 10; 1997, p.348, Fig.22, Fig.40; Also Ohnesorg, 1996, p.41) is used for comparative purposes, rather than the inner columns that featured in all works up till now [Gruben, 1997, p.344 has in any case shown that they vary in length up to 380, due to their being level at the top and following the sloping floor at the bottom].  
Dimensions: The reader will know the dispersed nature of the sources for elements of this building! In terms of internal and *prodomos* column heights, Gruben's (1997, Fig.40, p.347) internal beam height and column height differs from Ohnesorg's (1993a, Table 3)], whilst his dimensions also refer to older works like Kaster's inner column reconstruction [The 5130 inner column height of Gruben (1996, Fig.17) {obviously using only one of the varying column heights} is in the +200 error range (Gruben, 1965, p.190) set earlier, and for Kaster's (In Gruben, 1963, p.181) reconstruction of 5002. In his 1997 reconstruction Gruben uses a height of 5000] and refers to Courbin's (1980 [*Delos XXXIII* Notes 2.5.7-10 {argument very difficult to follow}] base height, later cited in Courbin (1987, p.71) as 664. The outer column (inv 31) bottom diam R = 367 (Courbin, 1980, Plate 4). The outer column spacing of ca 2460 is from Gruben (1997, Fig.40). Kaster's (Drawing in Ohnesorg, 1996, Fig.1) capital bearing to bearing height L of 163 is used rather than the 172 of Ohnesorg (1993a, Table 3).

- Due to the lack of a detail dimensioned plan of the *prodomos* there is no certainty regarding use of a standard foot or ell as base dimension. Using Gruben (1997) the inner column height is  $13\frac{1}{2}x$  and the outer column height app  $13\frac{1}{4}$  [13,22]  $x$  the column bottom diam (but Gruben (1997, p.348) reports  $12\frac{1}{4}$ ). The marble columns of this building, the earliest known stone architectural columns, have conical bases and 24 lightly concave flutes, rounded at the top and bottom.

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2.4.1.3.2 Buildings in the time from the architectural datum of the stone, Ionic standard capital, up to 525 BC.

**Bld-1d** The poros, roofed octastyle dipteral 'araeostyle' Heraion III, now named the First Dipteros, at Samos.

Date: Ca 575 BC (Kienast, 1990, DiskAB5, p.124 [-]; Kienast, 1992; Hendrich, 1997, p.77).

Capital: Tor-1

Description references: Buschor, 1930, p.72 flw. [Plan only]; Johannes, 1937, p.13ff [bases]; Reuther, 1957, Z.3 [detail of west end excavation finds]; Gruben, 1966, p.321 ff; Kienast, 1992, p.174-80; Hendrich, 1997, Beil.2 [Plan constructed from Kienast (1992)], Beil.5 [Correct elevation of columns].

Notes: The plan by Buschor (1930, p.83, Beil.XIX) has been altered from new work by Kienast (1992, p.175, notes 19-20), as drawn by Hendrich (1997, Beilage 2). The stylobate proportion is still 1:2 (The distance from front columns to stylobate edge is given, but there is no clear evidence for the intercolumnium. The column height is still theoretical.

- As Hendrich (1997) indicates, the temple was built by Theodoros. Rather than calling this temple the Rhoikos temple, the accepted nomenclature will be "the First Dipteros from Samos".

**Bld-1e** The roofed (poros and marble) octastyle dipteral 'eustyle' Heraion IV (so called Polycrates\* Temple), Samos. [\*The term is still used together with the designation 'Heraion IV'].

Date: The building period started by 538 BC (Kyrieleis, 1981, p.48, 70) or 540 BC (Kienast, 1992, p.185). The programme was halted sometime during Polycrates's reign [ie before 522 BC], and the upper parts and prostyle commenced ca 500 BC (Kienast, 1992, p.186), definitely by a successor of Polycrates (Kalpaxis, 1986, p.68). It is however not excluded that certain parts of the building may have been complete in Polycrates's time (verbal communication from Kienast (1996)).

Description references: Buschor, 1930, p.95-9, Beil.XXVII [Plan]; Buschor, 1957, p.12-20; Gruben, 1960; Gruben, 1966, p.325 flw, Fig.17; Kienast, 1992, p.182-8; Reuther, 1957 [Detail drawings of plan and elements]. One awaits publication of the 1989 campaign by Furtwängler *et al*.

Notes: Gruben (1966, p.328) indicates that the west side was never completed, and that the east side and long side adjacent the east façade were the only parts of the temple ever to be completed. The peripteros had standard capitals, fragments of which have been reconstructed by Gruben (1960), and are stylistically similar to those of the Monopteros II (which capitals were previously ascribed to Temple 'B'; See capital Ion-59). According to Gruben (1966, p.327) the marble columns and Ionic standard capitals went up by approx. 500 BC (He (1996, Fig.17) also reports 530 BC), but Kienast has indicated verbally that the capitals must be seen as of the later date (See Ion-58). The inner capitals were egg-cyma capitals and the anta walls had a super-imposed triple volute (Gruben, 1966, p.328-9; Drawings in Reuther (1959), eg Drw.39-43). Tölle-Kastenbein's (1994, Fig.12b) roofed pronaos and open naos without columns is not correct. Kienast's (1992, p.175) assumption that the First Dipteros had stone architraves which were subsequently used in the

Heraion IV, has since been discarded (Kienast, 1997). He is however sure that its column drums were re-used in similarly dimensioned parts of Heraion IV, and that the reason for the Heraion IV's relocation to new foundations was due to destruction of the First Dipteros because of faulty foundations and their subsequent subsidence (possible helped along by tremors), rather than due to destruction by fire.

- The building uses both plan design and materials of the First Dipteros, and there is no simple co-ordination between building elements. Foot standard and ell were used in plan design, with the naos being the originator of modular co-ordination between walls and columns (rather than the other the peristyle design being that). There are significant proportions in the relation between column diameter and interaxis (1:2¼) and intercolumnation (2:3), and stylobate (1:2).

Capitals: Ion-58a+ b Ionic standard capitals +500> BC, rather ca 480 BC; Cym-9, ca 522 BC; Cym-5, <522 BC.

**Bld-2d** The (marble) hypaethral octastyle dipteral 'araeostyle' Artemision 'D' (Kroisos) temple, Ephesos. Date: From recent finds an **established terminus ante quem** of 560 BC for the start of the crepidoma (Bammer, 1991, p.64). Other dates: Before the middle of the 6th Cent BC (Bammer, 1984, p.76 and Fig.84); 550-525 BC (Kalpaxis, 1986, p.712).

Description references: Bammer, 1972b, Fig.5 [Plan; modular dimensions]; Murray, 1889, p.1-10, Plate 3 [Bases and columns]; Hogarth, 1908a, b [Building plan, elevation, section; capital drawings]; Wilberg, 1906, p.221-4; Lethaby, 1917, p.1-16; Krischen, 1938, p.19, Plate 33-4; Bammer, 1972b, p. Bammer, 1984, p.212-29, Fig.110, 112 [Dating, elevation]; Gruben, 1963, p.155-8 [column dimensions, plinth module]; Bammer, 1991, p.63-83, Fig.1, 21 [Plan Artemision A, B]; Tölle-Kastenbein, 1994, Fig.1-6 [Plan: *sekos* of Artemision A-E]; Wesenberg, 1983b, p.33-49, 105 [new interpretation proportion system, column height]; Gruben, 1996, p.74-6 [New interpretation of proportion system and module].

Sources not used: Bammer, 1988, *OJh*, Vol.58, Beibl.1, p.1 flw; Alzinger, W. 1961/2. *OJh*, Vol.46, p.105f; Robinson, E. 1951. *JHS*, Vol.71, p.156f; Jacobsthal, P. 1951. *JHS*, Vol.71, p.85f; Bammer, A. 1990. *Anatolian studies*, Vol.40, p.137 flw [especially p.160, Fig.30]

Notes:

- The possible start of the temple seems to coincide with the start of Kroisos's reign (560-47 BC). The building was completed by 450 BC (Bammer, 1972b, p.259).

- Bammer (1984, p.172 and Fig.83) thinks the preceding Early Archaic Temple 'C' was an anta building with a naiskos, rather than being a peripteral temple, making version 'D' the first known peristyle temple possessing an Ionic standard capital (In dipteral form). Tölle-Kastenbein (1994, p. 52, Fig.3, 6) has since argued that the Artemision 'C' of 600-598/80 BC was a peripteral stone *sekos*, but her thesis has been rejected on technical grounds.

- This temple is the first Ionian temple using plinths, which Gruben (1963, p.158) deemed to have been

utilised as module [foot and ell] for the column dimensions, both vertically and horizontally (Gruben, 1963, p.158 [In Phase 'E' extended to a 3-dimensional grid]), and foreshadowing the use of a planning grid module for plan organisation. However, Wesenberg (1983b, p.45) shows that plinths were differing in size. Column centres and lengths, both base and column diameters and naos, pronaos and opisthodomos wall centres were all regulated on foot and ell standard dimensions, and interior space dimensions were regulated by foot standard dimensions. The stylobate proportion (1:2) is significant. The column heights have never been determined. The proportions of column bottom diameter to column centres (1:3¼), and to intercolumnation (1:2¼), using Krischen's column height of 18 900, are significant, but now under threat. His column height reconstruction relates to that of the later temple. Wesenberg (1983b, p.44-9) argues for a lower column of 8xUD [1525]. He illustrates the various column height options but as measured from the stylobate (8xcolumn bot diam for column height incl plinth: 12 204 [8UD], 8x col bot diam=column height excl plinth: 12 594/604 [8,26UD], 8x col bot diam=shaft height: 14232 9,33UD)]. Whilst none may be proven by the remains, the 1:8 option cannot be disproven either. He uses the column plus plinth option in his table, and the column less plinth option in his Fig.2. Gruben (1996, p.76, Fig.17) also realises the possibility of a lower column but, after a re-evaluation of Vitruvius's term *vestigia*, uses the spira as base module, and gains a column height (also measured from stylobate) of 12 600, being 8 x 1575 spira diam. The difference between Wesenberg's 12 594 option and Gruben's reconstructed dimensions are negligible.

