

A Databank for Archaeological Research
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In order to obtain a result having any real value, it is not enough to grind out calculations or to have a machine for putting things in order: it is not order only, but unexpected order, that has value. A machine can take hold of the bare fact, but the soul of the fact will always escape.

Jules Henri Poincard
Science and Method (1909)

Many areas of research, archaeology only one them, can be characterized as amassing great quantities of data on the one hand and attempting to reduce it to an understandable set of information on the other. For this task, the computer is a natural and invaluable tool. In the specific area of archaeology, computers are routinely used to synthesize large collections of raw data through tabulations and statistics. Excavations frequently report "computer-aided" research. Libraries can offer aid in computer-assisted bibliographical searches although there is as yet no organized computer-based search tool for archaeology.

Since computers are a major component of my work, both as an end product (systems analysis for developing administrative systems) and as a clerical tool (word processing, databases to organize projects and even mundane "tickler" files to help keep my life in order), and since my archaeological research long ago incorporated the help of the computer, it was natural for me to expect it to organize the assorted material I was gathering on Italian Bronze Age sites.

At the outset there were certain tasks I knew were required: facility for maintaining site detail, including names, information on location (general and specific), chronology, material remains, references, and museum collections. Freetext as well as specific search fields were also requirements.

Over the last 18 months, I have developed a set of coordinated files which enable me to keep track of prehistoric Italian sites (over 1100 currently are in the files) as well as generate reports, prepare for studies and discover where to look for specific ideas. This set of files, referred to as the Databank, is

the subject of this paper.

The project began with only limited aims - I simply needed to list sites which I had already researched. Of course, associated with these sites were to be a few pertinent facts - specific assemblage type and various bibliographic references. Fortunately I had at my disposal a data management tool, software called Focus, which easily allows files to be developed and rebuilt. Truthfully, I don't know how many times I have restructured these files, but at least a couple of dozen times. It is true, however, that the larger the files become, the less often they are restructured.

Although this product, Focus, is an easy tool to learn if you are at all comfortable with programming or the idea of computers, it can be deceptive. Even as an experienced computer professional, I still find myself with problems. Because it is so 'user-friendly', much goes on behind the seemingly simple commands invoked, and that is the danger area. This paper, however, is not about Focus, or how the databank was developed with a specific product. Other software products are available, the merits of which are outside the scope of this paper; my aim was not to find the best product but to develop my archaeological research.

To date, there has developed a set of coordinated files each itself a set of descriptors appropriate to its own specific entity. The main file, called ITALY, is comprised of descriptors concerned primarily with geographical, chronological and cultural characteristics; it depends on CATALOG and MUSEUM for details of bibliographical references and museum holdings (Figs. 1 and 2). Each record in ITALY is a single site; each record in MUSEUM a single museum; and each record in CATALOG a separate bibliographic reference. Although designed specifically as a database for published site information, I have since added separate files for excavation records (Fig. 3). This last group will doubtless enlarge as time allows and need dictates. Since I am not addressing the recording of excavation material, the discussion will center on the first three files.

Before turning to these files specifically, it may be valuable to consider briefly some general thoughts on systems analysis. The needs of operating systems (in this environment, excavation record-keeping) are quite different from those of decision-making or interpretive systems, which are developed to provide a foundation for a holistic comprehension rather than to provide daily logs, reports and quantitative data pertinent to the excavation process. The design of these two system types requires entirely different approaches, although one must complement, indeed draw from the other. One could argue that the differences are no more than the differences between data and information where data is quantitative, derived from measurement or observation, while information is derived from data combined to give useful knowledge. When raw data in an operating system is selected and analyzed, the results are candidates for the

interpretive system. (This information system, clearly, can only be as useful as the raw data is sound and complete and the analyses trustworthy.) The differences between data and information are fundamental to the design of computer-based systems for archaeology (as indeed for any other area of research) and must be kept in mind as systems are designed, developed and used. Furthermore, information systems in general are best designed as a function not only of use but user and context. For this reason, the developing information system discussed below is driven by my own interests.

Figures 1 and 2 present the files or databases from both physical and logical views. Physical views are simply a representation of the actual, physical set of files. Logical views present conceptually how the records may be viewed. For example, it is possible to consider data available by site (or record in ITALY) which includes bibliographic references as well as museums holding the material. On the other hand, it is possible to consider a museum by the sites represented in its holdings (Fig. 7 for the former, Fig. 4b for the latter).

The two most important needs, often antithetical, are for free-form text and easy search arguments. Much data can be reduced to straightforward ideas which can be retained in code or table-driven form. This use reduces space requirements in a file and provides a set of specific choices for recording. For example, regardless of whether a site is described as a hut-bottom or a capanna or a settlement, it is clearly not a burial. Space can be reduced through the use of a table which indicates habitation as opposed to burial; more significantly, all habitation sites can be easily retrieved through the search for a single variable. Table-driven fields, then, reduce space requirements, enforce a more consistent approach to record-keeping, and provide ease of search. It is important, however, not to lose the distinction between hut-bottom and settlement. Too rigid an adherence to codes alone does not allow differences to be expressed. Eventually a balance must be struck between classifiable information and free text - encoding rules should be as infrequent as possible, since the existence of a set of choices limits the description, and even the interpretation of the information. Free text, on the other hand, clearly limits quick retrieval: although it can be searched for specific patterns, increases in time and dollar investments must be expected. And even then it may not always be possible to find the desired concept (particularly if no thought had been given to it ahead of time). How many people call a cup a bowl, spell differently, refer to tombs instead of a necropolis, habitation instead of settlement, or house instead of hut bottom?

The list, of course, can go on ad infinitum. What has developed here, and continues to develop, is a balance between personal idiom and more rigid classification, where one can easily retrieve all burial situations regardless of how the excavator labeled them, or all occurrences of assemblages which may be of a certain cultural type (as long as the information has been

recorded). In the context of Italian prehistory, this means, for example, a site assemblage termed Laterza, Cellino, and even Asciano by different archaeologists should be retrieved on a search of any of those types.

Tables 3-5 show some of the encoding possibilities employed. A quick glance will show that they are simplistic, intended only to provide a framework, since the aim is not to have the computer force an interpretation but allow one.

The primary categories of information currently available in ITALY are: geographical, chronological, artifactual, and interpretive. Supporting roles are played by references and museums, in turn supported by CATALOG and MUSEUM.

The geographical information includes area and province as well as local names, and, if available, longitude, latitude and sealevel. Associated freetext allows site peculiarities to be addressed and described. Should there be interest in specific characteristics (e.g., proximity to water, geological specifics), this could be incorporated.

