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THE ARCHEOLOGY OF THE CENTRAL ATLANTIC WATERSHED OF
COSTA RICA

Columbia University

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THE ARCHEOLOGY OF THE CENTRAL ATLANTIC WATERSHED OF COSTA RICA

Michael Jay Snarskis

Submitted in partial fulfillment of the requirements for the degree of
Doctor of Philosophy in the Faculty of Political Science.

COLUMBIA UNIVERSITY

1978

ABSTRACT

THE ARCHEOLOGY OF THE CENTRAL ATLANTIC WATERSHED OF COSTA RICA

Michael Jay Snarskis

Although long subject to widespread looting, archeological sites in the Atlantic watershed of Costa Rica have remained poorly understood due to several factors, among them the heavy rainfall and resulting lush tropical forest which obscures most surface indications of the non-monumental sites. Very little scientific archeology has been carried out in the region, and when the author began work in 1973, the prehistoric cultural sequence was only vaguely perceived, the earliest sites dating to several centuries AD. Unlike that of parts of Mesoamerica and Peru, the aboriginal population of eastern Costa Rica was virtually extinguished during the centuries of colonial domination.

Five years of field work and analysis have produced a cultural sequence of 2500 years in the region, beginning about 1000 BC. The Middle Formative materials are the oldest yet known from Costa Rica, but older sites must exist. Interestingly, the Middle Formative La Montana complex recalls the ceramics of northern South America while the Chaparron complex is stylistically tied to Mesoamerica, the earliest evidence of the culture area frontier which could still be

traced through Costa Rica at the time of the Conquest. A new archeological periodization is suggested for the Atlantic watershed, as follows: Middle Formative (1000-500 BC, La Montana and Chaparron complexes), Zoned Bichrome I (500-1 BC, Chaparron and El Bosque complexes), Zoned Bichrome II (AD 1-500, El Bosque and La Selva complexes), Transitional (AD 500-1000, La Selva and Madera complexes), and Stone Cist (AD 1000-1500, Madera and La Cabana complexes).

To judge by the material culture (metates, manos, highly developed ceramics and other crafts), settlements were sedentary and agricultural throughout the whole of the known sequence. Urbanism and monumentality never appeared, however, and all the archeological cultures which made up the sequence can be assigned to a "Formative" stage of cultural evolution. It has been hypothesized that this "flat trajectory" of cultural development is a function of human adaptation to a rich, but homogeneous environment, the eastern Costa Rican tropical rain forest. Efficient land use and resource exploitation in the region required (and thus fostered) a culture built around rituals which served to structure and stratify society. The logistics of swidden agriculture, on the other hand, mitigated against large concentrations of population. As a result, prehistoric culture in eastern Costa Rica was highly ceremonial, but never achieved the population concentrations necessary for the development of a rigorously hierarchical political state.

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PART I:

CONTEXT OF THE RESEARCH AND STATEMENT OF THESIS

CHAPTER I: INTRODUCTION

The last two decades have seen a marked amplification in the scope of archeological problem solving, as well as a reevaluation of the very essence of archeology as a discipline. The voluminous and often highly polemic literature has been widely read and commented upon and will be cited only as it directly refers to topics treated here. Although the debates between "new" and "traditional" archeologists on many theoretical and methodological questions are continuing, the smoke is beginning to clear and cooler heads in both camps have issued pleas for conciliation and a more flexible and realistic understanding of the goals and practice of modern scientific archeology (Willey and Sabloff 1974: 178, 208-211; Watson 1973). There is no doubt, however, that the consciousness of American archeology has been raised. A majority of practicing archeologists today would be in substantial agreement with the following statements:

- (1) More and different questions may be asked of archeological data, specifically ones dealing with the processes involved in prehistoric cultural development and change. Potentially, aspects of prehistoric culture previously thought to be beyond the realm of archeological inquiry, such as belief systems, social organization and rules of kinship are sometimes inferrable from hard archeological data (Binford 1962; Deetz 1965, 1968). Both inductive and deductive forms of reasoning are utilized in, indeed are necessary components of, this kind of problem solving (Willey and

Sabloff 1974: 12).

(2) The application of many different methods of quantitative analysis (sampling, statistical manipulation, computers) some specifically developed for the archeological problems, has allowed archeologists to address problems which were previously not feasible in terms of man-hours and/or expense.

(3) The nature of human culture can only be understood if it is viewed holistically, as an adaptation to both environmental and social stimuli. An appropriate theoretical framework for understanding this dynamic relationship is general systems theory.

(4) Human processes of adaptation are selective, and, in the continuum made up of these cultural adaptations through time, a pattern of general cultural evolution may be discerned. Potentially, probabilistic generalizations can be derived which assist in explaining the processes of cultural evolution in different environmental settings.

There is less agreement about the proper ways to approach these questions methodologically, and substantive site reports carried out according to the tenets of the New Archeology have been very few to date (Plog 1974; Flannery 1976).

A common denominator for all sophisticated archeological problem solving is an adequate data base. It is notable that many of the earliest and most voluble exponents of the New Archeology were those working in areas with relatively long histories of intensive archeological exploration and thus with well known, refined chronologies (the

American Southwest and England are good examples). This is not the case for Atlantic Costa Rica. Although archeological investigations of one sort or another have been carried out sporadically in the region for more than eighty years, no regional chronology was available as of 1973, when the author began fieldwork. The fact that more collectors than prehistorians are familiar with the "archeology" of eastern Costa Rica indicates the kind of digging that has been typical; looting is rampant and more than half a million dollars annually is injected into the Costa Rican economy through the illegal sale of antiquities (Heath 1973: 264). Due to the absence of fundamental archeological data, explications of the Atlantic watershed region of Costa Rica in articles and archeological syntheses continue to be sketchy and speculative (Coe 1962; Lothrop 1966; Stone 1966, 1962; Baudez 1970; Willey 1971). Prehistoric remains throughout the region have commonly been assigned to rather late time periods, mostly on the strength of a European glass bead found at the ceremonial center of Las Mercedes by Hartman at the turn of the century (Coe 1962: 175).