- The entablature has never been found (Hogarth, 1908b, p. 270). Krischen's (1938, Plate33-4; Also published in Berve *et al* (1961, Fig.130) and in Bammer (1984, p.221, Fig.112)) reconstruction and Hogarth's (1908a [no Fig. no.]) reconstruction of the western façade are more or less similar, with two exceptions:

i Krischen's reconstruction shows a dentil moulding between two ovolo mouldings, therefore resembling that of the Late-Classical Athenaion at Priene (Dinsmoor, 1973, Plate LV). Hogarth's reconstruction shows only an ovolo moulding. Scrutiny of Pryce's finds (1928) does not show up any dentils.

ii Krischen's column heights (Gruben, 1963, p.158) are still shown in one table to contrast with that of Gruben (1996; [Gruben's latest analysis is used in stead of Hogarth's and Wesenberg's]).

iii Keil (1964) in Akurgal (1985, Fig.54) also uses the short columns in his reconstruction. Bammer (1984, Fig.112) offers a revised version of Krischen's elevation, with altered column detail and plinths.

Capital: Ion 16a-c. Corner capitals for the Artemision 'D' have not been found.

**Bld-3d** The roofed tetrastyle prostyle 'araeostyle' Dionysos temple IV, Iria, Naxos.

Date: Around 575 BC (Ohnesorg, 1996, p.41), being midway in Gruben's (1996, p.67) date of "Bei dem gegen 580/70 begonnenen vierten Tempel..". Other



dates: 570 BC (Gruben, 1989, p.172); "ein Jahrzehnt vor Ausarbeitung der Kapitele, um 580 v. Chr." (1991, p.64); ca 580 BC (Gruben, 1993, p.104).

Capital: Ion-7a-b

Material: Naxian marble (Order), Granite (Walls).

Description: Gruben, 1972, p.360, Fig.22 [Column/capital]; Gruben *et al.*, 1987, p.569-608, Fig.39, 46 [excavation plan/elevation]; Gruben, 1989, p.172, Fig.4, 5 [Column/capital only]; Gruben, 1991, p.63-71, Fig.1-14 [Fig.5: first dimensioned plan of reconstruction]; Gruben, 1993, p.104, Fig.5 [plan]; Gruben, 1996, p.65-70, Fig.7-8; Ohnesorg, 1993a, p.23; Ohnesorg, 1996, p.41-43, Fig.3 [3-D capital dwg, new column heights].

Notes: The building start predates the Naxian Sphinx column but the capitals are almost contemporaneous (Gruben (1991, p.64) and (1993, p.104 [he cites the capital detail])). The completion date is ca 550 BC (Gruben, 1991, p.64; Ohnesorg, 1993a, p.23), to be seen from the use of the toothed chisel. The long building period is mainly due to the experimentation with marble and monumental scale. The outer columns have 24 flutes, no apophyge and bottom beading. Earlier Gruben (1989, p.595), from comparing the columns to that of the Naxian Oikos, deemed the outer columns to be 8070 high with interaxis of 4 080. Gruben (1991, p.63, Fig.5) stated a height of 7 200 and interaxis of 4 070. His (1996, Fig.17) last height dimension is 6860, a height of 9 column bottom diameter of 760. Inner columns are higher, [ca 8 000 or 10 x *ud* {Ohnesorg, 1996, p.41, Note 27; Gruben, 1996, Fig.17}] and have 28, 32 or 36 flutes (Gruben (1991, p.69; 1996, Fig.17)). The column bases (some still unfinished) have a torus moulding on top. The door moulding shows no fascias (Gruben, 1991, p.64).

- According to Gruben the building shows high dimensional tolerances, and the 1991 plan shows indications of the use of standard ft (291,4) and Ell (523) in the design [naos walls and euthynteria dims, wall centres and column interaxes]. The prostyle has a separated stylobate.

#### **Bld-6c** *Sekos II* (Didymeion IIa), Didyma.

Tölle-Kastenbein (1994, p.56) wants us to see the Temple Phase II as a two phased complex whose *sekos* and *naiskos* (Phase IIa) were conceptualised and begun in the second quarter of the Sixth Century BC, and whose dipteros (Phase IIb) was started from 550 BC onwards, together with the terrace wall. Tölle-Kastenbein (1994, p.54) indicates that *sekos II* (or Phase IIa -her nomenclature) was already complete by 550 BC by employing Schneider's (See Tölle-Kastenbein, 1994, p.56, Fig.8) dating of cornice details of the *sekos* walls at Didyma and the "Rhoikos" altar at Samos and so inferring that an anta type *naiskos* and a *sekos* must already have been complete by ca 550 BC at the point where the dipteral Didymeion IIb (See Bld-6d) is believed to have begun. From dating evidence of the cornice this will be taken as possible.

Description: According to Tölle-Kastenbein (1994, p.56, Fig.8) Gruben's [1963] elongation of the *sekos* to the east was not correct, and she proposes a different position for the termination of the *sekos*,

namely that the *sekos IIa* had an outside edge to outside edge length of 100 Ionian foot, and a width of 50 Ionian foot on the wall centre lines (Tölle-Kastenbein, 1994, p.56). There is at present no evidence for this, and the reader is referred to the text at Bld.6d below.

#### **Bld-6d** The hypaethral (marble) Phase IIb of the octastyle (Gruben) or decastyle (Fehr) dipteral 'diastyle' Archaic Apollonion/Didymeion, Didyma.

Date: Ca 550 BC. Tuchelt's (1987a, *sine pag*; 1987b, *sine pag*) date is 550 BC; Later he (1991, p.20) dates the 'Neubau' [Didymeion IIb], 'Rundbau' [Tholos/altar?] and terrace wall to 'um 550 v. Chr.', with the date of the terrace wall detail fixed at 540 BC.

Description reference: Wiegand, 1941a/b; Gruben, 1963, Fig.1, 39 [Plan and elevation]; Hahland, 1964; Wesenberg, 1971, p.120 No.22, Fig.261 [base dwg with dimensions]; Fehr, 1972, p.14-59, Fig.1 [plan]; Tuchelt, 1987a; Tuchelt, 1991 ( Other sources not used by the author: Drerup, A. *et al.* 1964, *AA*; Krauss, F. 1961. *Mitt II*; Von Gerkan, A. 1963/4. *IstMitt*, Vol.13-4, p.63 ff; Naumann, R. *et al.* 1963-4. *IstMitt*, vol.13/4, p.16ff; [-]Tuchelt, K. 1973. *Vorarbeiten zu eine Topografie von Didyma*. *IM*, Beiheft 9, p.14-5, Fig.3).

Notes:

- The newly found architrave sculpture (Schattner, 1996, p.14) has been dated to 530-20 BC. Other dates: Gruben's date is between 540-20 BC (1963, p.176) based on built form and sculpture of the temple. He mentions that there is no fixed date (He also gives 530 BC as an approximate date (1963, p.164), and later he (1966, p.340, 344) dates the temple to 540-25 BC). Fehr's (1972, p.30, 53) date is 545-40 BC, based on the terrace wall details of 540 BC. He mentions that the architrave was up by 520 BC [which tallies Schattner's architrave sculpture, but not others mentioned below]. Kirchhoff (1988, p.86) dates the capitals to 540-30 BC. Boardman (1959, p.208) dates the capitals to the pre-Persian era.

- The building is still subject to a lot of re-interpretation. From Gruben's (1963) work we know of the use of the foot and ell standards in the design, and a modular rectangular planning grid for column and wall centrelines and certain *sekos* wall piers. Fehr (1972) argued for use of a 10 ft design module. Tölle-Kastenbein's (1994) idea of a 1:2 *sekos* has not been proven. Whichever way, the plan design shows a high intensity of noetic control.

Capital: Ion-28a-b. Ion 28b is the oldest extant stone corner capital. Gruben (1963, p.168) earlier saw the stone capital Ion-32 of an then unknown Delian building as an experiment between a possible Artemision 'D' corner capital and capital Ion-28b. With his date of capital Ion-32 being 'Late Archaic', he meant the Delian building must have been between 546-40 BC to be before the *Didymeion*. Gruben (1997) now identifies Ion-32 as being a capital of the Delian Propylon II, in effect then later as the Didymeion.

#### **Bld-12c** The later tetrastyle prostyle 'araeostyle' east façade alteration or *prostodon* of the roofed distyle in-antis 'araeostyle' Naxian *Oikos*, Delos.

Date: This phase is dated to just before 550 BC by

Courbin (1987, p.74, [560-550 BC by Gruben (1989, p.168 note 15)], or 560-550 BC (Gruben, 1989, p.166, note 12; p.168, note 15) contemporaneous with the Athena Polias column at Building Δ, which is in agreement with Courbin (Gruben (1997, p.308) is mid 6th Cent BC). Mertens dates this phase 25 years after the erection of the marble building in the 1st quarter of the 6th Cent BC (1986, p.436). Vallois's date is 575-60 BC due to the capital date (1966a, No.11, p.175-6). Gallet de Santere's (1958, 293) date is 'avant le milieu du VI<sup>e</sup> siècle [ie before 550 BC]; Bruneau *et al*'s (1965, p.79) date is "d'environ 560".

Material: Naxian marble (Wesenberg, 1971, p.119)  
Description references: Bruneau *et al*, 1965, p.33, 79 [Guide de Delos 1]; Courbin, 1980 [*Delos XXXIII*], p.98 -122 [p.119 note 5 = hypoth column height of 4370 by Vallois], Fig.28-34; Courbin, 1987, p.74-76, Fig.6, 8, 11-2; Coulton, 1976, p.233, Fig 60.7 [Plan]; 47-8; Vallois, 1966a [1944], p.16-8, 101, No.2 [interior base], No.3 [*Prostōon* base]; Wesenberg, 1971, p.119 No.15, Fig.250 [*Oikos* base]; Ohnesorg (1993a, Table 3 [Section, but no column height]); Gruben (1997, Fig. 40 [section *prostōon*, column height of 3 610].

Note: There is use of a foot standard, and modular design re intercolumnation, base and column diameters, as well as the use of significant proportions for the relation column : column interaxis (1.5½).