Chronologically, the information is currently divided into five main groups: Neolithic, Early Bronze Age, Full Bronze Age, Late Bronze Age and Iron Age. Neolithic and Iron Age are not further subdivided, again, simply because of my current interests. Although I am specifically interested in the Bronze Age, I have not attempted a finer breakdown than the three broad periods since this is still a poorly understood area (Italy in the Bronze Age). The earliest part of the Bronze Age incorporates a period when Neolithic characteristics are still observed and yet those from the later, Bronze Age are clearly developing. It is referred to Eneolithic by many; others call the same period Copper Age since evidence for some of the earliest metal working indicates a possibly "pure" copper stage. There is not yet general agreement on the existence of a pure-copper horizon over a long enough period of time and a broad enough geographical area, I feel, to justify an age called Copper. My preference is to group together all assemblages which are outside of the pure Neolithic but do not belong to the Full Bronze Age into the general period Early Bronze Age: this includes those referred to as Eneolithic (or Copper Age) as well as earliest Bronze Age. This Early Bronze Age essentially excludes any Bronze Age site which can be clearly attributed to either the Full Bronze Age or the Late Bronze Age. There are still many gaps in our knowledge of this beginning age of metal and I am more comfortable with this loose arrangement until more is known.

The Late Bronze Age, in a similar fashion, is again used broadly; within are found the assemblages which have been termed Recent Bronze Age as well as those termed Final Bronze Age. Once again, neither interpretation nor evidence is clear-cut. It is within this broad group that we encounter Subapennine material, which is clearly later than a pure Apennine context, as well as

Protovillanovan, whose chronological (and cultural) relationship to Subapennine is not well understood.

Within each of the five main chronological periods currently employed, it is possible to assign a tentative relative chronological order, to describe the assemblage and to associate freetext.

Assignments to chronological periods are often supported by relative or absolute dating criteria. There are facilities to record these whenever available by specific type (e.g., Carbon 14,....) with associated freetext.

Artefacts can be recorded in detail in the related excavation files, or in the file ITALY, in one of two ways: described completely in free-form text in the interpretive/descriptive section or in a more defined intermediate fashion, in free text within a section assigned to its general class. The excavation files allow specific detail to be recorded and easily recovered, but for most sites this level of detail is unavailable or unwarranted. The intermediate way readily answers a search for general class but keeps down the overhead of recording details that are available only skeletally. The use is determined by the information available as well as the requirements of the situation.

Bibliographical references which have been studied or are simply known are an invaluable part of any research effort. The main file, ITALY, has facilities to associate any number of references with a record, that is a site. Because so many references apply to more than one record, the full bibliographic information is only retained once, in CATALOG, while a key and specific page and illustration numbers are associated with the record. Again, however, limitless freetext can be associated with every reference-site interface.

To round off the information on any site, it is useful to know where any or all of the recovered material is located. As with bibliographic references, and even more so, one museum may be associated with many site records. And so only keys are associated with a site, while museum name and city reside in MUSEUM. The interface between site and museum can also have limitless freetext.

The main driving force is clearly the site record. And so the file ITALY is considered the main file (Fig. 1). While museums would organize their holdings differently, and libraries organize their search requirements in another fashion, it is clear that every situation should be approached from its main requirement. As discussed above, the design of this system with ITALY as the main file does not exclude a view of the total information from either the CATALOG or MUSEUM perspective. Fig. 4 illustrates this approach.

Since the main file is ITALY, the site record, supported by the extensive CATALOG and MUSEUM, can be quite bare bones. The only space given to a record covers the primary names, geographical data, and indicates the associated periods. Only if further detail is required or available, whether chronological, artefactual, interpretive or bibliographical, is space used. It is worth repeating, however, that only through successive redesigns has the set of files reached this level. It is also important, I feel, to understand that these files were designed by a working archaeologist, with specific requirements as well as a solid data processing background.

Attached to these files are other minor files that I have developed and retain - they are really personal clerical files and are mentioned only to demonstrate the daily value of this project. One file was built to maintain map associations for a specific paper. Since close to two hundred sites appeared on the maps, it was useful to have the computer do the work. There is also a very small library file so that I know where a reference I have seen is located. Simple daily tasks made easy with a powerful tool.

The point of maps, however, brings up a major future/beginning development. In the planning stage is an additional facility to incorporate some form of automatic mapping. Through this I expect to generate maps as research requires. This facility will undoubtedly incorporate the use of extract files as well as available mapping software - nowhere do I wish to develop software if it exists; my aim has been, and will continue to be, to interpret archaeological data.

Because these files contain as much information as is available on a site (or rather, as I have had time to input), in many occasions, a study may be hampered by the size of the file or its basic organization. It is, however, a relatively easy task to generate smaller, extract files from the parent file and to perform statistical or tabulatory studies from these. Any expanded mapping will first select sites based on specific criteria and then generate a subset of information to feed into existing mapping routines. In a similar fashion, study of the excavated material from the Molise used files built from the parent set to feed into standard statistical routines.

Although this Databank remains to date a personal tool, the development over the last year and a half convinces me that it, or a similar version, could be developed to satisfy the needs of a group of archaeologists. I would like to briefly discuss some of the uses it has already: 1) reports, 2) interactive use, 3) coordination with excavated records, and 4) statistical or tabulatory studies from either ITALY or excavation records.

Table 2 lists the standard programs that have developed. Reports are routinely generated as the files are maintained, and include a basic site list by province (Fig. 5), an alphabetical list by name and known variations of the name (Fig. 6), and a

master list of sites and recorded detail (Fig. 7). This last report is shown here ordered by province within region. A necessity in any set of records is a key which uniquely identifies each record. Since names may vary, repeat or often have lengths ranging from 4 to 20+ characters, a made-up key was established. No matter how many sites can carry a similar or identical name, each one can be retrieved by its own key - there is, then, no confusion of subsidiary or dependent information. The last mentioned report, the master, can also be obtained for sites which have a specific assemblage or culture type reported. Fig. 8 illustrates examples of this selection for Apennine assemblages and bell-beaker (or campaniforme) ware. It is also possible to generate a simple site listing (comparable to Fig. 5) for any selection criteria required.

Standard reports on the support files are also routinely generated. Fig. 9 shows museum listings by city as well as by museum name. (As with the site record, it is good practice to have a simple unique key associated with each record in the file.) An additional, typical use of CATALOG is shown in Fig. 10, which presents a listing of references in CATALOG by primary author, as well as the results of a search of CATALOG for all occurrences of references by a specific author, whether primary or not.

It is also possible to use these files interactively, that is, while accessing the file directly through a terminal. Figure 11 shows two programs which allow this. The first searches the file for any name containing a given word or spelling. After a listing of all records which satisfy this choice, it is possible for the initiator of the request to call up a specific record through the second program by supplying the key. This feature was demonstrated in May 1981 at the conference, Crossroads of the Mediterranean, sponsored by Brown University and held in Bristol, R.I., where we arranged for telephone hook-up to the computer in Providence.