The data presented in this dissertation should be viewed as a necessary first step in a project that will have a larger scope and ask other kinds of questions in the future. To embark upon detailed population and settlement pattern studies or to explain shifts in subsistence economy, would be foolhardy without a reasonably secure time and space framework on which to tie the data. Because of the special problems faced by archeologists in tropical rain forest environments - extremely poor organic preservation and significant difficulties in locating, delimiting and mapping sites due to dense vegetation - the

formulation of a regional archeological chronology, usually a rather straight-forward undertaking, is fraught with complications. Fortunately, ceramic and lithic artifacts are plentiful in most Costa Rican sites, and the author has had some degree of success in elucidating intra-site settlement patterns for at least a portion of the sequence. Subsistence has been a greater problem, but again, some data have been recovered. Since virtually all the information previously published on prehistoric subsistence in eastern Costa Rica has been derived from ethnohistoric sources, archeological confirmation of any kind is badly needed. At the root of the above mentioned problems is the ever present rain - parts of the region dealt with here receive up to 5 m per year. In sum, the archeologist working in eastern Costa Rica soon begins to appreciate the difference between a carefully pre-designed research strategy and the field tactics he is required to employ in order to make a go of it.

Central America, the Circum-Caribbean and the Intermediate Area

If we are to interpret the prehistory of the Atlantic watershed region of Costa Rica, we must understand prehistoric cultural dynamics in the larger culture area of which it is a part. In the past, anthropologists have employed a series of terms to designate the extensive and extremely diverse land mass which lies between the two foci of highest precolumbian cultural development in the Americas, nuclear Mesoamerica and the Andes. Eastern Costa Rica has variously been included as part of lower Central America, the Circum-Caribbean, and the Intermediate Area. Let us evaluate these geo-cultural designations as to their heuristic value in the study of prehistory.

The terms Central America or lower Central America are basically modern political usages, and are nondescriptive of anthropological phenomena. Lothrop (1966), Stone (1966) and other contributors to the Handbook of Middle American Indians probably used these terms (or the names of individual modern countries) as frames of reference for the presentation of their archeological data precisely because they carried no cultural significance. As Lothrop says in his discussion of the archeology of Nicaragua and Costa Rica, "probably no area discussed in this volume has yielded so much pottery about which so little is known ..." (Lothrop 1966: 182). He and others simply elected not to discuss trends and influences in prehistoric cultural development in the area until more information was available.

The designation of a Circum-Caribbean culture area, part of the classificatory system put forward by Julian H. Steward in the Handbook of South American Indians (1946-1950), was met with initial acceptance by many anthropologists, ^{largely} greatly due to the need for a viable conceptual framework on which to arrange the puzzling mass of archeological and ethnographic data characteristic of the area. Nevertheless, the Circum-Caribbean concept has fallen gradually into disuse for a variety of reasons. Steward himself, in his preface to Volume 4 of the HSAI (Steward 1948: xv) laments his inability to properly fit the data at hand into his geo-cultural construction. Central American, parts of Colombia, Venezuela, the Guianas and the Lesser and Greater Antilles were all dealt with by the "Circum-Caribbean theory". The trouble was that Steward's geo-cultural rubrics were also developmental taxa; that is, one had to be careful in distinguishing between a culture which may

have been located on the Caribbean but was not at the Circum-Caribbean stage of development, and another which filled both requirements. Conversely, the "Sub-Andean" culture of Colombia and Ecuador, although not on the Caribbean, were classified as Circum-Caribbean in a developmental sense. Likewise, a Tropical Forest culture might be one with a core of traits connected with human ecology in the equatorial rainforest, or, depending on context, it might be another, non-rainforest group seen to be at the so-called Tropical Forest level of cultural development, for Steward a less advanced stage than the Circum-Caribbean.

I believe that Steward's combination cultural-historical-developmental model with its consequent levels or stages of culture, transcending geography, eventually failed because it could not adequately account for the increasing amounts of archeological data which seemed to be contradictory. Upon publication of the HSAI, it was not immediately apparent that its volume divisions represented anything more than a convenience of publishing, but that Steward considered them to be significant in a developmental sense was later emphasized in Volumes 4 and 5 and in other articles (Steward 1947, 1949). Perhaps Steward was unjustified in attempting to extrapolate culture history from a classification based on the comparison of culture elements from incomplete, confusing data with an uncertain temporal correlation. Bennett (1953: 213) has noted that "fundamentally, a culture area classification is horizontal, that is, on one time level, and is not in itself a study of culture history. However, historical interpretations inevitably creep in to explain the formation of culture areas."

There is no need to recapitulate here the trait lists given as diagnostic of the Circum-Caribbean and Tropical Forest levels of culture (Steward 1948: 2-5; Lowie 1948: 1-2), but much overlap can be seen, and in such things as agriculture, pottery making and loom weaving, the difference is in degree only. Fundamentally, Steward based his taxonomy on differences in "sociopolitical and religious patterns" which he derived from ethnohistorical and ethnographic documents. Such patterns are notoriously difficult to elucidate through archeology. Rouse formulated an archeological test for Steward's developmental scheme, which he applied at sites in the lowlands of Venezuela, British Guiana and in the West Indies (Rouse 1953). The test involved the observation of certain settlement patterns and artifacts which should be associated with the various levels of cultural development (Marginal, Tropical Forest, Circum-Caribbean) in Steward's taxonomy. In brief, Rouse found that Steward's theory of a widespread highland Formative culture, originating in nuclear Mesoamerica and the Andes, which supplied progressive traits to all major regions and ensuing cultures, was not borne out. Rouse (1953: 195) discovered that the distribution of lower-level Marginal cultures approximated Steward's projections, but that Circum-Caribbean culture failed to make its appearance "early and throughout the region, as his theory would have it. Instead, this type of culture is restricted to parts of northwestern Venezuela and the Greater Antilles, the two places where it has been identified ethnologically, and it is the Tropical Forest culture which follows immediately after the Marginal cultures and extends throughout the area."

Other archeologists have also found cause to differ with the Circum-Caribbean theory. Almost forty years ago Lothrop (1940: 417) cited and concurred with Paul Rivet's belief that "culture in South America rests primarily on a common base whose source lies in the Amazon and the Orinocco basins." Since then the work of Reichel-Dolmatoff (1955, 1956, 1959, 1965a, 1965b), Lathrap (1970), Zucchi (1973) and numerous others has gone far toward illustrating the primacy of lowland and/or Tropical Forest cultures in South American prehistory.

We see, then, that Steward's idea of a single South American culture source in the Andean highlands does not fit the evidence as revealed by subsequent archeology; a seminal highland culture for all Mesoamerica likewise has not come to light. I have dwelt at some length on the Circum-Caribbean concept of Julian Steward in order to emphasize its failure on an explanatory level. Steward was among the first and most important of the true cultural ecologists, but as his postulated early highland culture did not materialize, his theory failed as an etiology. We see instead that it is the Tropical Forest regions which loom large in any discussion of early cultural development in South and Central America.