Capital: Ion-5 (Interior is Ion-24, [lost] in-antis capital similar).

**Bld-16ab** 16a - Siteworks planning [called Phase I-II], and 16b - The (poros) flat-roofed tristyle prostyle Treasury (?) or Nordbau I [Phase III], Samos. Siteworks date: 590-550 BC Furtwängler *et al* (1989, p.4-6)

Building date: 'Etwa um die Mitte des 6. Jhs', namely 545-35 BC (Furtwängler & Kienast, 1989, p.7, 57). These dates are established dates which rely on reliable stratification from finds reported in the work. Other dates: 575-550 BC (Kyrieleis (1978, p.257); Concurrent with the Rhoikos [1st Dipteros] temple, just before 550 BC (Kyrieleis, 1981, p.116 [Here we have again a difference of opinion in terms of the starting date of the 1st Dipteros]; Kalpaxis (1986, p.59) is of the opinion that the North Building must be older than the 1st Dipteros, because of its plan form.

Capital: Cyma fragments apportioned to Phase IV building (Furtwängler *et al*, p.153-6, No.5-20 [Also see Kyrieleis, 1980, p.338]).

Description reference: Furtwängler & Kienast, 1989 [Detailed description and drawings, especially Fig.8 {perspective} and Table 20.1 {plan}. See p.152 Items.1-4 for description of unfluted column drum fragments]; Kyrieleis, 1981, p.115-7 [Notes, site plan]; Kyrieleis, 1978, p.250-4, Fig.3 [Foundation plan]; Kyrieleis, 1980, p.336-41, Fig.1 [partial plan excavation]; [-] Kienast, H. *Samos II*; [-] Walter, H. 1963, *Delt*, Vol.18, Chron.228, Fig.1.

Notes: The Phase III building had an open-fronted cella with pronaos type columns, and with a single colonnade dividing the cella into two aisles. It had a tiled saddle roof with gables, and was altered to become a peripteral structure [Phase IV] late in the 6th

Cent BC [525-10 BC] (Furtwängler & Kienast, 1989, p.57-8; Kyrieleis, 1978, p.258). Column drum fragments without grooves belonging to Phase III were found (Furtwängler *et al*, 1989, p.152, No.1-4), but no spira or torus elements. Very little information exists regarding the dimensions: naos = 13 400 x 27 400 (Furtwängler *et al*, 1989, table 20.1), column centres [prostyle] (Furtwängler *et al*, 1989, Fig.6, p.32-3, Pl.20.1), column centres cella = 3 238 and base diam = 900 (Furtwängler *et al*, 1989, Table 20.1), foot standard = 349,5 or 350 [1225 equals 3,5 Samian feet (Furtwängler *et al*, 1989, p.32). The foot standard was used in the prostyle column interaxis and naos wall width, and the Ell for the building and the foundation widths. The naos has no significant proportion, and the inner column interaxes are equal subdivisions of the space rather than modules based on a standard.

**Bld-17** North-West Stoa [Nordhalle], Samos.

Date: 575 BC. The date was previously 570-60 BC due to similarities with the First Dipteros (Coulton, 1976, p.280). Because the First Dipteros is dated earlier, this building should shift back accordingly, ie ca 575 (Kienast, 1992).

Description references: Buschor, 1930, p.53-6; Buschor *et al*, 1957, p.2-3; Coulton, 1976, p.279-80; Coulton, 1976, p.279-80 (with further cross references); Walter, 1990 [1965], p.62-3, 79.

Capital: None extant.

**Bld-18** The Athenaeion I (of unknown typology), Phocaea (Peninsulae presently called Foça). The temple destroyed during the Medean incursion of Harpargos.

Date: Second quarter Sixth Cent BC (Akurgal, 1985, p.117) (Although the building could arguably have come to being before the Iria temple in Naxos, there is no evidence to sustain such a proposition).

Description references: Wesenberg, 1971, No.6, p.118, Fig.224 [dimensions base]; Akurgal, 1961, p.238, 287, Fig. 252; Akurgal, 1962, p.377, Table 101.23 [column and capital], 101.24 [terracotta panels]; Boardman 1959, p.209 [Bases]; *Anatolia*, Vol.5, 1960, p.2, Table 2 (cyma capital); [-] Martin, R. 1955-6, *Etude d'arch Class.* 1, p.121, 125, Table 26, Fig.3; [-] BCH, Vol.80, 1956, p.421 No.2; Gruben, 1963, p.106 note 54 [base dimensions; Gruben talks as if this is from the Athenaeion I]

Notes: There are no assembled elements left of the Early Archaic temple which has been demolished during the Medean incursion under Harpargos (the 540's BC (Boardman, 1959, p.200)). There are pieces of columns and capitals. The torus of the capital is in the style of the Smyrna capital, and the column is grooved with a turned torus moulding at the bottom. The temple, built of fine white porous stone, was rebuilt at the end of the Sixth Century shortly after its destruction, but very little of that version also has come through to us. The building does not lend itself to iconographic reconstruction.

Capital: Cym-8 (The capitals from the Athenaeion II [See capital Ion-60] are Ionic).

**Bld-19** The roofed distyle in-antis Cnidian Treasury (*Building XXV*), Apollo sanctuary, Delphi.

Date: Around 560 BC (Gruben, 1961, p.135), and around 550 BC (Gruben, 1966, p.78); Other dates: 575-550 BC (Weikert, 1929, p.103-5); 550-545 BC (De la Coste-Messeliere, 1957, p.319).

Description references: Durm, 1910, p.260; Dinsmoor, 1913, p.5-83, Fig.2-6, 11, 13 [Plan]; De la Coste-Messeliere, 1957, p.319, Plate 55 [Caryatid capital]; Gruben, 1961, p.135, Fig.26, 28 below, 30 left.

Capital: Cym-13 (The Ionic building has supporting columns for the caryatids with Samian torus bases and leaf-cyma

capitals. The antae also have torus shaped mouldings at floor level).

**Bld-20** The Milesian (limestone) Appolonion I, Naukratis, Egypt. Of unknown typology.

Date: In the second quarter of the Sixth Century BC, around 550 BC (Pedersen, 1983, p. 99, 116). Other dates: Second quarter of the Sixth Cent BC (Weikert, 1929, p.87); Boardman (1959, p.203) dates the building to just before the middle of the Sixth Cent BC, and Flinders-Petrie *et al* (1886, p.12) to 620 BC or earlier!

Description references: The building is known to have been built by the Milesians (Herodotos, 2.179) but no drawing of the plan exists. Apart from a scaled drawing of the famous column and capital and the verbal description of the temple by Flinders-Petrie (1886, p.12-3, Plate III) there is another scaled drawing of the column by Pomtow (1913, Fig.47) and another reconstruction of the capital by Dinsmoor (1927, Fig.37; 1928, Fig.47); Wesenberg (1971, Fig.241) provides a drawing of the column base.

Notes: Due to severe destruction of the material remains and lack of any reconstruction drawings the building does not lend itself to full interpretation. The capital and column ascribed to the temple by Flinders-Petrie *et al* (1886, p.12, Plate III) and Pomtow (1913, Fig.47), is now thought by Kirchhoff (1988, p.197-8) to be part of a votive column (He dates this column to just before the Naxian Sphinx column at Delphi [ie just before 570 BC]). However, in his work on decorated column shafts and capitals Pedersen (1983, p.99, No.S2) mentions a fragment from a second column similar to this one, giving more credence to the architectural nature of the column and capital.

Capital: Cym-1 [Three capital reconstructions (From drawings/verbal comments) are possible]

**Bld-21** The roofed (marble) hexastyle peripteral 'araeostyle' Lower Temple, Myus [currently Avşarkale].

Date: From present knowledge regarding reconstruction of the building, as well as designation of sculptures, just after 550 BC (Weber, 1965, p.62, 64), or around 550 BC (Weber, 1967, p.139). According to Gruben the dating of this building usually coincides with the starting time for the Artemision 'D' (which is, according to him, 540-20 BC (1963, p.176; and elsewhere, as average, 540 BC (1963, p.124, note 79)). Both Gruben's date for this building, and Kirchhoff's date of 560 BC (based on dating of capitals (1988,

p.76)), must be re-appreciated from the newly provided starting date of the Artemision by Bammer, which is an established date of 560 BC (1991, p.64; Previously dated to before 550 BC (1984, p.76 and Fig.84)), but before a new appreciation of this date in relation to Myus is forthcoming, Weber's date of 550 BC will be used.

Description references: Wesenberg, 1971, p.120 No.23, p.123 [bases]; Kirchhoff's (1985, p.75) comment about the lack of published detail is valid for heights and detail of columns, entablature and walls, but detailed reconstruction of plan dimensions and previously unpublished portions of the column and capital has been done by Weber (1965, p.54-63, Fig.4; 1967, p.128-143, Fig.2-6, Table 8.1) which vindicates the well-known plaster reconstruction. [waiting for A.Werz (A publication is due according to Weber, 1965, p.59, note 17 and 1967, p.134)].

Notes: Gruben's (1963, p.107, 121, 124 and 175) comments on column dimensions are accepted by Weber. Many of the stones were built into the aqueduct at Miletos (Weber, 1965, p.47); The temple seems to have been the inspiration for the early Fifth Century BC Athena temple at Milet and Lokri (Weber, 1965, p.61). Abzinger also argues for a Miletian connection regarding this temple (1972-3, p.178). The temple could have been designated to Dionysius or Apollo or Poseidon (Weber, 1967, p.141) or to Artemis (Akurgal, 1985, p.239).

- There is use of a foot and ell standard in modular design employing a square planning grid for column and naos wall centrelines [Later the norm in Ionic building design]. The building may be seen as breaking new ground in the simple but consistent manner of plan ordering. There is use of significant proportions for the relation between column height and interaxis (1:4¼) and intercolumnation (1:3¼), and the stylobate of 5:9 (ca 1:1¼).

Capital: Ion-15

**Bld-22** The (Naxian marble) 'araeostyle' Naxian Stoa, Delos.

Date: 550-40 BC, based on style of capital (Martin, 1972, p.314); 3rd quarter Sixth Cent BC (Gruben, 1997, p.308); 3rd quarter Sixth Cent BC, due to capital dating (Kirchhoff, 1988, p.34); Coulton (1976, p.233) dates it to the middle Sixth Cent BC, and Vallois (1966b, p.213) to 550-40 BC.