Figure 12 shows some examples of the basic reports generated from the excavation files. The name of the site is, of course, a part of the file ITALY and through coordination or cross-referencing is associated with excavation records. Figure 13 shows some sample reports: Figure 13a, an accounting of the general assemblage characteristics by general period (Tables 4 and 5); Figure 13b, a quick summary of the excavated materials from seven sites in the Molise Valley. It is also possible to count the number of records of a specific type of assemblage (e.g., Terramare or Apennine) by region or province if desired.

The purpose of these illustrations is to give an idea of the possibilities available. Many reports simply support basic research in this area, while a few may reveal some interesting patterns. Clearly these abilities can only be useful if the database exists and continues to grow. The larger these files become, the more sites, specific characteristics and references incorporated, the greater the value of the project.

The more I use computers, the more I am convinced of the part they can play in helping us interpret the raw data of archaeology, to understand the world. Help is the operative word - if we cannot open our eyes, we cannot understand; the computer is only a tool, an extension of man's mind and useless without the mind, its results demonstrating the bare fact, not the soul.

Table 1: Files

Name	No. of Segments	No. of Records
ITALY	8207	1126
CATALOG	1923	1209
MUSEUMS	86	86

Table 2: Partial List of Programs (* illustrated)

CATUPD	Update CATALOG
SITUPD	Update Sites
TITUPD	Update title in CATALOG
MUSUPD	Update Museum File
ABBUPD	Update Abbreviation File
ALPHASS	Alphabetical list of Sites by Assemblages Reported
MASTER	Master Report By Site Number
PROVSITE*	Master Report on Sites alphabetically within Province
SELECT	Master Report of Selected Sites
ASSELCT*	Report on Sites with Selected Assemblage
SITELIST*	Basic Site List
SITDSPLY*	Interactive Display of Site Information
SITSRCH*	Interactive Search for Site(s)
ALPHA*	Alphabetical List of Sites by Names and Variants
PERCENT	Percent of Sites by Type Across Period
PERCENT1	Percent of Sites by Area by Type Across Period
PERCENT2	Percent of Sites by Type Across Period for requested Area
SITCNT1	Count of Sites in IDB by Area by Period Across Type
SITCNT2*	Count of Sites by Type Across Period
SITCNT3	Count of Sites by Area Across Period
ABBRV RPT	Alphabetical list of abbreviations used
ALPHAUTH	Catalog numbers by author alphabetically
CATP RNTA*	Catalog Listing Alphabetically by Author
CATP RNTN	Catalog Listing by catalog number
MUSEUMS	Master Museum List
SPSSOUT	Build extract file for SPSS routines
SASBLD	Build extract file for SAS routines
DATALIST*	Report of basic excavation record
DECP RNT	Excavation material - decorated material
FORMP RNT	Excavated material - form/shape
HANDLES	Excavated materials - handles
MEASPRNT*	Excavated material - measurements
COUNTS*	Excavated material - counts

Table 3: Discussion Framework

General Discussion
Carbon 14 Dating Evidence
Thermoluminescent Dating Evidence
Relative Dating Evidence
Materials: Faunal
Materials: Floral
Materials: Worked Bone
Materials: Ceramic
Materials: Metal
Materials: Worked Stone
Reference Comments
Excavation Comments/Notes
Cross Reference Sites and/or Assemblages

Table 4: Chronology Framework

Neolithic Evidence
Early Bronze Age Evidence
Unspecified Bronze Age Evidence
Middle BRonze Age Evidence
Later Bronze Age Evidence
Iron Age Evidence
Historical Period Evidence

Table 5: Main Assemblage Groups

Burial, tomb...
Habitation, settlement, station...
Hoard
Sacred, religious...
Other

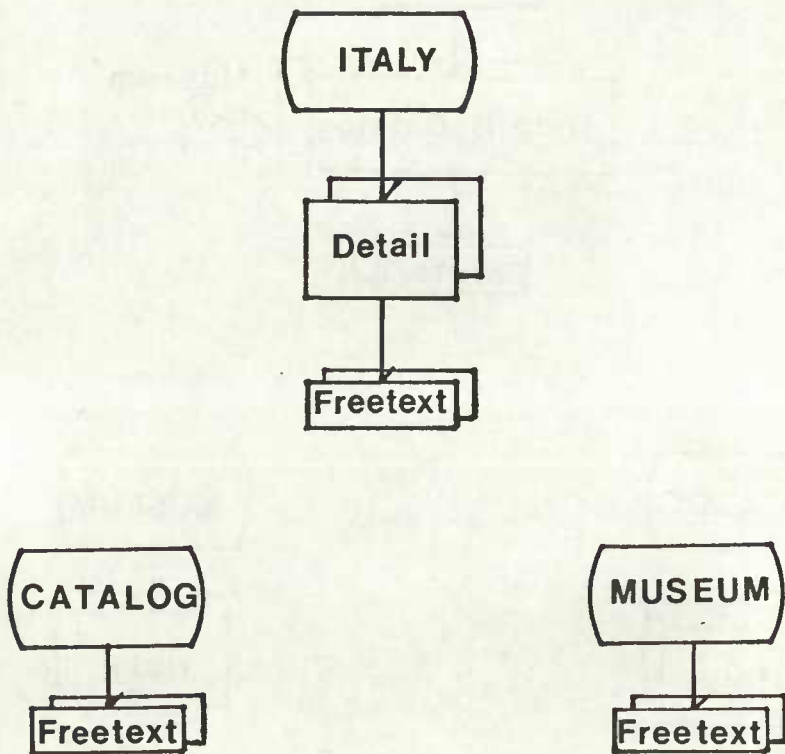


Figure 1: Physical Views (Information/Interpretive Database)