Let us turn now to the concept of an Intermediate Area. As employed by Willey (1971), Sanders and Marino (1970), and Meggers (1972 - who also uses Circum-Caribbean, in a strictly geographical sense, as a synonym), the term Intermediate Area has both geographic sense and cultural connotations. Essentially it refers to the land falling between the two centers of highest cultural development in

precolumbian American, Mesoamerica and Peru; the Antilles and Amazonia are excluded. Together, the two major cultural foci and the Intermediate Area make up Nuclear America (Willey 1955), locus of both the earliest and the most advanced sedentary cultures in the Americas. During the period of time from approximately 1000 BC to the Spanish Conquest, cultures in the Intermediate Area failed to match the widespread and intense socio-political and religious development of Mesoamerica and Peru, although the three areas were characterized by a rather similar level of cultural development before that period.

Does the explanation for differential development inhere in the nature (climate, topography, biota) of the Area itself, or has the concept of an Intermediate Area grown up merely as a foil in the classification and explanation of cultural systems to the north and south? As in most problems, there is probably truth in both points of view, and a clearer understanding will depend on clearer and more precise questions. In any case, the Intermediate Area concept would appear to be of greatest heuristic value in explaining the prehistory of eastern Costa Rica, since it tends to emphasize the generic relationship with cultures of Mesoamerica and Peru (as part of Nuclear America), while setting the region apart biogeographically, and thus encouraging the consideration of cultural evolution in a multilinear sense.

Moreover, it must not be forgotten that culture area designations are essentially synchronic, and that a process-oriented view of cultural evolution, necessarily of considerable time depth, will probably involve shifting culture area boundaries through time. Thus,

while it has become standard practice to divide Central America and Costa Rica into zones of Mesoamerican and South American influence (Baudez 1970; Stone 1972), little archeological evidence is available to support these divisions. Most authors have relied heavily on ethnohistorical sources, but it is clear that other kinds of data are needed; in the Sapoa River valley, a locality Coe (1962: 176) confidently describes as "clearly a part of the Mesoamerican co-tradition", F.W. Lange (1971a:256-268) found instead that the archeology reflected South American cultural traditions through most of the 2000 year sequence.

Along eastern Central America, floral and faunal species typical of the great South American tropical forests extend northward well into Honduras, in a virtually unbroken biotic band (Stuart 1964: 342, 347-349; West 1964: 376). Prehistoric man was a part of this biota and it would not be unusual to find his traditions of land use, resource procurement, craft technology, and even social organization exhibited a rather similar range of variation throughout the extent of this environmental zone. It is well known that at the time of the Spanish Conquest, most aboriginal groups in the area in question shared the same language group, Macro-Chibcha (Baudez 1970: 19).

Nevertheless, the inhabitants of eastern Costa Rica in late pre-Conquest times were apparently trading extensively for the colorful polychrome pottery of Greater Nicoya, built at least some villages around a square, open Mesoamerican-style plaza, and carried on relations with the Aztec pochteca, some of whom were in southeastern Costa Rica and Panama when the Spaniards arrived (Chapman 1959).

Clearly, indigenous cultural development in eastern Costa Rica was characterized by a remarkable diversity of influences; to separate those which were merely events from those that played a causal role in cultural evolution is another matter.

The purpose of this dissertation will be threefold:

- (1) To organize the archeological data from two sub-regions of eastern Costa Rica, insofar as they are known, on a rudimentary but serviceable chronological framework. To accomplish this, modes of ceramic and lithic technology, micro-settlement patterns and techniques of tomb construction will be examined.
- (2) To establish the priority of South American tropical forest core-cultural patterns among the aboriginal inhabitants of eastern Costa Rica.
- (3) To show that the flat trajectory of prehistoric cultural development in eastern Costa Rica (and by extrapolation, the "arrested development" of precolumbian culture in the Intermediate Area as a whole) may be nothing more than the result of an efficient human adaptation to a homogeneous and relatively abundant environment.

CHAPTER 2: THE BIOGEOGRAPHY OF THE ATLANTIC WATERSHED OF COSTA RICA

Most of the fieldwork for this dissertation was done in two sub-regions of the Atlantic watershed, the Turrialba valley and the Línea Vieja, a railroad line constructed more than 80 years ago in the eastern Costa Rican lowlands by the co-founder of the United Fruit Company, Minor C. Keith.

Geology and Soils

Together, Costa Rica and Panama can be said to form a "volcanic bridge" which connects South and Central America (Schuchert 1935). It is thought that this isthmus was first formed during the late Jurassic or early Cretaceous periods, but was partially submerged in early Tertiary times, allowing the merging of Atlantic and Pacific waters. The Turrialba valley, one of the localities treated here, was submerged during that time. This region probably re-emerged during the late Miocene when huge amounts of volcanic ejecta were thrown out and large granitic batholiths were intruded. The Cordillera de Talamanca, which begins just south of the Meseta Central and runs southeastward to the Panamanian border, is itself a gigantic batholith and includes the highest peak in Costa Rica, Chirripó Grande (3920 m).

To the northeast of the Meseta Central (1000-1500 m), which is the largest of the highland basins within the Central American

volcanic axis, lies the Cordillera Central which includes the recently active volcanoes of Arenal, Poas and Irazú. Originally thrust up during the latter Miocene and Pliocene, the peaks in this range were very active volcanically during the Quaternary. The ejecta, in the form of glowing avalanches of glassy pumiceous material and later basaltic lavas, have contributed to the high fertility of soils in the Meseta Central. Subsequent ash falls have also been distributed over the Meseta by prevailing southeastern winds.

The Meseta Central is composed of two intermontane basins separated by low volcanic hills (Ochomogo) that form the continental divide. The larger, lower (1000-1100 m) basin of San Juan, which includes the capital of San Jose, drains to the Pacific via the Río Grande. The smaller and higher (1300-1500 m) basin of Cartago drains to the Caribbean via the Reventazón, passing through the Turrialba valley. The Turrialba locality is characterized by early Tertiary marine sediments, Tertiary granitic rocks and Pleistocene volcanic ash extrusions. The Las Animas calcareous formation includes deposits of flint and chert in the form of boulders and nodules, which were utilized by the prehistoric population from Paleoindian times onwards. It appears that the Turrialba valley, which has a diversity of mineral resources, was a focus for aboriginal stone working activities in general. Soils in the valley are fertile as a rule, but subject to leaching and heavy seasonal erosion (West 1964: 79-82; West and Augelli 1966: 32-33).

The eastern lowlands of Costa Rica are formed predominantly of recent alluvium (loosely packed volcanic material) which has been washed down the northeastern slopes of the Cordillera Central by the

very numerous and fast flowing streams of that region. The coastal plain has also been built up by redeposition of alluvium at river mouths, especially that of the San Juan, which runs in part along the Costa Rica-Nicaragua border.