Description reference: Bruneau *et al*, 1965, p.95 [\*]; Coulton, 1976, p. 75, 95-6, 233 (with internal cross referencing), Fig. 60.6 [Plan]; Courby, 1914, p.247; Ducat, 1965, p.95; Courby, 1921, p.238-40, Plate V-VI [dimensions and site plan]; Martin, 1972, p.314 [Capital]; Martin, 1973, p.392-8 [Capital]; Vallois, 1953, Plate 3, Fig.16 [Plan]; Vallois, 1966a [1944], p.101 (No.4 and 5), 160; Vallois, 1966b, 178-80; Hellmann *et al*, 1979 [*Delos XXXII*], p.99-119, Plates 14-23; [-] Mason, *AJA* 86, 1982; [-] Courbin, 1983, *RA*; Ohnesorg, 1993a, p.59, Table 4 [Section south wing - reconstruction].

Notes: Various explanations exist for the entablature and roof construction: Whilst the epistyle has not been found, Courby (1921, p.240) argued against the

possibility of a stone entablature, whilst Coulton (1976, p.31-2, 132) insisted the entablature was of stone (the first for a stoa), that it is the first example of a L-shaped stoa (with the re-entrant corner angle being 98° rather than 90°), that there was no angle contraction [re column centres], and that the (unsurviving) re-entrant corner capital's shape (although not known) was probably a normal corner capital. Hellman *et al* (1979, p.115, Fig.39-40) argued against a timber entablature, and proposed a shallow stone architrave. Their reconstruction also showed a 98° re-entrant corner, as well as a capital with re-entrant corner volute. The effective span distance of the architrave (Z-C) is however quite long. Ohnesorg (1993a, p.59, Table 4) reconstructs the building with a marble architrave, frieze and cornice [all dotted in the dwg] and rooflines, postulated from the existence of marble beams and geison.

- The dimensions of Hellman *et al* (1979) up to the epistyle are used [Ohnesorg's (1993a, Table 4) total column height of 3 110 is 3mm more than Hellman's 3 107 {Wesenberg (1983b, p.47, note 142) uses Vallois measured height of ca 3 110}].

Capitals: Ion25a-f.

**Bld-23** The uncompleted, still to be roofed (marble) hexastyle peripteral 'diastyle' *Apollonion* (reconstructed version with amphi-prostyle naos and volute capitals in-antis), known as the '*Hekatompedon*', Palati, Naxos.

Date: Third quarter Sixth Cent BC (During Lygdamis tyranny: 550-24 BC, (Zaphiropoulou, 1988, p.14); During Lygdamis tyranny: Around 530 (Gruben, *Tempel der Griechen*, p.344)).

Description references: Gruben, 1972, p.319-66, Fig.12-3 [Two possible reconstructions regarding plan lay-out: In this work that in Fig.13 is used]; Gruben, 1982b, p.160-4 [new find: cyma], Fig.5 [Elevation impression of completed temple]. [~] Gruben, G. & Koenigs, W. 1968. *Der Hekatompedos von Naxos*. AA, p.693-717, and also 1970, p.135 flw. Gruben (1982b, p.163) mentions that reconstruction of the plan, façades and sections are under way, but the author has not seen any published.

Notes: This building had a very complicated design using a foot and ell standard, with modular co-ordination between naos side-walls and peristyle columns, walls and columns of the amphi-prostyle naos inside the peristyle, and of the interior spaces. The stylobate proportion is ca 1:2.

Capital: Not completed, but identified as Cont-2 (See Gruben's (1972, p.341-2) hypothetical dimensions).

**Bld-24** The (poros) nonastyle peristyle (excl east) 'diastyle' South Building I (Südbau I), Samos.

Date: 545-35 BC, concurrent with the North Building I: 'Es ist durchaus denkbar, daß der Südbau als Pendant zum Nordbau I errichtet war.' (Furtwängler & Kienast, 1989, p.61 [also see p.7, 57]), and in between the 1st Dipteros and phase IV (Kienast, 1992, p.191 [which supports the above date]). Other dates: Kyrielys (1981, p.92) reckons start ca 550 BC and completion late 6th Cent BC. Buschor (1930, p.60) placed it together with the Rhoikos [1st Dipteros] temple, as did Ziegenaus

(1957a, p.69), due to occurrence of column rejects of the Dipteros in the foundation of South Building I. Gruben (1957, p.55) sees the building of the South Temple as concurrent with the Heraion III [First Dipteros], when the South Stoa was demolished to make way for the South Building I. Ziegenaus (1957a, p.69) has also come to the conclusion that there were two building phases, namely Phase I in the Rhoikos [1st Dipteros] building period, and Phase II, where the stylobate was raised, during the reign of Polycrates (See Kienast, 1992, note 84 for more datings)

Description references: Buschor, 1930, p.59 flw., Ziegenaus, 1957a, p.65-76, Plate VIII, Beil.85-94; Kyrielys, 1981, p.91-94. [plan], and Kienast, 1992, p.189-91. Buschor, 1957, Fig.11 and Plate 14.2 shows a portion of the anta capital [Ion-73].

Notes: Kienast has shown that the foundation markings in Buschor's (1961, Fig.26) and Ziegenaus's (1957a, Plate VIII) reconstructions are Roman column centrelines. Buschor's (1930) dimensions are the only at present until new drawings by Hendrich (See Kienast (1992, p.172)) are available.

- The peristyle does not occur on the east façade (entrance to *naos*). Because little is known about the columns and entablature (See Kienast, 1992, p.191), and nothing about the capitals apart from a small fragment of an anta capital, the building does not lend itself to full interpretation.

- Furtwängler & Kienast (1989, p.64) do not share Buschor's (1957, p.84; Also later: *AM* Vol.74, p.2) hypothesis that the building was a temple dedicated to the cults of Hermes and Aphrodite.

Capital: Ion-73. Although the two anta had Ionic capitals, no standard Ionic capitals for the peristyle have been found. Due to the close ties between the South and North Buildings, the peristyle may have had torus capitals as speculated for the North Building I.

**Bld-25** The tristyle monopteral Monopteros II, Samos. Date: From 540 BC, but probably in the third decade before 500 BC [Before 522 BC?] (Similar to the Heraion IV, where there was a break in building construction sometime during Polycrates, with pronaos and upper parts of the building recommencing in earnest by 500BC (Kienast, 1992, p.186, 188)), not precluding that certain portions were up before then (Kienast verbal comment 1997). Other dates: Completed by 500 BC (Walter *et al*, 1986, p.143).

Building description: Kyrielys, 1981, p.82; Kienast, 1992, p.188-9, Fig.17a-b, 18 (base and column drum); Ziegenaus, 1957b, p.95-109, Beilage 102-9, Table XIII-IV; Walter *et al*, 1986, p.137-47 [plan]; Homann-Wedeking, 1964, p.226.

Notes: Kienast sees this building as a miniature of the Heraion IV, and closely associated with it. Because of two newly found capitals, similar to those thought to have belonged to the distyle in-antis Temple 'B', the total amount of similar capitals for the Monopteros II now amount to four (The two capitals previously ascribed to Temple 'B' are therefore ascribed to this building (Kienast (1992, p.198)). Kienast (1992, p.191) indicates that whilst the building elements point to a building phase between first Dipteros and Phase IV, it

is possible that the building may only have been started from 530 BC.

-Because of the lack of information regarding most of the building (Kienast, 1992, p.188), full interpretation cannot be attempted for this study. However, there is use of the ell as module for the stylobate and column interaxes, and the stylobate shows a proportion of 1:1¼).

Capital: Ion-59

**Bld-26** The nonastyle peripteral (excl east) 'araeastyle' temple of Apollo Phanaion, Phanai, Chios.

Date: The building in the third quarter of the Sixth Cent BC, and the capital only in 525-500 BC due to features more advanced than those at Ephesos and Samos (Boardman, 1959, p.183, Table on p.184); Kirchhoff (1988, p.83) argues for the third quarter Sixth Cent BC [based on his dating of the capital, which for him could be earlier due to the earlier start date of the First Dipteros at Samos (1988, p.323 note 677). Boardman's analysis of Chian architecture as a whole stands

Description references: Boardman, 1959, p.170-218 [Column bases only]; Wesenberg, 1971, No.5, p.118, Fig.247 [spira] [references]; Lamb, 1934-5, p.142 flw, Plate 30c, d [capitals].

Notes: Alzinger (1972-3, p.187) argues for an Ephesian connection, but Kyrieleis (1986, p.193) shows the strong influence of the First Dipteros at Samos in terms of the bases, notwithstanding very little contact in other artistic spheres, and the strong link between Chiot decoration and that of Phocaea and Lesbos, as with the temple of Emporio.

- Reconstruction of the building as a whole has not been possible (Boardman, 1959, p.174). Although intercolumniation and entablature dimensions are not confirmed, a hypothetical reconstruction of the column height was done by Kirchhoff (1988, p.275 note 255), using the Artemision 'D's column diameters and centres, with resulting ratios [which the author has seen fit to revise in the light of new dimensions for the Artemision 'D' column centres by Bammer (1972b), to take them further towards hypothetical proportional dimensions].

Capital: Ion-26

**Bld-27** The (Cycladic marble) tri-(or tetra (?)style *Enneakrounos* fountain house, SE agora of Athens [\*] Accepted date: Merrit (1982, p.88, 92) reports a date [already inferred by Thompson (1972, p.197-99)] in the third quarter of the Sixth Cent BC [ie during the reign of Peisistratos] based on dating of the foundation deposits. Boersma reports a firm date of [also of Thompson (1965, p.50-1)] about 520 BC (528/7-511/0), during the ascendancy of the Peisistratids. However, seeing that the date by Merrit is based on more recent archaeological consideration, it will be accepted. The date is supported by the appearance of Attic Black Figure ware showing the Ionic fountain house from 520 BC (eg Blundell (1995, Fig.22, p.221) indicates construction anywhere between 530-20 BC.