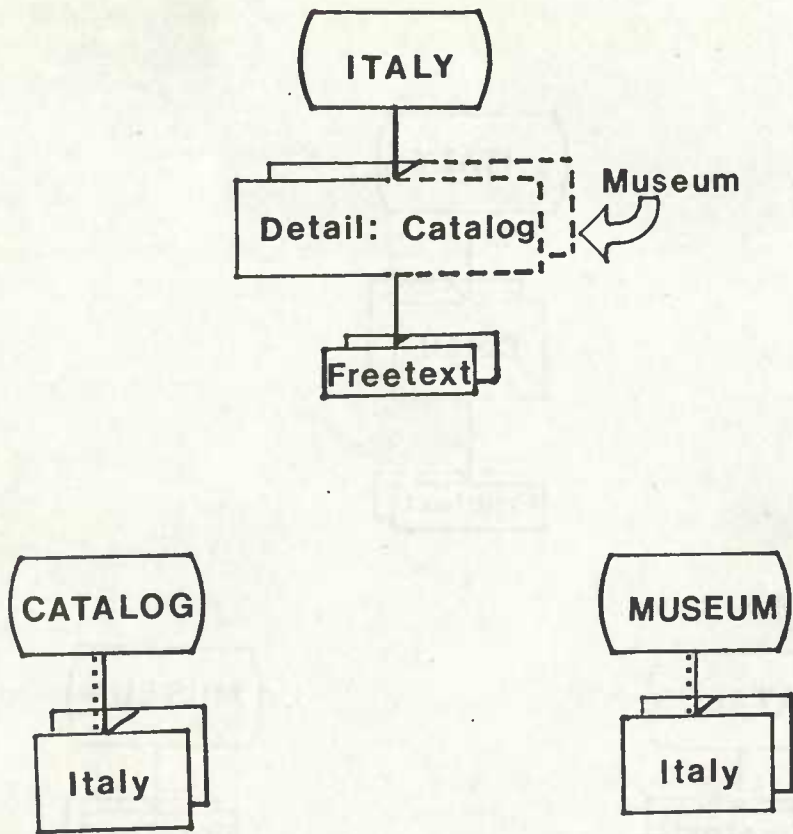


Figure 2: Logical Views (Information/Interpretive Database)

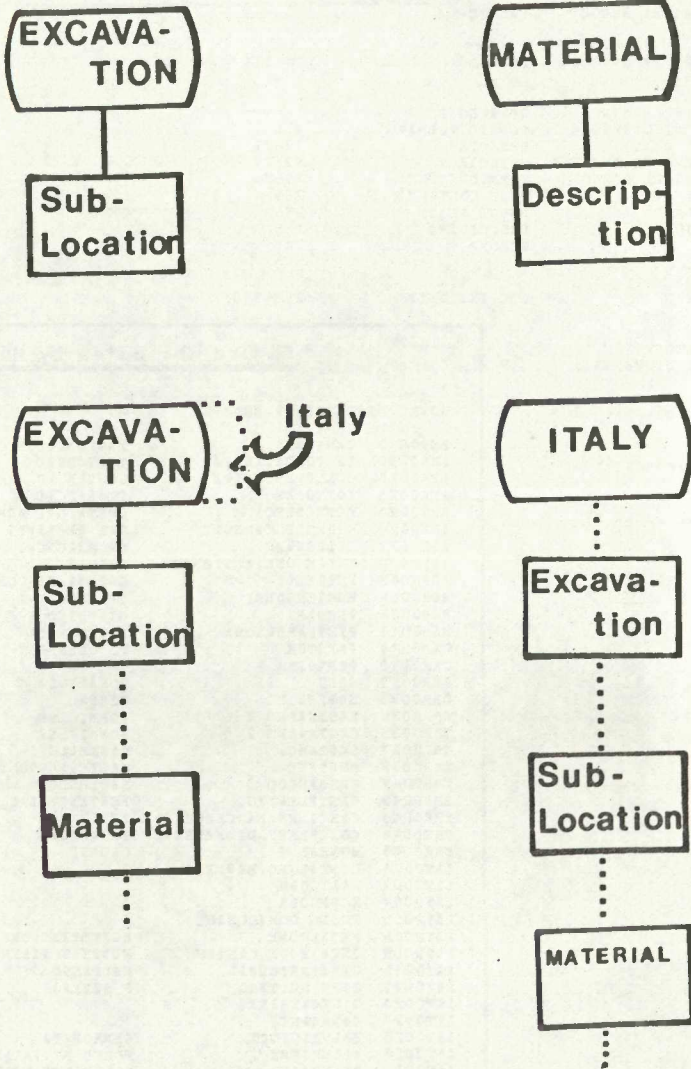


Figure 3: Physical and Logical Views (Excavation Record-Keeping)

Figure 4a: Sites by Reference

PA (72)			
TRN0001	MONTESI DI SERGO	TRENTO	
PA (73)			
TRN0001	MONTESI DI SERGO	TRENTO	91-111
PA (74)			
LAT0104	ISCHIA DI CASTRO	OPTACCHIC	
LAT0105	ISCHIA DI CASTRO	POGGIO VOLPARO	255
LOM0015	CA' DEI GRU	BRESCIA	73-77
LOM0016	SANT'ANNA DI FRASCIA	BRESCIA	73-77
TRN0001	MONTESI DI SERGO	TRENTO	73-74
TUS0125	PITIGLIANO	PIAN COSTANZI	255
TUS0126	PITIGLIANO	POGGI ALATI	255
TUS0127	BANCIANO	LASCONICO	255
VEN0013	PAVE	VERONA	74
PA (75)			
TRN0002	ROBAGNANO	LOC III & IV	295-315
PA (76)			
EMR0071	MONTE LECNI		
LOM0013	ISCLINE DI VARESE		

PADUSA (68)
VEN0014 MONTE MADABOSA

PADUSA (72)
VEN0014 MONTE MADABOSA

RITTATORE (56)
TUS0096 PIANCSA, ISOLA DI
TUS0104 PIANCSA, ISOLA

Figure 4b: Sites by Museum

MUSEO PICCINI DI ECHA

ABR0010	CANEBATA	TAGLIACOZZO
ABR0016	LA FORTELEZZA	TRICRETO
ABR0018	COLLE BRIGNILE	S BERN IN PEPILIS
ABR0023	TORTORETO	PIANACCIO
ABR0024	TRICRETO	COSTA DEL MONTE
ABR0025	S MARIE CARSOI	VAL DE VAREI
ABR0027	BOLCIGNANO	GR PICCIONI
ABR0030	VALLE DELLA VIBRATA	RIPOLI
ABR0043	ICZILLI	CORONA DE' COPPA
ABR0044	MONTEDONDI	LE SOCCIE
BAS0003	TINHARI	GIARDINO S FRANCESCO
BAS0011	PIETRAPEPIOSA	S GIOVANNI
CAN0017	PAESTUM	T. CEPERE
CAN0018	PERTOSA	
EMR0032	REDU	MONTEVOLA
EMR0033	SAVENA DI	CIRENO
EMR0034	CASINALBO 1	FORNIGINE
EMR0035	CASINALBO 2	FORNIGINE
EMR0037	GCRZANO	CASTELLO
EMR0038	MONTALI	CASTELNUOVO BANGONE
EMR0041	CASARLDO	SARROSETO
EMR0042	CASTELLAZZO	PONTANELIATC
EMR0043	CASTIGNE MARCHESI 1	FIDENZA
EMR0044	COLCIBARI DI BERSANI	RF SANZONI
EMR0045	BOVERI 1	CAORSE
LAT0001	CANTALUPO BANDELA	
LAT0002	PALIDORO	
LAT0004	SGURGOLA	
LAT0005	FOSCO CONICCHIO	
LAT0006	RIVALDOSA	MONTESPIASONE
LAT0008	ISCHIA DI CASTRO	PONTE S PIETRO
LAT0015	CIVITAVECCHIA	MALPASSO
LAT0019	PIAN SULTARIC	S SEVERA
LAT0023	S GIOVENALE	
LAT0024	CASABARI	
LAT0025	VALVISCIOLE	SERMONETA
LAT0035	ALLUPIERE	FORCH DI PALANO
LAT0036	ALLUPIERE	VALLE DEL CAMPACCIA
LAT0037	ALLUPIERE	POGGIO CAMPICCIO
LAT0038	ALLUPIERE	POGGIO LA POZZA