Although heavily weathered and subject to severe leaching, the soils of the eastern lowlands of Costa Rica are productive; this is due to their relative youth and retention of basic mineral nutrients from rich parent materials. There has been little renewal of soil fertility on the Caribbean side of Central America by recent vulcanism, as prevailing trade winds carry ash and other ejecta toward the Pacific (Stevens 1964: 310-311).

Climate, Flora and Fauna

Both the Turrialba valley (600-700 m) and the Linea Valley sub-region of the eastern lowlands (30-50 m) are located in the Afw' zone of tropical rainy climate, according to the Koeppen classification. Rainfall of up to 4 or even 5 m per year is not uncommon. Mean monthly temperature is more than 20°C in both localities, but the Turrialba valley is several degrees cooler on the average because of its higher altitude. There is no real dry season in the Atlantic watershed of Costa Rica, but the months of February, March and April have less rain as a rule. This is in marked contrast to the seasonality prevailing in northwestern Costa Rica where a sharply defined dry season often lasts more than six months.

The heavy precipitation characteristic of the Atlantic watershed is produced by a combination of the northeast trade winds and local

topography. The easterlies, as they are called, are pushed up and consequently cooled by the relief of the Cordillera Central. This adiabatic cooling produces heavy rainfall along the northeastern slopes of the mountains, a process which is accentuated even further during June, July and August when the thermal equator migrates northward, serving to push the easterlies to greater altitudes where more rapid cooling takes place (Vivó Escoto 1964: 187-192).

The heavy rainfall produced by the above conditions is drained to the Caribbean by numerous short but fast flowing and voluminous rivers which have built wide natural levees in the coastal plain and lowland basins. These were heavily settled in precolumbian times, and still provide rich crop and pasture lands today. In the Linea Vieja sub-region, zones which contain archeological materials today support stands of banana, cacao, manioc, corn, various citrus fruits and tropical forest. In the Turrialba valley, coffee and sugar cane are the predominant modern cultigens. Although used to some degree today for cane and pasture, leached hill slopes and other zones of red-yellow clays seldom contain archeological materials.

The former climax vegetation for virtually all the Atlantic watershed of Costa Rica was multi-tiered tropical rain forest, still to be seen on the northeastern slopes of the Cordillera Central, and to a much lesser degree on the lowland plain and in the Turrialba valley. Stanley (in Wagner 1964: 229) has described the jungle of the Santa Clara plain (Linea Vieja) as consisting of two to four tiers, reaching a height of 30-40 m (see Wagner 1964 for lists of species). Tropical rain forest originally covered all of eastern Central America from

northern South America to the Gulf of Honduras. Both the floral and faunal components of this environmental zone are fundamentally South American or Neotropical (Wagner 1964: 229-236; Stuart 1964: 342, 347-349). Additionally, it should be noted that tectonic processes observed as far north as the Canal Zone in Panama are related to a northwestern prong of the Andes (West 1964: 78), and that the richly developed paramo vegetation in the Costa Rican Talamancan range is, floristically, "plainly a formation of Andean affinities" (Wagner 1964: 237). Stuart (1964: 345) has also noted that "Central America is faunally to South America as the Mexican Plateau is to North America. Just as Mexico supports a dilute Nearctic fauna, so does Central America support a dilute Neotropical fauna".

A biotic assemblage characteristic of northern South America, then, extends well into Central America, especially along the Caribbean watershed. Prehistoric man was a part of this biota, and it would not be unusual to find that his traditions of land use, resource procurement, craft technology and even social organization exhibited a rather similar range of variation throughout the extent of this environmental zone.

CHAPTER 3: REGIONAL ETHNOHISTORY

The number of ethnohistorical sources which describe the Atlantic watershed of Costa Rica during the first two centuries after the Spanish Conquest is minimal compared to the documentation for Mesoamerica and Peru. In great part, this is due to the physical setting of the region and the consequent patterns of adaptation characteristic of the aboriginal inhabitants. It will be the purpose of this chapter to furnish an historical background against which the author's archeological data from the region can be compared. In many instances, ethnohistorical information has been invaluable in interpreting enigmas encountered in the course of excavations. It will be seen that, like the natural environment, the ethnohistory of eastern Costa Rica has much in common with that of northern South America.

Typically, historical and archeological syntheses portray the aboriginal cultures of Lower Central America as low status, slash and burn agriculturists with a subsistence based on tubers instead of grains, living in small scattered villages of ephemeral pole and thatch houses (West and Augelli 1966: 229). Although such a description is fundamentally accurate, it is perhaps overly negative, especially as it is often employed as a foil to descriptions of more advanced cultures in Nuclear America. Let us examine several aspects of indigenous culture in the Atlantic watershed of Costa Rica

as seen through the eyes of the Spanish chroniclers and later travelers.

Settlement Patterns

In general, settlements were dispersed, consisting of widely scattered small groups of two or three houses near parcels of land cleared for agriculture. Often these house groups were separated by kilometers of uncleared rain forest and difficult, broken terrain. Swidden agriculture was practised, augmenting the centrifugal tendencies of the settlement system. Usually the scattered house groups were tied by kinship and economic factors to a "capital" or principal settlement which featured mounds, cobble-paved streets, perhaps a plaza, and a cemetery or other religious-funerary features. Near Tucurrique in the Turrialba valley, the aboriginal inhabitants "lived in widely separated houses ... and in each house lived together all members of one family, or lineage" (Artieda y Chirino 1590 VII: 392). Joan Dávila (1566 III: 37) noted that "a kin group consisting of parents, children and grandchildren is known as a 'people' as well as a 'province'". A letter by the bishop of Nicaragua in 1692, Fray Nicolás, describes the palenques (large communal houses) of the Talamanca region as each holding 300 persons, all of one lineage, not mixing with other palenques. Such structures were constructed on hilltops for protection, and were 10 to 20 miles apart (Fray Nicolás 1692 IX: 23; Peralta 1886: 96).

It is interesting to note that in those parts of eastern Costa Rica where dispersed populations and shifting cultivation were endemic, there were no words in the local dialects corresponding to our concepts of "town" or "city". Even today, among the heavily accultural Bribri and Cabecar, no such words exist. It was precisely in these regions that the Spaniards encountered great difficulty in regrouping the indians into villages centered around a church for purposes of religious proselytizing and taxation. Strong resistance to these efforts continued through the 18th, 19th and even the 20th centuries. Agglomeration of populations was viewed as an utterly alien concept (Ferrero 1975: 189). Nevertheless, foci of religious, political and redistributive activities did exist, and will be further discussed in the chapters dealing with the archeological sequence.