Description references: Merrit, 1982, p.82-92, Fig.1-2, Plates 12-3 [Capitals and bases only]; ASCSA, 1976, No.61, p.154-6, Fig.63 [Basic plan (showing tristyle

plan)]; Boersma, 1970, p.23-4, 221; Thompson, 1972, p.197-99, Fig.50].

Material: [Cycladic] island marble (Merrit, 1982, p.83, 88), not Attic marble (as Möbius (1927, p.171)).

Notes: Three *tori* have been found, but Merrit argues for a tetrastyle building, and not tristyle as shown in ASCSA (1976, Fig.63).

- Merrit (1982) believes this is not a local work, but executed by east Ionians for Athens.

- There does not seem to be a strong use of a design module (Although a few foot standards, fit certain plan elements).

Capital: Ion-74a-b

**Bld-28** The (marble) roofed tetrastyle amphi-prostyle 'systyle' Temple 'A', Paroika, Paros.

Date: 530-20 BC (Gruben, 1982a, p.229). 525-500 BC, due to paint details (Ohnesorg, 1993a, p.24).

Description references: Gruben, 1982a, p.197-229, Fig.16. Also see references in Weikert (1929, p.167).

Notes: Part of the naos and the opposite prostyle are unexcavated, being under a working church. Gruben (1982a, p.229) states that even after the latest excavation there is no proof that Lygdamis built it, but Kalpaxis (1986, p.77) demonstrates that he did. There are a few dimensions of the plan where foot standard base dimensions seem to have been used, but there is no consistency.

Capital: Capitals lost (Gruben, 1982a, p.215, Fig.16). These are itemised in this work as Cont-1.

**Bld-29** The (marble) roofed (marble) pentastyle *in antis* Demeter Telesterion, Sangri (at Marmaria, currently Gyroula), Naxos.

Date: Ca 530-25 BC (Ohnesorg, 1996, p.46. Other dates: Not before 530-20 (Kalpaxis, 1986, p.78). 530-20 BC (Zaphiropoulou, 1988, p.17); Earlier Gruben (In Lambrinouidakis, 1976, p.302) dated the temple to 550 BC.

Description references: Gruben, 1996, p.70-73, Fig.10-6, 18 [Plan, sections, details], 74 [Proportions]; Ohnesorg, 1996 p.46, Fig.7 [capital]; Gruben in Lambrinouidakis, 1976, p.299-303, Fig.3[plan], Plate 197 a-b, 198b; Gruben, 1982a, p.214, Note 38 [proportions]; Kalpaxis, 1986, Plate 12.2 [perspective drawing]; Picard, 1955, p.290, Fig.14-16 [Bases dimensions and layout photographs]; Wesenberg, 1971, p.119, No.16, Fig.251.; [-] Gruben-Korrés, *Praktika*, 1977, p.382-4, Plates 8-12; 1979, p.254flw.

Material: Marble (Gruben in Lambrinouidakis, 1976, p.303).

Notes: This was an extremely un-canonical and experimental design. The plan is reminiscent of the telesterion type temple, The space was entered from the long side which had the gable, and the space had a central colonnade across the long dimension, each column carrying a beam in the short direction. The whole roof construction is of marble, with the columns of varying lengths taking up the roof pitch, and the pronaos had the first stone ceiling (albeit not with cassettes) which was also cambered.

- It is still unclear whether this temple was preceded by an older, Late Geometric/Early Archaic building. There

are remains of an older, 5th Cent BC temple at the church of Ag. Mamantos (Picard, 1955, p.293).

- The fact that the oldest known stone Ionic capital of a votive column was found in the vicinity of this site (Orlandos, 1954, p.337; Gruben, 1989; Picard, 1955) is noteworthy.

Capital: Doric (Ohnesorg, 1996, Fig.7), but with capital if painted reminiscent of cycladic leaf-cyma type (Gruben, 1996, p.73).

**Bld-30** The roofed, in-antis (so-called) Klazomenaean Treasury, Sanctuary of Apollo (Building XVI), Delphi  
Date: [Ca 528 BC], "Two decades after the fire of 548 BC" (Gruben, 1961, p.135; 1966, p.78). Other dates: Weikert's (1929, p.135) date is the beginning of the second half of the Sixth Cent BC; Ohnesorg (1993a, p.23) says *ca* 525 BC.

Description references: Dinsmoor, 1913, p.5-83, Fig.2-4, 13; Gruben, 1961, p.135-6; Weikert, 1929, p.135. Wesenberg, 1971, fig 89 [spira plus torus base combination - note that they are the same as the bottom of the Naukratis temple, Hera temple, bases from Phanai, Myus temple, Artemision, all with profiled spira bases, and the bases of the Naxian-*oikos* proston and the column of Athena Polias at Delos, as well as other Athenian columns, all with smooth spira drums and rudimentary form].

Capital: Cym-10 - The capitals were of the palm leaf variety with leaf-ends similar to the flat-rounded leaf-cyma type.

**Bld-31** The roofed Massiliot Treasury (West of the Athena temple on the *Terasses Orientalis*, Sanctuary of Athena), Delphi.

Date: Soon after Building XVI [the so-called Klazomenaean Treasury], [ie soon after *ca* 528 BC] (Gruben, 1961, p.135; 1966, p.78). Other dates: De la Coste-Messeliere's (1957, p.330) date is 530-10 BC; Akurgal (1961, p.287 and note 15) between 533 and 500 BC. Pomtow (1913, p.48 (alternative number p.246)), mistakenly identifying this building as the 'Klazomenaean *Phylacus* temple', linked the date to a completion after the Klazomenaean Treasury [Which he thought to have been *ca* 550 BC]. Ohnesorg (1993a, p.23) is of the opinion that it is older than the Klazomenaean Treasury, ie 535-25 BC, or younger, ie 500 BC.

Description references: Dinsmoor, 1913, p.5-83, Fig.2-4, 9, 13; De la Coste-Messeliere, 1957, p.330, Plate 214-7; Pomtow (1913, p.1-49 (alt. p.199-247), Fig.22-3, 42, 50, 58, Table II [identified as the Klazomenaean *Phylacus* temple])

Capital: Cym-11

#### 2.4.1.4 Catalogue of relevant Aeolic buildings before and during the architectural datum of the stone, Ionic standard capital.

**Note:** Because there is no detail quantitative analysis of Aeolic buildings in the study other than of capitals and column interaxis where possible, and because detail

reference to capitals are available in the capital catalogue above, there is here mostly an indication of Betancourt's (1977) synopsis of references in order to prevent duplication, and new relevant information that has been forthcoming.

**Bld-Aeol1** Athenaion I (*Oikos*/peripteron (?)), Old Smyrna

Date: Seventh Cent BC (Betancourt, 1977, p.59). (See Bld-Aeol-3).

Capital: Not extant.

**Bld-Aeol2a** Early Archaic peripteral Temple I, Klopedi [Kolumdado, Nape], Lesbos

Date: Around 600 BC (Betancourt, 1977, p.82)

Capital: Not extant.

**Bld-Aeol2b** The newer, octastyle peripteral Temple II, Klopedi [Kolumdado, Nape], Lesbos

Date: 533-500 BC (Betancourt, 1977, p.85)

Capital: Aeol-5 [-6?]

Description references: Koldewey, 1890; Betancourt, 1977, p.82-7, Fig. 40-2); Kuhn (1986, p.77, Note 276) gives a synopsis of publications providing dimensions: He reports an interaxis of 2 150, Column bottom diam of 710 and a proportion of 3 : 1 for interaxis : Column bottom diam.

Notes: Betancourt's (1977, Fig.42) restoration of the façade shows columns as monolithic and with entasis, and he argues for a timber entablature. Kalpaxis (1986, p.73, Table 9.2-3) shows that the column drums were not finally dressed, but it is unclear whether the columns were going to be fluted or not. Most of the elements of the temple were built into the church of the Taxiarchis [Michael] and other buildings in the area. 13 capitals were accounted for, but the temple probably had more. Many of these have been lost again (Koldewey, 1890, p.44-5).

**Bld-Aeol3** The peripteral Athenaion II, Old Smyrna

Date: *Ca* 580 BC. See discussion at capital Aeol-1.

Building description: Kuhn, 1986, p.39-80, Fig.10 [Perspective].

- Kuhn's (1986) reconstruction of the temple shows a new version with leaf cyma acting as base, flaring down-and-outwards. His arguments for this arrangement, as well arguments of others, at Capital Aeol-1.

- The Smyrna temple columns are deemed by Kuhn (1986, p.43; 80) to be the first stone peristyle in east Ionian [Excluding the First Dipteros at Samos]. The stylobate is 32m x 19m. The amount of columns on the front are not known. However, in sympathy with Archaic Ionic peristyles and the Klopedi Temple he argues for an octastyle front with interaxis of 2 530 on the west *pteron*, and interaxis: Column bottom diam = 3 : 1 (Kuhn, 1986, p.75; [He does not exclude the possibility for seven columns with 2 950 interaxis and 3,7 : 1]).

Capital: Aeol-1

**Bld-Aeol4** Octastyle peripteral temple, Neandria

Date: *Ca* 550 BC (Wiegartz, 1994, p.125); Other dates: *ca* 550 BC (Wesenberg, 1971, p.138); 575-50 BC (Betancourt, 1977, p.73, Plate 41).

Building description: Clarke, 1886, p.1-7 [capital]; Koldewey, 1890; Akurgal, 1985, p.62-5; Betancourt, 1977, p.63-73 (with further references), Fig.30 [cella], 31 [peripteros - unscaled]; Clarke, 1886, p.1-20, [also 136,48??]; Wiegartz, 1994, p.117-32, Fig.4 [Scaled plan], Table 20-22.

Notes: The column spacings were larger in the front and back than on the sides of the peripteros.

- The small Aeolic capitals were used on the sides, the larger ones for the front (Wiegartz, 1994, p.82). The leaf cyma with spreading leaves were capitals in the interior colonnade. The bowl shaped leaf cyma pieces are accepted as being column bases (See arguments at capital Aeol-2).