Figure 5: Basic Site List

SITE LIST - TUSCANY
02/13/82

TUSO112	MONTE ARGENTARIO	CAPO D'UCHO	SPORADIC
TUSO113	MONTE ARGENTARIO	TORRE DI CALA PIATTI	SPORADIC
TUSO114	MONTE ARGENTARIO	COSTA DELLE OLIVE	SPORADIC
TUSO115	MONTE ARGENTARIO	PESCHIERA DI MASSA	SPORADIC
TUSO116	MONTE ARGENTARIO	PIANO DEL PIANONE	SPORADIC
TUSO117	MONTE ARGENTARIO	POGGIO DELLE PIANE	SPORADIC
TUSO118	MONTE ARGENTARIO	LE PIANE (1)	SPORADIC
TUSO119	MONTE ARGENTARIO	LE PIANE (2)	SPORADIC
TUSO120	MONTE ARGENTARIO	LE PIANE (3)	SPORADIC
TUSO121	MONTE ARGENTARIO	FATTORIA TERRAROSSA	SPORADIC
TUSO122	TOBBOLO DI OBBETZELLO	I NURELLI	SPORADIC
TUSO123	TOBBOLO DI ZENIGLIA	TAGLIE ARSEDONIA	SPORADIC
TUSO125	PITIGLIANO	PIAN COSTANZI	MECROPOLIS
TUSO126	PITIGLIANO	POGGI ALATI	MECROPOLIS
TUSO127	MANCIANO	LASCINCINO	MECROPOLIS
TUSO130	CECINA		PUB. DEP.
TUSO132	MONTENERANO	MONTE CAVALLO	CAVA
TUSO133	CAFALBIO	SASSI NERI	GR/SEPOLTURE
TUSO134	GR DELLE GALERIE DI	MONTIERI	TOHEA?

SITE LIST - ABRUZZO
02/13/82

TUSO135	CASTEL S			
TUSO136	MANCIANO			
TUSO137	CAMEGLI			
TUSO138	CAFALBIO			
TUSO139	CSTILNUOV	ABR0001	ASSERGI	DE NARDIS
TUSO140	CIRVARA	ABR0002	ASSERGI	GR A MALE
TUSO141	MCITEREB	ABR0003	FUCINO	ORTUCCHIO (1)
TUSO142	S MICHEL	ABR0004	FUCINO	GR LA PUNTA
TUSO143	SANTA FI	ABR0005	FUCINO	GR MARITZA
TUSO144	SATURNIA	ABR0006	FUCINO	GR SAN NICOLA
TUSO145	MAREMA	ABR0007	FUCINO	COLLELONGO
TUSO146	SIENA	ABR0008	OFENA	GR HARNITTE
TUSO147	VAL D'CR	ABR0009	PATERNA	CELLITA
TUSO148	VERRUCA	ABR0010	CABERATA	TAGLIACOZZO
TUSO149	MANCIANO	ABR0011	FUCINO	GR LA CAVA
TUSO150	OBETELL	ABR0012	CIVITELLA LA TRONTE	GR S ANGELO
		ABR0013	CAMPO DELLE PIANE	MONTABELLICO BERTONA
		ABR0014	TCCC CASJURIA	S M DE ANGELI
		ABR0015	CAMPLI	COCCICLI
		ABR0016	LA FORTELLEZZA	TCRTCRETO
		ABR0017	FUCINO	GR CICCIO FELICE
		ABR0018	CCILE BRIGNILE	S BERN IN PERILIS
		ABR0019	PETRELLA CAPPADOCIA	GR COIA I
		ABR0020	PETRELLA CAPPADOCIA	GR COLA II
		ABR0021	COLLE DEL TELEGRAFO	PESCARA
		ABR0022	MARTINSCICURO	S GIOVANNI
		ABR0023	TORTCRETO	PIANACCIO
		ABR0024	TORTCRETO	CCSTA DEL MONTE
		ABR0025	S MARIE CARSOI	VAL DE VABRI
		ABR0026	PETRELLA	BIFERNINA
		ABR0027	BOLOGNANO	GR PICCICHI
		ABR0029	FOSSACESIA	
		ABR0030	VALLE DELLA VIBRATA	RIPOLI
		ABR0031	LAGO DI SCANNO	
		ABR0032	PCNTE D'ANORE	CCNCA PELIGNA
		ABR0033	SAN CLEMENTE A	CAUSAUBIA
		ABR0034	FUCINO	ORTUCCHIO (2)
		ABR0035	FUCINO	ORTUCCHIO (3)
		ABR0036	FUCINO	CORCA DEL FUCINO
		ABR0037	VALLE DELLE VIBRATE	BELVERDE DI CONTROG
		ABR0038	GRAN SASS	CANPC PERICOLI
		ABR0039	CAMELI	CAMPORALANO (1)
		ABR0040	CAMELI	CAMPORALANO (2)

Figure 6: Sites Alphabetically by Name and Variant

SITES BY NAME AND VARIANT - 5
01/04/82

S LAZZARO DI SAVENA
S LEO
S LEONARDO
S LORENZO IN CAMPO
S LORENZO SALVATERRA
S LUCIA
S M DE ANGELI
S MADDALENA D HOSTI
S NAP D'ANGLONA 1
S NAP D'ANGLONA 2
S PARCO IN LAMIS

S MARGHERITA BELICE
S MARGHERITA DI
S MARIA (LEUCA)
S MARIA AL BAGNO
S MARIA CASTELLO
S MARIA DI VILLIANA
S MARIA IN SELVA
S MARIE CARSOLO
S MARINELLA
S MARTINO

S MARTINO IN PIOME
S MAURO
S MAURO FORTE
S MICHELE DI
S NIFFA
S NOVA CASTELLACIO
S OROBONO
S ONORIO
S PAOLA CIVITATE
S PAOLINO DI
S PAOLO IN ALPE
S PROSPERO
S ROCCO
S SECONDO PARMENSE
S SEVERA
S SEVERO