House types

Although the data are meager, there appear to have been at least three types of house construction in the Atlantic watershed of Costa Rica around the time of the Conquest: circular with a conical roof; large, generally oval palenques, and rectangular with a sloping roof. Identical houses coupled with other features, like the raising of floors on stakes, continued to exist in the Talamanca region of Costa Rica well into the 20th century. The Northamerican explorer Gabb (1883 II: 370) published a detailed description of the circular variety: "... they are generally circular, about 30-50 feet in diameter and of almost the same

height. The framework is of long poles, which reach from the ground to the apex of the conical roof in some parts. The roof is supported by concentric rings of bound saplings or strong vines, which are in turn supported by more poles resting on the floor of the house, a third of the way in from its perimeter, as well as more rods placed obliquely along the line of the roof itself. The whole roof is thatched thickly with palm leaves, and the hole at the top of the cone is often covered with an old pottery vessel in order to keep out the rain. There is only one door to such houses, a large, square opening on one side. Sometimes a small roof is constructed over entryway to shelter it from rain. Hearths and sleeping quarters are inside."

Foundations of houses of this type, often constructed on man-made mounds, have been located by the author at several sites (see Chapter 9). Similar archeological features have been reported by Hartman (1901) in Orosi near Cartago and Las Mercedes on the Linea Vieja; Stirling (1969) at Marcocha on the Linea Vieja; Kennedy (1969) at Nájera near Turrialba, and Aguilar (1972) at Guayabo, also near Turrialba.

The Italian historian Benzoni, who supposedly accompanied the Spaniard Diego Gutierrez on his explorations through eastern Costa Rica from 1541 to 1544, describes a special house maintained by a cacique or chief solely for the times that he came to the river to fish. It was an oval house, 45 yards by 9 yards, thatched and covered with woven palm leaves and very skillfully constructed. The

rest of the houses in the clearing were of a cruder, lean-to style and common household articles were kept there for periodic use (Fernández 1889: 82).

Joan Dávila in 1566 described several houses on the "northern plain" (present day San Carlos region) as being rectangular, with a gabled roof and made of poles and thatch. He observed houses from 40 to 100 feet in length; one or two houses were usually found at any one site (Fernandez 1881-1907 III: 34-44). San Carlos lies along the frontier of Greater Nicoya, which is generally considered to be the southernmost extension of Mesoamerica. In Nicoya, as in most of Mesoamerica, the square cornered, rectangular house type predominated (Ferrero 1975: 118).

Subsistence

The subsistence base of the prehistoric peoples in eastern Costa Rica differed from that of most of Mesoamerica (corn, beans, squash, peppers) in that it centered around root and tree crops in combination with small mammal or riverine protein. Naturally, the efficient exploitation of these resources required special agricultural and adaptive strategies, about which more will be said in the final chapter. The present, brief examination of ethno-historical sources reveals that the calorie-protein combinations described are still essential in the diet of many modern Costa Ricans, and at the same time, noticeably different than those observed in nearby areas such as Guanacaste and western Nicaragua

(i.e. Mesoamerica).

While travelling through the old province of Suerre (which included the present day Linea Vieja sub-region) from 1541-1544, Diego Gutierrez saw many "plantations of yuccas" (yuca is the modern Spanish word for manioc or Manihot exculenta Crantz) and large groves of pejibaye palms (Bactris gasipaes HBK) which the natives valued greatly for food, as well as for making a "refreshing beverage" or chicha, a thick fermented beer (Fernandez Guardia 1913: 144-145). Manioc tubers and pejibaye fruit, the latter almost equal to peanuts in protein content, were probably the staples in the region. Chroniclers mention as many as 50,000 pejibaye palms in a single valley in eastern Costa Rica (Fernandez 1881-1907 VI: 185). Godinez Osorio noted in 1575 that "the indians plant maize to eat, but their principal sustenance is palm fruit which they call pejibaes, along with yuca and pineapple; of palm fruit they make a certain drink which they call mazamorra, with which they sustain and even inebriate themselves" (Fernandez 1881-1907 V: 73). Stone (1966: 27) has suggested that dependence on tubers and pejibayes is borne out in the archeology by the presence of raised rim grinding stones; since these two foodstuffs require more water in their preparation, the raised rim served to contain the mixture. Both manioc and pejibaye are characteristic of northern South America and Amazonia, the pejibaye being particularly associated with the Orinocco Basin (Stone 1966:27).

During his trip through Suerre, Diego Gutierrez was also given

fruit, fish and wild pig dried by fire on a babracot (a tropical forest trait according to Lowie 1948: 15). In colonial as well as in modern times among the surviving Talamanca indians, maize was of secondary importance as a foodstuff. This lack of interest in maize surprised the Spaniards, accustomed as they were to the important role played by maize in the subsistence economy of Mexico; when observed, it was repeatedly mentioned by some chroniclers only because it was one of the few crops with which they were familiar (Stone 1962: 13).

From manioc, a kind of bread (cazabe) was made, which could be kept for several months without spoiling (Lopez de Siqueyra 1603 V: 113). The production of unleavened manioc bread and "flour" (actually hard globular pellets about 2 mm in diameter) is a subsistence activity well documented from tropical forest peoples in Amazonia and northern Colombia (Lathrap 1970: 47-56).

Fruits most often mentioned by the Spaniards include the guayaba (Psidium guayava J.), pineapple (Ananas comusus(L.) Merrill), avocado (Persea americana Mill.), mamey (Mammea americana), and the fruit of the cacao plant (Theobroma Cacao L.) (Fernandez 1881-1907 V: 303). Sources of animal protein included jabali (Pecari angulatus Cope), zahino, some of which may have been tamed (Dicotyles tayacu Sel.), deer (Odocoileus virginianus Broke), tapir (Tapirella bairdii), armadillo (Dasypus novemcinctus) plus other kinds of rodents. Turkeys (Meleagrididae), gallinas del monte (Gallinacea), paugiles (Pauxi pauxi),

and buzzards (Cathartes aura) were also kept by some (Fray Manuel de Urcullu 1763: 14). Marine and riverine protein was assiduously exploited; in 1539, on the river San Juan, Alfonso Calero observed groups of indians fishing with spears and large nets. They had six fish of fifty pounds each. He later noted the hunting of "sea calves" (manatee Manatus americanus Dsm.) near the river's mouth (Fernandez Guardia 1913: 121, 131). Tortoises and their eggs were taken in season (de San Jose 1703 V: 423), and Gagini (1917: 78-80) has noted that Suerre in the Talamancan language can be analyzed as: su or sue = tortoise, and re or ri = river, hence the name for the modern Tortuguero river which passes through the old province of Suerre. Concentrated utilization of riverine protein is one of the traits diagnostic of Amazonian tropical cultures listed by Lowie (1948).