Capital: Aeol-2

**Bld-Aeol5** Old Palace ['B'], Larisa (Bit Hilani)

Date: 550 BC (Betancourt, 1977, p.76)

Accepted date: 550 BC (Betancourt, 1977, p.76). Other dates: *Ca* 550 BC (Boehlau *et al*, 1940, p.143ff, Table 30).

Description reference: Betancourt, 1977, p.76-7 (with further references); Boehlau *et al*, 1940, p.143 flw, 153-6; Wesenberg, 1971, p.121, No.28 [Spira].

Material: Phocaeen stone.

Capital: Aeol-4

**Bld-Aeol6** The Archaic Athenaion, Larisa (*Oikos / peripteron* (?))

Date: 3rd qt Sixth Cent BC (Betancourt, 1977, p.81).

Description: Betancourt, 1977, p.79-81, Fig.33, 38.

Capital: None extant.

**Bld-Aeol7** Unidentified building, Eressos, Lesbos

Date: 550-500[>]BC (Betancourt, 1977, p.88)

Capital: Aeol-7

**Bld-Aeol8** Unidentified building [Not the 'Megaron'], Larisa.

Date: 575-50 BC (Wiegartz, 1994, p.125); Other dates: 575-50 BC (Betancourt, 1977, p.76, Plate 42).

Notes: Betancourt (1977, p.76) sees the Megaron at Larisa as a distyle *in antis* Aeolic building, and apportions capital Aeol-3 to it. Schefold's (In Boehlau *et al* (1940-2, p.161-2)) view is that the Megaron had had two Ionic columns *in antis* (Ion-54 - Theodorescu's (1980, Plate 1, No.16) date is approx 510 BC) which means that we can't see the Megaron as an Aeolic building. This view, corroborated by Mertens (1969, p.134), is accepted in this study. Moreover, an Archaic Ionic dentil moulding has been assigned to the Megaron (See Boehlau *et al*, 1940, Item No.50, Table 24c, 42a.I). Aeol-3 is not seen as of a votive column.

Capital: Aeol-3.

## 2.4.2 Chronological ordering of buildings from the Ionic sphere up to 525 BC

Table 2.6 Chronologically ordered buildings from the Ionic sphere up to 525 BC

No.	SITE	BUILDING	START-DATE	DATE REFERENCE USED	FORM-TYPE	CAPITAL NO	ACCEPTED CAP. DATE
<b>800 to 700 BC</b>							
1a	Samos	Heraion I	Start 8th Cent BC	Kienast, 1996, p.16	Naos	Not extant	-
2a	Ephesos	Artemision 'A' 1-III	From 8th Cent BC	Bammer, 1991, Fig.21	Peripteral <i>sekos</i> - Stone + timber	Not extant	-
3a	Iria, Naxos	Dionysos Temple I	From 8th Cent BC	Gruben, 1993, p.67	2 bay <i>oikos</i> I - stone + timber	Not extant	-
3b	Iria, Naxos	Dionysos Temple II	2nd half 8th Cent BC	Gruben, 1996, p.67	4 bay hall - Stone and timber	Not extant	-
4	Eretria	Apollonion (Daphnephorion)	8th Cent BC	Auberson, 1968, p.8	prostyle - Timber + mud on stone	Not extant	-
5	Tsikaliariou	Hearth Temple, Naxos	Geometric	Drerup, 1969, p.21	Anta or bilobal <i>oikos</i>	Not extant	-
<b>700 to 600 BC</b>							
1b	Samos	Hekatompedos IA	ca 700 BC	Kienast, 1996, p.16	In-antis: Surrounding colonnade discredited	(Kienast, 1996, p.23) Not extant	-
6a	Didyma	<i>Sekos</i> I (Didymeion I)	ca 700 BC	Tuchelt, 1987a, Fig.2a, 4	Stone <i>sekos</i> [timber peripteros ?]	Not extant	-
3c	Iria, Naxos	Dionysos temple Phase III	ca 700 BC	Gruben, 1993, p.102	Tetrastyle prostyle - Stone + timber	Not extant	-
7	Koukounaries	Athena Temple, Paros	after 700 BC	Gruben, 1989, p.165	Rectangular <i>oikos</i>	Not extant	-
2b	Ephesos	Artemision 'B'	?	Bammer, 1991	Peripteral <i>sekos</i> - Stone + higher colonnade	Not extant	-
8	Samos	South stoa	2nd half 7th Cent BC	Gruben, 1957, p.52, 61	Stoa - Timber [Gruben, 1957, Fig.1]	Not extant	-
1c	Samos	Hekatompedos II	ca 660 BC	Kienast, 1996, p.16	Prostyle - Surrounding colonnade discredited	(Kienast, 1996, p.23) Not extant	-
9	Miletos	Older Athena Temple	620 BC	Kalpaxis, 1976, p.64	Roofed in-antis [one column] 2 bay naos	Not extant	-
10	Prinias	Temple 'A', Crete	620 BC	Gruben, 1957, p.60	3 bay naos	Not extant	-
11	Didyma	South stoa	End 7th Cent BC	Akurgal, 1985, p.223	Stoa - Timber frame [Tuchelt, 1987a, Fig.6]	Not extant	-
12a	Delos	Supposed Naxian <i>pre-Oikos</i> "I"	Pre 600 BC	Galette de Santere, 1984	2 rather than 3 bay <i>oikos</i> [Central colonnade]	Not extant	-
<b>600 to 575 BC</b>							
13	Didyma	Unknown building	ca 600 [from capital]	Gruben, 1996, Note 13	Unknown typology	Preion-2	ca 600 BC
14	Delos	Artemision 'E'	ca 600 BC (< 1.3b)	Kalpaxis, 1976, p.76	Tetrastyle prostyle - Stone [timber?]	Preion-1 [?]	ca 600 BC
15	Ephesos	Marble Hekatompedos	ca 600 BC	Bammer, 1991, Fig.1	Naos <i>amphi-in</i> antis [?]	-	-
2c	Ephesos	Artemision 'C'	600-90/80 BC [check]	Bammer, 1984, p.172, Fig.83	Anta <i>sekos</i> with naiskos	Not extant	-
12b	Delos	Naxian <i>Oikos</i> ["IIa" rejected]	600-575 BC	Gruben, 1993, p.103	Roofed distyle in antis	Ion-24	Early 6th Cent BC
16a	Samos	North Temple I: Planning I-II	590-550 BC	Furtwängler et al (1989, p.4-6)	Siteworks only	Not applicable	-
3d	Iria, Naxos	Dionysos temple Phase IV	ca 580 BC	Gruben, 1996, p.67	Roofed tetrastyle prostyle	Ion-7	570 BC
			ca 575 BC	Ohnesorg, 1996, p.41			
1d	Samos	First Dipteral Heraion	ca 575 BC	Kienast, 1992	Roofed octastyle dipteron	Tor-1	ca 575 BC
17	Samos	N-west stoa	As Heraion III	Coulton (1976, p.280).	Stoa	not extant	-
<b>575 to 550 BC</b>							
18	Phocaea	Athenaion I	2nd qt Sixth Cent BC	Akurgal (1985, p.117)	Unknown	Cym-8	2nd qt 6th Cent BC
6c	Didyma	<i>Sekos</i> II (Didymeion IIa)	? (Complete 550 BC)	Tölle-Kastenbein (1994, p.56)	<i>Sekos</i>	?	?
19	Delphi	Cnidian Treasury	Ca 560 BC	Gruben (1961, p.135)	Roofed distyle in antis	Cym-13	ca 560 BC
6b	Didyma	Didymeion IIb early phase [?]	Not 600 BC [Schneider, 1996]; phase < 550 BC [?]		Inner peristasis Archaic Didymeion	Tor-2	Contested: <550 BC
2d	Ephesos	Artemision 'D' (Kroisos)	560 BC	Bammer (1991, p.64)	Hypaethral octastyle dipteron	Ion-16	<550 BC
20	Naukratis	Milesian Apollonion I	ca/< 550 BC	Pedersen (1983 p.116)	Unknown	Cym-1	< 550 BC
12c	Delos	<i>proston</i> , Naxian <i>Oikos</i>	Just before 550 BC	Courbin, (1987, p.74)	Tetrastyle- prostyle (alteration)	Ion-5	Just < 550 BC
<b>550 to 525 BC [Pioneer Phase or First Generation cut-off line = 525 BC]</b>							
21	Myus	Lower Temple	550 BC	Weber (1967, p.139)	Roofed hexastyle peripteron	Ion-15	ca 550 BC
6d	Didyma	Dipteron of Didymeion IIb	ca 550 BC	Tuchelt (1991, p.21)	Hypaethral octa/decastyle dipteron	Ion-28	540-30 BC
22	Delos	Naxian Stoa	550-40 BC	Martin (1972, p.314)	Stoa	Ion-25	550-40 BC
23	Palati, Naxos	Apollonion [Hekatompodon]	550-24 BC	Zaphiropoulou (1988, p.14)	Roofed hexastyle peripteron	Cont-2 = not extant - upper portion not completed	
24	Samos	South Temple I	545-35 BC	Furtwängler et al (1989, p.61)	Nonastyle peripteron (excl east)	Ion-73	545-35 BC
16b	Samos	North Building I/Phase III	545-35 BC	Furtwängler et al (1989, p.7,57)	Flat-Roofed tristyle prostyle	Cyma fragments apportioned to Phase IV building	
1e	Samos	Heraion IV (Polycrates)	540 BC on, + 500>BC	Kienast (1992, p.185)	Unfinished octastyle dipteron	Ion-58	500>/Cym-9-ca522 /Cym-5-<522 BC
25	Samos	Monopteros II	540 BC [as above]	Kienast (1992, p.188)	Tristyle monopteron	Ion-39	500> BC
26	Phanai, Chios	Apollonion	3rd qt 6th Cent BC	Boardman (1959, p.184)	No reconstruction possible	Ion-26	525-500 BC
27	Athens, agora	<i>Enneakrounos</i> (Peisistratos)	3rd qt 6th Cent BC	Merrit (1982, p.88, 92)	Tetra(?)style fountain house	Ion-74	3rd qt 6th Cent [540-30] BC
28	Paroikia, Paros	Temple 'A'	530-20 BC	Gruben (1982a, p.229)	Roofed tetrastyle prostyle	Cont-1 = Lost	
29	Sangri, Naxos	Demeter temple	530-20 BC	Zaphiropoulou (1988, p.17)	Roofed pentastyle in antis	Doric capital - Ohnesorg, 1996, Fig.7	
30	Delphi	Klazomenian treasury	ca 528 BC	Gruben (1961, p.135)	Roofed distyle in antis	Cym-10	ca 528 BC
31	Delphi	Massiliot treasury	>528 BC	Gruben (1961, p.135)	Roofed distyle in antis	Cym-11	>528 BC

Note: We should take note of a supposed Early Archaic temple on Paros (Gruben, 1997, p.411) and a *amphi-prostyle* temple 'X' (Gruben, 1997, p.413), not included due to lack of detail.