S SILVESTROL
S VARANO
S VITO DEI NOBE
S ZECCARIA
S'ILARIO D'ENZA

SALAPANUTA

OSTERIOLO
SCORNETTA
BOSCO DI MALTA
S LEONARDO
S LORENZO IN CAMPO
S LORENZO SALVATERRA
S LUCIA
TOCCO CASATRIA
S MADDALENA D HOSTI
TURSI
TURSI
S MARCO IN LAMIS
S MARCO IN LAMIS
S MARCO IN LAMIS
S MARGHERITA BELICE
S MARGHERITA DI

FARNETO
CROARA
SASSO MARCONI

PESARO
CASALGRANDE

S M DE ANGELI
BONDENO
S NAP D'ANGLONA 1
S NAP D'ANGLONA 2
BRANCIA-POSTIGLIONE
CHIANCATA LA CIVITA
MONTE GRANATA

ORSARA

EFRO129
EMRO099
EMPO063
SIC0031
MAR0007
EMRO079
SIC0058
ABRO014
EMPO027
BAS0023
BAS0045
PUG0109
PUG0119
PUG0116
SIC0032
EMPO182

SITES BY NAME AND VARIANT - 8
01/04/82

BOARDA
BODIGLIANA
BOKARTA
BOKARTA-CASTELLO 1
BOKARTA-CASTELLO 2
BOKARTA, CASTELLO DI
HOLA DI
HOLFETTA

BOLINELLO
BOLINO DI CALDOLI
BONALTO DI CASTRO

BONSAPOLC
BONSERRATO
BONTAGNA DI
BONTAGNOLA DI CAPO G
BONTALCINO
BONTALE
BONTALLEGRO
BONTALTO
BONTALTO DI CASTRO

BONTAPERTO E
BONTATA
BONTATA DELL'ORTO
BONTATA DI
MONTE ADRANONE
MONTE ARIATA

MONTE ARGENTARIO
MONTE ARGENTARIO
MONTE ARGENTARIO
MONTE ARGENTARIO
MONTE ARGENTARIO
MONTE ARGENTARIO
MONTE ARGENTARIO
MONTE ARGENTARIO
MONTE ARGENTARIO
MONTE ARGENTARIO
MONTE ARGENTARIO
MONTE ARGENTARIO
MONTE ARGENTARIO
MONTE ARGENTARIO
MONTE ARGENTARIO
MONTE ARGENTARIO

CASBI
BOKARTA
BOKARTA-CASTELLO 1
BOKARTA-CASTELLO 2
BOKARTA, CASTELLO DI
HOLA DI
(1)
(2)
PULO DI
HOLINELLO
HOLINO DI CALDOLI

LA CITTA
POGGI DI PONTECCHIO
TREZZANO
BONSERRATO
BONTAGNA DI
BONTAGNOLA DI CAPO G
Buca di S Antino
CASTELNUOVO BANGONE
COLOMBARA
BONTALTO

TORRE CROGNOLA
TORRE CROGNOLA
BONSERRATO
SIDOLI
ALSENO
REGGIO EBILIA

MONTE ARIATA
CASTELLAZZARA
ACQUASTRINI
CALE DEI SANTI
CAPO D'UOMO
COSTA DELLE OLIVE
FATTORIA TERRAROSSA
GR DELLA UGAZZI
IA TRADITA
LE PIANE (1)
LE PIANE (2)
LE PIANE (3)
PESCHIERA DI NASSA
PIANO DEL PIANONE

SIC0111
EMRO134
SIC0164
SIC0197
STC0192
SIC0163
PUG0030
PUG0097
PUG0098
PUG0031
PUG0091
PUG0108
LAZ0122
LAZ0120
LAZ0121
BAR0047
SIC0018
TUS0143
SIC0086
TUS0073
EMRO038
SIC0011
TUS0139
LAZ0106
LAZ0055
LAZ0146
SIC0018
EMFO159
EFRO114
EMRO067
SIC0019
TUS0057
TUS0100
TUS0110
TUS0108
TUS0112
TUS0114
TUS0121
TUS0058
TUS0059
TUS0118
TUS0119
TUS0120
TUS0115
TUS0116

Figure 7: Extended Site Reports

ITALIAN BRONZE AGE SITES
LATIUM (01/27/82)

LUNI SUL NIGNONE PIAN DI LUNI SETTLEMENT (LAT0022)

PROV: VITERBO LAT: LONG: SEALY:

DISCUSSION

Occupied continuously from Bronze Age to Middle Ages.
Real stratigraphy found only in sheltered spots but traces
of prehistoric habitation everywhere.
Excavated by Swedish Institute in Rome since 1956.
6 km west of San Giovenale (LAZ0023).
Ostenburg distinguished three levels of B.A. occupation in
the southern house: Apennine I, II and III. In the central
and northern: Apennine I, I & II, II (total occupation of
1.5 m). Apennine I develops trends already seen in local
Eneolithic and includes punteggio without incised lines
as borders, as well as classic Apennine motifs of parallel
lines filled with either dotting or short lines... (209:178).

Cf notes on Ostenburg, Peroni and Trusp on Luni.

DATING CRITERIA

CARBON-14:

1055 +/- 75 (1350 +/- 110). Luni Apennine I.
St-2046. OREF 194.
995 +/- 80 (1250 +/- 110). Luni Apennine I.
St-2047. CREF 194.
1170 +/- 75 (1450 +/- 110). Luni Apennine I-II.
St-2045. OREF 194.
1125 +/- 78 (1400 +/- 110). Luni Apennine I-III.
St-1147. OREF 194.
1245 +/- 75 (1550 +/- 110). Luni Apennine II.
St-1345. OREF 194.
875 +/- 80 (1050 +/- 110). Luni Apennine III.
St-1144. OREF 194.
825 +/- 100 (1000 +/- 115). Luni Apennine IV.
St-1341. OREF 194.

RELATIVE:

Vagnetti (0834): The 5 sherds
Ostenberg and examined by Fu
while 2 are attributed to II
would be undatable even in F
Bec III A & B, III B, III C.

ITALIAN BRONZE AGE SITES
EMILIA-ROM (01/27/82)

PONTE D'IDICE LE CANOVE CAPANNA (E.