Hunting in recent times was done predominantly with bows, arrow and blowguns made from the hard black wood of the pejibaye palm; points were of the same wood or of metal. Bolas for snaring birds and ambushing or trapping for larger game were also employed. Fishing was usually accomplished through use of a bow and barbed arrow, but fish poisons were, and still are, frequently used as well. The poisons most often used come from a tree (Phyllanthus sp. Pittieri) and a vine (Serjania sp.), the former being stronger.

The grinding of foodstuffs, whether pejibayes, tubers or grains, is usually carried out on flat, unmodified river stones utilized by several families. Mullers are generally large oval stones which rocked back and forth on edge, rather than pushed forward and drawn back as is done typically in Mesoamerica. Raised rim precolumbian metates from old

graves, as well as wooden mortars, are sometimes used (the archeological metates do show a pattern of use characteristic of a back and forth motion, at least during the earlier time periods). Foods in historical times were usually boiled or roasted (Stone 1962: 14-15).

Kinship and Social Organization

The 20th century inhabitants of the Talamanca region of Costa Rica (the Bribri and Cabecar) are organized into matrilineal clans. Membership in the clans is assigned on the basis of a descent line traced through females. The clans in turn are grouped into moieties, two exogamous groups whose purpose seems to be solely control over the exchange of married partners. Bozzolli (1975) has recently described two moieties in the Talamanca, one with 30 clans, the other with 31. Clans within each moiety are grouped into pairs or groups of three or four, which represent closely related clans. The Bribri word for clan is the same as the word for seeds set aside for planting. In Bribri thought, the clan is compared to a plant with extending branches. Their word for "indians" in general, as opposed to other racial stock, is the same as that for seeds and clan. All indians known or remembered by the Bribri, that is, themselves and their immediate neighbours, are said to have originated from corn seed brought by Sibö (God) to a hill in the upper Lari river. The different clans were named at that time, and assigned their respective jobs; some were turned into animals like wild pigs, monkeys or felines (Bozzolli 1975: 28-32).

Clans were and are usually associated with a certain geographical feature, such as part of a river valley or around a spring; presumably

in the past such domains included localities like the sources of stone suitable for knapping, or deposits of good pottery clay. The clan that occupies each such locality is regarded as the owner of the resources in question. Other clans are associated with specific plants or animals; only clan members may harvest, hunt or otherwise have to do with that aspect of the natural realm. Monkey and jaguar clans were those who appointed the war chiefs, while other clans appointed shamans, buriers, funeral singers and other such offices. It is remembered that, in the past, war chiefs had the power to distribute the clans as they wished over the territories they controlled; spatially, a monkey clan would be placed between two other clans, a jaguar clan would settle between the next two, and so on. Since the clan groups were often strung out along the length of a river valley, this systematic spacing of the population served to disperse it considerably. As a military or coercive strategy, "divide to maintain control" was probably effective; systematic, non-excessive exploitation of certain natural resources was undoubtedly accomplished at the same time. The Spaniards observed similar "linear villages", sometimes of great length, along rivers in the Amazonian tropical forest (Carvajal 1934).

Language

The Bribri language spoken in the Talamanca region belongs to the Central American subgroup of the Eastern Chibchan family. This family in turn is grouped with the Chibchan microphylum of a large language group, Macrochibcha (Vogelin in Bozzolli 1975: 65).

The great majority of indigenous inhabitants from eastern Honduras

through Panama spoke languages pertaining to this Macrochibchan phylum, the sole exceptions being the Jicaque of Nicaragua and a few Nahuaspeaking trade enclaves such as the Sigua in Panama (Chapman 1958: 13-15). The core area of the Macrochibchan group is central and northern Colombia in South America.

The use of ethnographic data from Talamanca to elucidate archeological problems in the adjacent sub-regions of the coastal plain (Linea Vieja) and the Turrialba valley would seem to be justified by a statement in Fernandez Guardia (1918: 28): "It seems from a document written in the year 1617 (Fernandez 1881-1907 V: 219) that Guetar was the general mother tongue, which proves the kinship of the majority of the tribes of Talamanca with those which occupied the interior of the country. Three of these languages (Bribri, Cabecar and Terraba) are still preserved ...". He also notes the great similarity between the language of the Tucurrique (a locality near Turrialba) inhabitants and that of the Bribri.

Birth and Death Rituals

Maria Eugenia Bozzolli de Wille, whose doctoral dissertation (1975) focused on the practices and beliefs concerning birth and death among the modern Bribri, emphasized that these biological phenomena stand out among those patterns which uniquely define Bribri culture. Traditional rituals have persisted tenaciously through colonial times into the accultural stage, resisting strong pressures for change on the part of the Costa Rican government and the Catholic church.

Archeologically, we may expect to find little in the way of material

remains having directly to do with birth. Funeral and enterrment procedures, however, offer a very fertile ground for analysis at the archeological level; indeed, techniques of tomb construction vary greatly in time and space in Costa Rica, offering a rich source of data which help to offset the great handicaps with which the archeologist working in the humid tropics is saddled: general lack of surface features and non-preservation of organic remains.

Both birth and death are viewed by the Bribri as times of crisis for the society at large, and both are thought to be characterized by a state of n̄a, a highly contagious and much feared state of uncleanness. For this reason, the pregnant woman is expected to give birth alone in a shelter of leaves hundreds of yards from her house, may not be seen or touched for several weeks (previously months) by anyone except specially designated individuals, and must undergo rather elaborate rituals in order to be admitted once again as a regularly functioning member of the group (Bozzolli 1975: 73-93).

The first reports of Atlantic coast indigenous burial practices are those of Columbus' party, who landed at Cariary, now modern Port Limon (de las Casas 1961 II: 58-59). The Spaniards observed small houses built over the graves and mummification of corpses with resins, as well as body wrappings of cloth. Cevallos in 1610 (Fernandez 1881-1907 V: 159) described the primary burial of an important personage in which the corpse was adorned with gold pendants and other precious possessions; all his slaves were sacrificed and buried with him, in order that they might serve him in the afterlife. Fray Manuel de Urcullu in 1763 witnessed full procedures for a secondary or bone burial in the Talamancas,

where it was traditionally preferred. Specially trained wrappers enveloped the body in large leaves, tied up with vines; it was then slung on a pole and carried to a shelter of palm leaves several hundred yards from the house. There it was hung up between two poles and left for a year to allow full decomposition of the body. At that time a funeral was held for the bones which were rewrapped for the occasion. Funeral singers were called and a chichada, or drunken feast, was held for three days and nights, to accompaniment of drums, rattles, whistles and dancing. At the end of the third day of the feast, the singers, dressed in feathered ornaments, carried the bones to the family sepulchre, which was made of strong timber slabs some six yards long placed in a lean-to fashion against a horizontal beam supported by two posts. These tombs were about two kilometers from the village, on the tops of hills. If the deceased was an important personage, a macaw and/or slave, if the man had them, was killed and buried at the same time. Skulls of enemies he may have killed were placed nearby along with the deceased's spears and arrows. If a young man, his blowgun was left with him; if a woman, her spindle and cotton. The bone bundle itself was not entombed, but remained above ground in the shelter.