## 2.5 OTHER ARTIFACTS BROUGHT INTO RELATION WITH THE IONIC CAPITAL

### 2.5.1 Identifying and demarcating further Hellenic artefacts related to an evolutionary view of the origin of the Ionic capital

From an overview of current evolutionist thought on the antecedents of the Ionic capital, the following artefact types are identified as containers for the embryonic phase of the Ionic capital: Monumental votive kettle and vessel stands (bronze, pottery, composite types and possibly already stone), votive free-standing and statuary columns (timber and *terracotta* and stone), and religious buildings. The author would suggest adding the altar. These, together with monumental sculpture, were the types in which the main aspects of religious devotion were contained: The sacrifice, the communal meal, shelter for the deity, the giving of thanks and the conclusion of religious contracts with the deity, and the community related organisational work of the fraternities. Due to the religious nature of the artifacts and the subsequent value Hellenic society placed on conserving them even if they were not replaced by others, one may suspect these artefacts as being the prime vehicles for a traditive conveyance of religious iconography. Architecture is a difficult case in this regard, due to the continuous enlargement and rebuilding of the temple over time. Even though the re-use of elements in larger scale buildings was not feasible, one would nevertheless expect a similar traditive approach to building typology and elements in subsequent phases of temples. A survey of Hellenic religious building typology, as well as the style typology, tells us that this was indeed the case.

The abovementioned artifacts are identified as being the most probable bearers of elements related with the Ionic Order and its capital within the Hellenic sphere.

### 2.5.2 The problematic of posing synchronic relations between artifacts from differing cultural enclaves

As is well known, and also demonstrated in this study, artefacts do not appear without a context, both abstract and concrete. Furthermore, groupings of artefacts like the abovementioned pottery, votive kettles, bridges, sculpture, architecture and the like may be discerned as well definable groupings or types more often than not showing chronologically traceable evolutionary changes in inherent qualities which include iconographical content, form, level of execution and so forth. Discernment of particular morphology and syntax included in works have in the past been instrumental in defining style groupings, as aide in defining production date, and bringing works from various types in relation with each other. Such overarching groupings may eventually also be brought together as belonging to certain cultural enclaves, and sub-classified into periods within such enclaves. In the history of the search for the antecedents of the Ionic Order and capital, many researchers have brought to the table examples of artefacts which due to single elements or overall constituency relate to the Ionic capital, and also due to a chronological relevance to the question at hand. In most cases these studies did not move forward the issue.

In order to bring into relation artefacts from various cultural enclaves, be they chronologically and/or geographically separated, firstly a certain level of contact and recursivity between cultural enclaves, be it diachronic or synchronic, must be demonstrable from contexts extrinsically or intrinsically related to the artifacts. Also, the nature of the contact and the chronology of such contact must be proven, and the certainty range pertaining to the date/s be known in the case of synchronic contact. Thirdly, identification of the transfer of stylistic elements or traits should be guided through thorough analysis of the style evolution inherent to the originating type, together with its eventual typological ordering, similar to the work done in this study. Only if a singular typological correspondence is identified within the parameters stated above, may transfer of type be positively identified.

In the endeavour to uncover the antecedents for the Ionic capital there are even more considerations. Due to the capital's occurrence in both the minor arts and architecture, the various intrinsic roles of the capital form (or its elements) within the schema of the artifact types within which they occur, with the tectonic or aesthetic demands on the form within a bigger schema, should be taken into account.

There are also hindrances to the exercise. For many historical cultural enclaves the typological ordering of artefactual types is not completed to the level one would require to come to definite conclusions regarding transfer of form or style. Also, even in the presence of established dates which could in a way stabilize a stylistic chronology in a time continuum, the range of accuracy of dating often cannot fall below 20 years, with serious consequences for the intrepid style matcher! In the final analysis, the fit between contextual meanings inherent to the originating and receiving artifacts should also be demonstrable. Knowledge regarding contextual meaning is often lacking. With this in mind, it is proposed that this study may in the future be used as a pointer towards artefacts which may be possible contenders, and that notice may be given in the study as to the added importance for further research to be concentrated on those typological groups. Whereas the 19th Century researchers mostly had to deal with describing, classifying and understanding a total field of Antique and Classical cultural production, our century became increasingly marked by specialisation in individual research enclaves and even in terms of production groupings (ie types [sculpture, architecture] or materials [pottery, metal etc]). The only way to possibly move forward is in a cross-disciplinary, multi-specialist way, and through the increased flow of research accross specialist boundaries. It is clear that no specific conclusions may be reached now, and the reader is asked to view the last portion of Chapter 4 in this light.

## 2.6 CONCLUSION

In this Chapter a satisfactory model is reached for the description and ordering of the capital of the Archaic Ionic Order and votive column and their pre-forms, and which is not only suitable for further typological interpretation, but which adds new data to the current *corpus* of early Ionic capitals.

Table 2.3 Chronologically ordered inventory of relevant Archaic non-standard Ionic, Aeolic, Aeolicising, cyma standard Ionic and torus capitals (625 up to 489 BC).