PROV: BOLOGNA LAT: 44 27 20 LONG: 1 0 33 SEAL:

CHI

DISCUSSION

FULL BRONZE AGE:
APENNINE

XIV C. B.C. Sherds; Older than

Noted by Trebbi in 1911; pieces of burned limestone from
from a fire/fireplace; Malavolti sole published reference

LATE BRONZE AGE:
SUBAPENNINE

Final stage of Apennine cult:
PROTCVILLANOVAN

CHRONOLOGY

EARLY BRONZE AGE:
BENEDELLO

RE

REFERENCES

RADHILLI

CU

RADHILLI

GUIDA:69

PUGAZZOLA DELPINO

FU

MALAVOLTI

EP(48):

MARAZZI & TUSA

KI

SCARANI

EP(52):

OESTENBERG

OS

SCARANI

PREIS.-ZB.-ROM (62) II:280

VAGNETTI

IN

PERONI

??

MUSEUMS

BU

MUSEO CIVICO DI BOLOGNA

MUSEC DI TARQUINIA

Figure 8: Sites by Selected Culture Representations

ITALIAN BRONZE AGE SITES
EMILIA-ROM (01/24/82)
SELECTION : APENNINE

BOLOGNA PORTA S ISAIA CAPANNE (EMPO006)

PROV: BOLOGNA LAT: 44 29 45 LONG: 1 8 5 SEALEV:

RELATED SITES

Major affinity with Villa Cassarini (EM50008) and
Toscanello Inolese (EMPO025).

CHRONOLOGY

FULL BRONZE AGE:
APENNINE

RADHILLI

BERNABO BREA & CAVIHER

ITALIAN BRONZE AGE SITES
EMILIA-ROM (01/24/82)
SELECTION : CAMPANIFORME

TANACCIA DI BEISIGHELLA DEPOSIT

PROV: RAVENNA LAT: 44 13 43 LONG: 0 41 45 SEALEV:

CHRONOLOGY

MUSEO CIVICO DI BO

EARLY BRONZE AGE:

LAGOZZA

Some campaniforme (bell-beaker) material.

POLADA

GALLO DI C

PROV: BOLOGNA LA

REFERENCES

Montanari: passage from

RADHILLI GUIDA:73 (1)

SCARANI PREIS.EM.ROM (62): (1)

SCARANI PREIS.EM.ROM (62) II:289 (1)

FULL BRONZE AGE:
APENNINE

Only a few comparisons

MUSEUMS

SOPRINT. ALLA ANTICHITA DELL'EMILIA

CAMPAGINE BISMANTOVA DEPOSIT

PROV: REGGIO EMILIA LAT: LONG: SEALEV

DISCUSSION

Q698: there is a small collection of Beaker material studied
by M. Catarsi of Bologna Univ.

CHRONOLOGY

Figure 9a: Museums by City

MUSEUMS BY CITY	
02/13/82	
BATERA	MUSEO DI BATERA
MILAN	UNIVERSITA DI MILANO
	MUSEO CIVICO DI MILANO
MODENA	MUSEUM CIVICO DI MODENA
MODICA	MUSEO DI MODICA
NOLPETTA	SEMINARIO DI NOLPETTA
NAPLES	MUSEO NAZIONALE DI NAPOLI
PADULA	CERTOSA DI SAN LORENZO
PALERMO	MUSEO DI PALERMO
PARMA	MUSEO DI PARMA
PAESTUM	MUSEO DI PAESTUM
PATERNO	ANTIQUARIUM DI P
PERSOLINO	LA SCUOLA AGRARI
PERUGIA	
PIACENZA	

PISA
 PITIGLIANO
 POLICORO
 PONTECAGNANO
 POTENZA
 RAVENNA
 REGGIO CALABRIA
 REGGIO EMILIA
 RENZI
 ROBE

SALERNO

SASSO FURBARE
 SATURNIA
 SIENA

SIRITIDE
 SORRENTO
 SYRACUSE

TARANTO
 TARQUINIA
 TORINO

VERONA
 VIADANA

MUSEUMS REPORT 1.1 06/15/81		
ALPHABETICAL BY NAME		
MUSEO DI PARMA	PARMA	47
MUSEO DI PERUGIA	PERUGIA	33
MUSEO DI POLICORO	POLICORO	8
MUSEO DI PONTECAGNANO	PONTECAGNANO	20
MUSEO DI POTENZA	POTENZA	6
MUSEO DI RAVENNA	RAVENNA	62
MUSEO DI REGGIO CALABRIA	REGGIO CALABRIA	12
MUSEO DI REGGIO EMILIA	REGGIO EMILIA	56
MUSEO DI SYRACUSE	SYRACUSE	76
MUSEO DI TARANTO	TARANTO	7
MUSEO DI TARQUINIA	TARQUINIA	24
MUSEO DI TORINO	TORINO	57
MUSEO DI VERONA	VERONA	44
MUSEO DI VILLA GIULIA	ROBE	27
MUSEO EOLIANO		83
MUSEO FIORENTINO DI PREISTORIA	FLORENCE	43
MUSEO NAZIONALE DI AREZZO	AREZZO	4
MUSEO NAZIONALE DI CHIETI	CHIETI	2
MUSEO NAZIONALE DI NAPOLI	NAPLES	9
MUSEO NAZIONALE DI SIRITIDE	SIRITIDE	10

Figure 9b: Museums by Name

Figure 10a: Catalog by Author

CATALOG ALPHABETICAL BY AUTHOR: W
11/22/81

MACKENS

AIIN(7P):308-350 505
Les equivalences des metaux...

RANO

RS(71):431 326
Geraguno (Matera)

HOFFMANN

ST.NORV.(64): 564
The Warp-Weighted Loom. Studies in the History and Technology

HOLLOWAY

HOLLOWAY(73): 251
BUCCINO

JFA(74):67-80 0 211
Exploration of Inland Southern Italy

MOSTRA(74):43-49
Buccino

AT(81):
Italy and the Aegean: 3

HOLLOWAY ET AL

JFA(75):
Buccino: The Early Bron

HOLLOWAY, LUKESH, NABERS

JFA(78):133-144
The Development of the

Figure 10b: Author Search

AUTHOR SEARCH (01/24/82)
ITALIAN PREHISTORIC SITES

HOLLOWAY

HOLLOWAY(73):
BUCCINO
JFA(74):67-80
Exploration of Inland Southern Italy
MOSTRA(74):43-49
Buccino
AT(81):
Italy and the Aegean: 3000-700 B.C.