Jose A. Angulo (1913: 153-154) observed a similar funeral rite in 1862, the only difference being that the bone bundle was buried in a family tomb some 5 m long by .5 m wide, which was covered with a large wooden slab 4 to 8 inches thick.

William Gabb (1875: 500-503) gives an account of another, virtually identical burial ritual, and was also present at the funeral of Santiago,

the last "king" of Talamanca. His bone bundle was deposited in a square pit, ten feet on a side, paved on the bottom with stones; again, heavy timber slabs were placed as a cover, sloping down from one side of the pit to the bottom of the other. Much care was taken so that the bones did not come in contact with the earth, hence the stone flooring.

Archeologically, "stone cist" tombs from the period AD 1000-1500 on the Atlantic watershed are floored with flat stones almost without exception. Instead of wooden slabs, they often possess covers or lids of lajas (volcanic flagstones). Those without laja tops may have had wooden ones, long since decayed.

CHAPTER 4: PREVIOUS ARCHEOLOGICAL RESEARCH IN THE ATLANTIC WATERSHED

Archeological investigations in the modern sense may be said to have begun in eastern Costa Rica with the work of Swedish archeologist Carl V. Hartman in 1896 and 1897. Although non-stratigraphic, Hartman's excavations were recorded in a careful and comprehensive manner, and he was able to set forth the first evidence for a sequence of archeological cultures in Costa Rica. Hartman concentrated his efforts on the excavation of burial grounds, and his meticulous recording of funerary constructions and associations remains unsurpassed today. He relied on local knowledge and surface features to locate sites; since he was directed to sites with circular mounds, all those he excavated fall into what is here called the Stone Cist period (AD 1000-1500), the latest of the periods set forth by the author for the Atlantic watershed. Occasional artifacts or sherds illustrated by Hartman (1901: Plates 53(10); 39(4); 37(6); 27(4)) from his Atlantic zone excavations belong to earlier periods, so at least some of the sites he worked were multi-component. He apparently attached no great importance to midden deposits, and consequently did not excavate them with an eye toward obtaining cultural stratigraphy. Although Hartman did not approach his excavations with a clear problem orientation in the modern sense (one of his major duties was to obtain pieces for the Royal Natural History Museum in Sweden), his careful recording of data allows modern archeologists to ask different questions of the materials. Hartman's collections at the Carnegie Museum in Pittsburgh are currently under study by Oscar Fonseca, a young Costa Rican archeologist.

Sadly, Hartman's admirable example of the recording of excavation data was not followed up in Costa Rica for more than 50 years. Thus it is that archeological syntheses as recent as that of Willey (1971) have continued to rely on the relative and very general two part sequence for the Atlantic zone and the Highlands (Curridabat-Stone Cist Ware, the latter coeval in part with the Spanish Conquest, as shown by the presence of European glass beads in some tombs) established by Hartman at the turn of the century.

The next major publication dealing with Costa Rican archeology was Pottery of Costa Rica and Nicaragua by Samuel K. Lothrop (1926). This two volume compendium sought to classify Costa Rican and Nicaraguan archeological ceramics through a stylistic analysis of pottery in private and museum collections in several countries. Since the pottery studied came from uncontrolled looting activities, stratigraphic and associational controls were completely lacking, and the resultant classification is purely descriptive, with no temporal significance. Nevertheless, Lothrop's work constituted the first comprehensive description of Costa Rican archeological materials, and included an excellent summary and interpretation of relevant Spanish historical chronicles.

Although looting continued apace, controlled archeological excavations, with published results, were not carried out in Costa Rica until the late 1950's, when Claude Baudez and Michael D. Coe conducted stratigraphic excavations in northwest Costa Rica. Their careful work produced the first reliable archeological sequence for the Guanacaste-Nicoya region of the country (Coe and Baudez 1961; Baudez and Coe 1962;

Baudez 1967). An almost identical sequence was published by Norweb (1962) for the Rivas Peninsula of Nicaragua, and today the northwest part of Costa Rica and southwest Nicaragua are customarily considered as one archeological unit, the Greater Nicoya Sub-Area, which forms the southernmost tip of Mesoamerica (Kirchoff 1943; Willey 1971). That this culture area frontier may not be valid for all time periods in Lower Central America, is a point touched on in subsequent chapters of this dissertation.

Doris Stone, who served as President of the Board of Directors of the Museo Nacional de Costa Rica from 1949 to 1967, conducted brief excavations in many parts of the country, but her results have not been published. Her summaries of Costa Rican archeology (1948; 1958) are primarily descriptive, following Lothrop's and Hartman's terminology in great part; other archeological articles are basically interpretive discussions or descriptions of certain artifacts (Stone 1956; 1963; 1966; 1972; Stone and Balser 1965). Stone also published in 1962 the first full-fledged ethnography of the surviving Talamanca Indians, the Bribrí and Cabecar. This excellent monograph brought together information about subsistence, settlement patterns, language, myths, birth and burial ceremonies, much of which could be traced back through the accounts of the Spanish chroniclers and into the archeology of the pre-historic period. A more recent synthesis by Stone (1972) treats all of Central America.

In the archeological sub-area known as Greater Chiriquí, which includes the Chiriquí province of Panama and southwest Costa Rica, early descriptive, non-stratigraphic studies (Holmes 1888; MacCurdy

1911; Osgood 1935) have influenced later writers, much as Lothrop's 1926 work has affected the ceramic terminology in the rest of Costa Rica. In the 1950s, the German archeologist Wolfgang Haberland excavated many sites throughout the region, but again focused his efforts on cemeteries and did not publish radiocarbon dates. He did place the Scarified Ware of Holmes (1888) and his own Aguas Buenas complex (Haberland 1955) as approximately contemporary with Zoned Bichrome ceramics in Guanacaste because of stylistic similarities. Most of his articles were short site reports (Haberland 1959; 1960; 1961a; 1961b; 1969).