No.	ORIGIN	FUNCTION	DATE USED	DATE REFERENCE USED	No.	ORIGIN	FUNCTION	DATE USED	DATE REFERENCE USED
<b>625 to 600 BC</b>					<b>625 to 600 BC</b>				
Preion-1	Delos	Artemision E (?) [Rectangular timber columns]	Before 600 BC	Gruben, 1996, p.64	Cym-5	Samos	Cells capitals, Herion IV	[?]<522 BC	Pedersen, 1983, p.112
*Ion-1	Naxos [Artistic datum]	Votive column, Demeter and Apollo sanctuary, Sangri	End 7th C BC <u>establ</u>	Gruben, 1989, p.164	Cym-9	Samos	Inner ring cyma capital, Herion IV	[?]<522 BC	Pedersen, 1983, p.112
[In Guben (1993, p.102) there is an assertion that it is from after mid 7th C BC]					Not made	Palati, Naxos	Helektompedos [Entablature incomplete - See Cont-2]	ca 530 BC	Gruben, 1982a, p.229
<b>600 to 575 BC</b>					Lost	Paros	Temple 'A' [See capital Cont-1]	530-20 BC	Gruben, 1982a, p.229
Preion-2	Didyma	Unknown building [Rectangular timber columns]	ca 600 BC	Gruben, 1996, p.63	Ion-30	Athens	Votive column	530 BC >	Boardman, 1959, p.206
Iver-3	Delos	Votive column, Delos.	Early 6th C BC	Kirchhoff, 1988, p.220	Ion-76	Athens	Votive column (Ameisias)	530-28 BC <u>establ</u>	Raubitschek, 1938, p.166
Iver-4	Delos	Votive column, Delos.	Early 6th C BC	Kirchhoff, 1988, p.14 [propr]	Ion-34	Athens	Votive column	ca 530 BC	Raubitschek, 1938, p.166
Ion-22	Aegina	Sphinx column, sanctuary of Aphaia	Early 6th C BC	Gruben, 1989, p.169, Note 25 Gruben 1993, Note 8	Cym-10	Delphi [ex east Ionia]	Klasoneseion Treasury, Apollo sanctuary	ca 528 BC	Gruben, 1961, p.135
Ion-4	Naxos	Votive column, Delos.	Early 6th C BC	Kirchhoff, 1988, p.13 [propr]	Cym-11	Delphi [ex west Ionia]	Masiliot Treasury, Apollo sanctuary	>528 BC	Gruben, 1961, p.135
*Ion-24	Naxos [Archit datum]	Interior capital (And pronaos), Naxian Oikos, Delos	< 580 BC	Ohnesorg, 1996, p.41	Iver-6	Paros	Votive column, Thesmophorion, Paros.	ca 525 BC	Ohnesorg, 1993a, p.117
Aeol-1	Old Smyrna	Incomplete temple of Athena I	[ca 580] after Alyattes	Kuhn, 1986, p.80	<b>525 to 500 BC</b>				
Ion-9	Naxos	Votive column, sanctuary of Demeter and Apollo, Sangri	580-70 BC	Kirchhoff, 1988, p.19	Ion-26	Chios	Temple of Apollo Phanaiois [Started 550-25 BC]	525-500 BC	Boardman, 1959, p.184
<b>575 to 550 BC</b>					Ion-66	Delphi	Votive column [from Paros?]	525-500 BC	Hahland, 1964, p.194
Tor-1	Samos	First Dipteros (Herion III)	575 BC	Kienast, 1992; Hendrich, 1997	Ion-72	Cyrenaica, N Africa	Rock cut tomb	525-500 >	Boardman, 1959, p.208 and Mason, 1978, p.169
Cym-8	Phocaea	Athenion I	575-50 BC	Akurgal, 1985, p.117	Ion-67	Athens	Votive column, akropolis	520 BC	Theodorescu, 1980, Pl.1 and Mason, 1978, p.155
Aeol-3	Larisa (o-t-Hermos)	Building	575-50 BC	Betancourt, 1977, p.76, Pl. 42	Ion-35	Athens	Votive column, akropolis	ca 520 BC	Bormann, 1988b
Ion-7a-b	Iria, Naxos	Temple of Dionysos IV [Bldg start 580 (-575) BC]	570 BC	Gruben, 1989, p.172; 1993, p.104	Ion-81	Athens	Votive column, akropolis	ca 520 BC	Mason, 1978, p.158
Ion-6	Delphi	Naxian sphinx column, Delphi	570-60 BC	Amandry, 1953, p.26, 31, 199 and Gruben, 1993, p.104	Ion-12	Smyrna	Votive column, Halikarpinar, Smyrna	[?] 520 BC	Gruben, 1963, p.174. note 168
Ion-11	Delos	Capital found in the Competalast agora, Delos.	575-50 BC	Kirchhoff, 1988, p.24 [propr]	Ion-36	Athens	Votive column (Alkimachos)	520-10 BC <u>establ</u>	Jacob-Felsch, 1969, p.119 and Raubitschek, 1940, p.18
Cym-2	Didyma (Jeronda)	Votive column	575-50 BC	Kirchhoff, 1988, p.198	Ion-42	Massalia	Architectural	520-10 BC	Benoit, 1954
Cym-3	Didyma	Votive column	575-50 BC	Ohnesorg, 1993a, p.111	Ion-32	Delos [Naxian?]	Corner capital Propylon II	520-500 BC	Gruben, 1997, p.368
Cym-14	Paros	Votive kouros column	575-50 BC	Ohnesorg, 1993a, p.113	Ion-27	Delos [Naxian?]	Inner capital, Propylon II (ac 'Nieborow', Warsaw)	As Ion-32, or 500-BC	Gruben, 1997, p.370
Ion-10	Paros	Votive column (sep <i>camalis</i> ), A. Katapoliani, Paros	570-50 BC	Ohnesorg, 1993a, p.113	Ion-48	Delos [Naxian?]	Outer capital, Propylon II (found Phcia, Olympia)	As Ion-32	Gruben, 1997, p.370
Ion-18	Delos	1st Naxian sphinx column from the Artemision of Delos	570-50 BC	Ohnesorg, 1993a, p.113	Ion-37	Posidonia-Paestum	Athens temple	510-500 BC	Kirchhoff, 1988, p.40 and Theodorescu, 1980, No.74
Ion-19	Delos	2nd Naxian sphinx column from the Artemision of Delos	570-50 BC	Ohnesorg, 1993a, p.113	Ion-52	Thasos	Anta column of an unidentified temple	510-460 BC	Martin, 1972, p.323
Ion-20	Delos	Votive column (theatre)	ca 560 BC	Martin, 1973	Ion-53	Thasos	Anta column of an unidentified temple	510-460 BC	Martin, 1972, p.323
Cym-13	Delphi	Quindim Treasury	ca 560 BC	Gruben, 1961, p.135	Aeol-6	Klodepi or Mytilene	Temple at Klodepi or Mytilene	Late 6th C BC	Betancourt, 1977, p.87, Pl. 50
Ion-16	Ephesos	Artemision TD	<550 BC	Bammer, 1984, p.76 and Fig.84	Ion-51	Miletos-Thessaloniki	Dionysios temple	Late 6th Cent BC	Bakalakis, 1963, p.31
Ion-5	Naxos	Proton ( <i>east</i> ) of the Naxian oikos, Delos	Just <550 BC	Courbin, 1987, p.74	Ion-63	Miletos	Votive column	Still 6th Cent BC	Koenigs, 1980, p.58 [propr]
Lost	Naxos?	Column of Athena Polias, Delos	Just <550 BC	Gruben, 1989, p.166, Note 12	Ion-38	Thasos	Votive column	End 6th Cent BC	Kirchhoff, 1988, p.42 [propr]
Cym-1	Naukratis, Egypt	Apollonion I / votive column	< 550 BC	Pedersen, 1983, p.116	Ion-40	Gela	Building	End 6th Cent BC	Barletta, 1983, p.249
Tor-2	Didyma	Limestone phase Didymeion [Start bldg ca 600 BC by Schneider (1996, p.83) contested: <550 BC]	< 550 BC		Ion-43	Miletos [Milet city]	Architectural	End of 6th Cent BC	Koenigs, 1979, p.194
<b>550 to 525 BC</b>					*Ion-75	Athens	Kakrops column [?] (north wall akropolis)	ca 530	[See Boardman, 1959, p.206]
Aeol-2	Neandria	The temple, Neandria (Acropolis)	ca 550 BC	Wiegartz, 1994, p.125	Ion-60	Phocaea	Rebuilt Athenaion II	Now placed as Late Archaic by Korres (1997, p.95)	
Aeol-9	Aegae (Pergamon)	Possibly a temple.	As Aeol-2	Radt, 1991, p.482	Aeol-7	Ereos	Unknown architectural application	End of 6th Cent BC	Alurgal, 1985, p.117 [contested]
Iver-2	Paros	Peripterasterion	ca 550 BC	Ohnesorg, 1993a, p.117	500 to 480 BC			550-500 > BC	Betancourt, 1977, p.88.
Cym-12	Paros	Votive <i>kyros</i> column	ca 550 BC	Ohnesorg, 1993a, p.111	Ion-77	Speculative	<i>In antis</i> temple/treasury, Labrynda [Mylasa]	ca 500 BC	Thieme, 1993, p.49-50
Cym-4	Thasos [?]	Probably a votive <i>kyros</i> column, Delos	Mid 6th Cent BC	[Kirchhoff, 1988, p.200]	Ion-80	Miletos/Didyma	Votive lion column [Mikros], unknown site.	ca 500 BC	Koenigs et al (1978/80, p.164)
Ion-23	Thasos	Votive column	Mid 6th Cent BC	Kirchhoff, 1988, p.28-9	Ion-58	Samos	Complete entablature Herion IV [Start-up 540 BC]	2nd phase 500>BC	Kienast, 1992, p.186
Ion-17	Paros	Votive column (Archilochos/Ag Tris Eklesies)	ca 550 BC [?]	Ohnesorg, 1993a, p.114	Ion-59	Samos	Monopteros II [If linked to the Herion IV 2nd phase]	500>BC	Kienast, 1992, p.188-9
Ion-69	Paros	Votive column, Paros (Modern wall antique city)	as Ion-17	Ohnesorg, 1993a, p.115	Ion-61	Syracuse	Ionic temple in the Athens sanctuary	500>BC	Barletta, 1983, p.88-90
Aeol-4	Larisa (o-t-Hermos)	Old Palace (building B), Larisa (On-tho-Hermos)	530 BC	Martin, 1973, p.377	Ion-44	Ephesos	Temple (found St John Basilica, Selcuk)	500>BC	Linked to Ion-77, Ion-59
Iver-12	Delos	Votive column	530 BC	Weber, 1967, p.139	Cym-6	Didyma	Votive column	ca 500 BC	Kirchhoff, 1988, p.201
Ion-14	Kyrene	Sphinx column of Kyrene	530 BC >	White, 1971, p.52	Ion-31	Selinus	Votive column	ca 500 BC	Theodorescu, 1974, p.46[propr]
Ion-15	Myus	Lower temple	ca 530 BC	Gruben, 1989, p.169	Ion-56	Tamassos, Cyprus	(prob) votive column (later game table)	Early Fifth Cent BC	Kirchhoff, 1988, p.54 [propr]
Ion-64	Sangri, Naxos	Votive column	ca 530 BC	Gruben, 1989, p.169	Cym-7	Samos	Votive column	Early Fifth Cent BC	Buschor, 1957, p.20
Iver-11	Oropos	Votive column	Just > mid 6th C BC	Kirchhoff, 1988, p.216	Ion-39	Histria	Temple 'A' (Zeus Potisus?)	500-490 BC	Theodorescu, 1968, p.285
Iver-7	Athens	Votive column, Athens.	550-500 BC	Betancourt, 1977, p.100.	Ion-46	Metapontum	Temple TD	500-490 BC	Martens, 1979, p.128, 138-9
Iver-8	Athens	Votive column, akropolis	550-500 BC	Betancourt, 1977, p.102.	Ion-50	Napoli	Temple of Artemis	500-480 BC	Roux, 1961
Ion-45	Miletos (Yeniköy)	Temple (?)	ca 550-500 BC	Koenigs, 1979, p.189	Ion-55	Halicarnassus	Free-standing anta column	500-480 BC	Martin, 1959
Iver-9	Athens	Small building or sanctuary on the akropolis	550-525 BC	Betancourt, 1977, p.104.	Ion-54	Larisa (O-t-Hermos)	Late Archaic	Martens, 1969, p.134	
Ion-29	Ephesos	Temple (found in the Byzantine aqueduct)	550-25 BC	Kirchhoff, 1988, p.87 and Theodorescu, 1980, Tab.1, No.2	Ion-78	Miletos	Uncompleted Temple (Mangrovevtepe, Milet)	ca 500 [c 494] BC	Weber, 1996, p.86
Ion-74	Athens [+East Ionia]	<i>Emmenonion</i> in the Athenian agora	550-25 [40-30] BC	Merrit, 1982, p.88, 92	Ion-21	Athens	Votive column (?) [Berlin 997]	<489 BC	Raubitschek, 1938, p.170
Aeol-5	Klodepi	Late archaic (Apollo?) temple, Klodepi.	Last 3rd 6th C BC	Betancourt, 1977, p.85.	Ion-62	Athens	Votive column (Nike of Callimachus)	490-89 BC <u>establ</u>	Jacob-Felsch, 1969, p.127
Ion-25	Delos	Naxian stoa	550-40 BC	Martin, 1972, p.314	[Note: These Archaic capitals not placed due to lack of knowledge regarding dates or place of origin are so indicated in the catalogue. Ion-10, -41, -57 and -68 are not placed chronologically, but their dates are locked into after the analyses. Ion-13 and -41 cannot be placed chronologically. Due to a lack of precise dating Cym-14, -15, -16, -17 and Iver-10 are also not placed here. Iver-10 can also not be placed geographically.]				
Ion-82	Didyma	Votive column	< Ion-28	Gruben, 1963, p.142					
Ion-73	Samos	Anta capital of South temple	545-35 BC	Furtwängler et al (1989, p.61)					
Iver-13	Athens	Votive column [No.3847]	540 BC	Raubitschek, 1938, p.164					
Ion-28	Didyma	Didymeion/Apollonion II (Building start 550 BC)	ca 540-30 BC,	Tuchelt, 1991, p.21					
			Before frieze	Schattner, 1996, p.41					
Iver-5	Paros	Votive- or architectural	540-30 BC	Ohnesorg, 1993a, p.116					