HOLLOWAY ET AL

JFA(75):
Buccino: The Early Bronze Age Village of Tufariello

HOLLOWAY, LUKESH, NABERS

JFA(78):133-144
The Development of the Italian Bronze Age...

ex sitrch

PLEASE SUPPLY VALUES REQUESTED

SITE?=
S P
>
>

Figure 11: Interactive Demonstration

NUMBER OF RECORDS IN TABLE= 9 LINES= 9

PAGE 1

ITALIAN PREHISTORIC SITES (01/24/82)
CENTER FOR OLD WORLD ARCHAEOLOGY AND ART
SITE LIST FOR SITES WITH ' S P '

S PAOLA CIVITATE	BASSERIA LAURIA	DEPOSIT	AF00029
GALLO DI QUINGENTO S PAOLO IN ALPE	CASTEL S PIETRO S PROSPERO CAMPIGNA	VILLAGE STAZIONE INHUMATION	EH00012 EH00117 EH00112
BANDITA S PANT. ISCHIA DI CASTRO	TARQUINIA PONTE S PIETRO PONTE S PIETRO/VALLE	SEPOLTURE TOME A PORNO ABITATO NECROPOLIS	LAT0007 LAT0008 LAT0139 LAT0140
S PAOLINO DI	FILOTTRANO	STAZIONE	HAR0019

>
ex sitdply

PLEASE SUPPLY VALUES REQUESTED

ID?=
lat0008
>
>

NUMBER OF RECORDS IN TABLE= 21 LINES= 21

PAGE 1

ITALIAN BRONZE AGE SITES
LATIUM (01/24/82)

```

*****
ISCHIA DI CASTRO   PONTE S PIETRO   TOME A PORNO ( LAT0008 )
*****
PROV: VITPRBO     LAT:           LONG:           SEALEV:

```

DISCUSSION

25 tombs.

Fittatore; end Rinaldone-beginning Protoapennine.

CHRONOLOGY

EARLY BRONZE AGE:
RINALDONE
Peroni's Rinaldone 2 for Tomb 2; others Rinaldone 1

REFERENCES

RITTATORE PT AL.	10CONG.ST.PTR.ITAI (75):124	(R01:0172)
BARICH	ORIGINI (68):173-245	(R02:0516)

Figure 12: Excavation Report Examples

RAW DATA - MOLISE
PETRELLA - C1/C2/82

SEQ	#	HTL	IF	EH	WCK	EDY	ES	HANDE	DEC	DEC1	DEC2	SPCL
332	1	11	2	CC	EP				E	58-4		
333	1	13	C						E	55-		
334	1	12	H					H3				
335	1	12	2	AA		AO		80-0				
336	1	13	1									F
337	2	11	7				10					
338	2	13	H					H0-0				
339	1	13	E			PA	10					
340	1	11	2	CC	EP	AA			E	50-4		
341	2	11	1	AA					H-H	21-		
342	1	13	1	CC				H0-0				
343	1	12	H						E	50-E	5P-H	
344	1	12										
345	1	12										

MOLISE DECORATION PATTERNS
01/08/82

SEQ	SITE	QUAN	DEC1	DEC2	DEC3	VAR	PF	SEQ	
351	6	12							
352	1	12							
353	1	11							
354	1	12	ABR0026	1	2F-	22-	H	0	77*
355	2	12							
356	1	11	*TOTAL DEC1 2F						
357	2	12		2					
358	1	13							
359	3	12		1	2H-		P	0	78*
360	2	11		1	2H-8		H	2	87*

MEASUREMENTS BY SITE

SEQ	PER	HEIGHT	NECK HT	RIM DIA	NECK DIA	BODY DIA	BASE DIA	THICK		
364	1	11								
365	1	11								
366	3	11	14	3.50	1.70	10.80	10.70	10.80	.00	
367	1	12	15	11.80	3.50	15.00	16.10	16.40	7.50	
368	1	12	16	10.50	4.80	18.50	16.40	18.00	7.00	
369	1	11								
370	1	11								
371	1	12								
372	1	11	SITE: EBR0015	MCNTE CASTELLACCIO						
373	1	12	22	9.10	3.30	19.50	18.00	19.50	11.00	
374	4	11								
375	1	12	SITE: EBR0018	MONTE CASTELLACCIO GREDARIVA						
376	2	12	24	4.30	.00	11.90	.00	.00	.00	
377	5	11								
378	1	13	SITE: EBR0024	BORGIO PANIGALY S AGNESE DI						
379	1	12	1	8.50	5.30	19.00	17.00	17.20	.00	
380	2	12	2	8.30	4.00	18.30	17.00	16.00	.00	
			3	7.30	2.20	10.50	.00	13.00	6.70	
			4	8.50	4.50	18.50	18.20	18.50	.00	
			SITE: EBR0025	TOSCANELLA MOLISE						
			18	10.30	.00	14.00	.00	15.40	7.20	
			19	8.30	4.30	17.20	16.20	17.20	5.70	
			20	6.30	3.20	9.50	9.10	10.00	5.50	
			21	6.00	2.50	9.00	8.80	9.90	.00	
			SITE: PUG0012	DISCEGLIE ALPARCSA						
			1	14.30	5.00	19.00	19.00	20.00	.00	
			2	5.30	1.70	10.10	9.80	11.80	3.40	
			3	3.30	2.00	11.50	10.50	9.90	4.80	
			4	3.60	1.50	9.00	8.40	8.40	.00	

Figure 13b: Counts of Excavated Material

ID	SITE	ROUSE COUNTS 01/27/82					TOTAL-SRPPDS
		BMS	BASES	PROFILES	HANDLES	PLASTIC-DECOR	
ABR00076	PIRELLA/PIPERMINA	47	72	3	137	191	9,037
ABR00079	PIRELLA/PIRELLA	166	44	168	37	112	386
ABR00088	MASSIMILIANO/	45	47	108	92	10	597
ABR00090	GUGLIONESE/	43	14	72	65	31	598
ABR00091	BIBIANO VALLE/CE102	0	19	12	17	4	298
ABR00092	BIBIANO VALLE/CE202	0	9	16	15	0	268
ABR00093	BIBIANO VALLE/CE103	10	1	2	3	0	268

Figure 13a: Counts of Site Types

COUNT OF SITES BY TYPE ACROSS PERIOD
01/20/82

AREA	ASSPELAGE	PERIODS			LBA
		NEOL	MPA	MPA	
ABRUZZO	BURIAL	2	6	1	6
	HABITATION	8	4	8	22
	OTHER	19	11	11	15
*TOTAL ABRUZZO		29	21	20	43
APULIA	BURIAL	9	17	3	2
	HABITATION	28	16	23	30
	OTHER	58	33	24	25
*TOTAL APULIA		95	68	50	57
BASILICATA	BURIAL	4	9	3	5
	HABITATION	8	1	6	8
	OTHER	10	10	10	6
*TOTAL BASILICATA		22	20	21	19
CALABRIA	BURIAL	0	3	0	0
	HABITATION	2	0	0	0
	OTHER	5	4	3	11
*TOTAL CALABRIA		7	7	3	11
CAMPANIA	BURIAL	4	15	4	2
	HABITATION	1	2	6	2
	OTHER	11	19	24	18
*TOTAL CAMPANIA		16	36	34	22