In 1963, Lothrop published the results of rather extensive test excavations in the Diquis Delta. Although he did dig some of his pits in one foot levels, he was only able to offer very general observations on the relative age of ceramics, most of which might be questioned in view of the limited sample of stratigraphically excavated materials. Lothrop typed his ceramics descriptively and sought to associate them with dated pottery from other regions such as Guanacaste and Central Panama. He published no radiocarbon dates. Laura and Luigi Minnelli have also published brief reports on test excavations in the San Vito locality (Laurencich and Minnelli 1964; 1973).

During the 1960s, controlled archeological excavations were carried out by M.W. Stirling (1969) on the Linea Vieja lowlands and by W.J. Kennedy (1968) and Carlos Aguilar (1972) in the Reventazon river valley near Turrialba. These reports make up the first body of published data deriving from stratigraphic digging in the Atlantic watershed, a method in use more than 50 years earlier in other parts of the Americas.

Stirling dug at five different sites along the Linea Vieja railroad, focusing primarily on tombs, and published a series of radiocarbon dates ranging from AD 144-1470, thereby establishing for the first time at least 1400 years of time depth for the precolumbian cultures in the region. Stirling did not rigorously classify his ceramics, limiting himself to short verbal descriptions and occasional comparisons with Guanacaste pottery or to contemporary Mesoamerican materials.

In his 1968 doctoral dissertation, Kennedy sought to correlate archeological sites of different time periods with a series of nine natural life zones (from Holdridge's 1947 World Life Zone classification) present in the Turrialba locality. He found that most sites were located in the same zones that support the majority of the modern population. The eight radiocarbon dates published by Kennedy range from AD 420 \pm 210 (5-5475A) to AD 1220 \pm 210 (28-5592A), and his associated ceramics at each point in time are similar to those reported by Stirling (although his brief 1969 report had no ceramic illustrations, Stirling deposited more than 75 color slides of his artifactual material at the Museo Nacional de Costa Rica). The Early and Late (chronological) Periods in Kennedy's postulated sequence were less well represented by excavated sites than was his very long Middle Period (AD 400-1300). Kennedy classified his ceramics typologically, but called each division a ware rather than a type, perhaps influenced by Lothrop's 1926 publication.

During the latter part of the sixties, Carlos H. Aguilar P. of the Universidad de Costa Rica excavated and partially restored the

ceremonial center of Guayabo near Turrialba (Aguilar 1972). This large site, featuring circular mounds, 3 - 5 m high and 30 m in diameter, as well as cobble-paved streets, house circles, an aqueduct and many elaborate tombs, had been the source of many large and finely carved stone sculptures, some of which are in the MNCR. Aguilar also classified his ceramics typologically, and again his types were recognizable in the descriptions of Lothrop, Stone, Stirling and Kennedy, although he employs a different nomenclature. While he postulates three periods (Early - pre-AD 800; Middle A and B - AD 800-1300; Late - AD 1300-1400), Aguilar published just one radiocarbon date of AD 953 \pm 241, done on a sample taken from an Early period context. It is probable that most of the Guayabo architecture was constructed after AD 1000, although the site itself is multi-component, as the author discovered upon examination of the Guayabo ceramics; although limited in number, sherds are present which pertain to the AD 1-500 time period.

From 1966 until the present, F.W. Lange has excavated at many sites along the Guanacaste coast, primarily in shell middens (Lange 1971a; 1971b; 1975; 1976). His work has resulted in several modifications of Baudez' original ceramic sequence, and has also shed light on changing subsistence activities through various time periods, especially as they relate to small scale climate change and other natural phenomena such as volcanic activity. Jeanne Sweeney has recently re-analyzed the ceramics, lithics and faunal material excavated by M.D. Coe some twenty years earlier in Guanacaste (Sweeney 1975).

In sum, then, we may say that archeology is just beginning to go beyond the Classificatory-Historical stage (Willey and Sabloff 1974:

88) in Greater Nicoya, but that basic time-space problems continued to be unresolved in all the other regions of Costa Rica well into the nineteen seventies. When ceramics and other artifacts were formally classified, it was usually done in a subjective, non-explicit way, the exceptions being Baudez, Kennedy and Sweeney. Paul Healy, who re-worked the material excavated by Norweb many years previously in Rivas, Nicaragua, employed the standard Type-Variety system in use in Mayan Mesoamerica. A comparison and discussion of the different systems of artifact classification will be found in Chapter 5.

In general, there seems to have been an overemphasis on burial excavation and a slighting of refuse deposits in early Costa Rican archeology, although in actuality, it would be more correct to say that the burial data were not fully utilized. Burials represent valuable units of contemporaneity in an archeological sequence, and associations must be carefully and completely noted. Many investigators have approached their work in the Atlantic watershed of Costa Rica with no clear cut problems in mind. Problems of preservation and the tremendous variety of ceramic styles in the region can only further cloud unfocused research. Yet the basic data must be gotten and a time-space framework set up, in order to begin dealing with cultural variability. Early work in Costa Rica often sought to associate certain archeological remains with historic people, hence the mistaken notion of Chorotega (Greater Nicoya), Guetar (Atlantic watershed) and Brumka (Greater Chiriqui) prehistoric culture areas, propagated by the historian Jorge Lines (1934; 1941), among others. Actually these were names of individual chieftains or tribes which were mistakenly applied by the

Spaniards to whole geographical regions (Ferrero 1975: 56); the real archeological situation is much more complex. It will be the purpose of this dissertation to establish a basic cultural historical framework for part of the Atlantic watershed so that further work may be tested against it and inquiries into prehistoric cultural process begun.

PART II:

THE THEORETICAL FRAMEWORK

CHAPTER 5: THE PRESENT RESEARCH: METHOD AND THEORY

This dissertation was conceived as a basic culture history (heretofore lacking) of the Atlantic watershed of Costa Rica, incorporating a model which attempts to explain the failure of "higher cultures" (those marked by urbanism, a state-like political structure, a calendar, writing, monumentality, and a pervasive art style) to develop in the region and, by extension, throughout the Intermediate Area. This format, perhaps overly broad, was chosen and kept so as to provide a framework of reference against which further, more specialized work could be compared.

Nevertheless, the following limitations should be well noted. With only three exceptions, all sites collected or excavated are found in the Linea Vieja or the Turrialba valley subregions. This geographical restriction was imposed in response to the perceived need for more intensive, horizontal-type excavations at the expense of extensive test pitting. An appropriate site was located in each of the two above mentioned zones, and up to four to six months were spent at each site. The more comprehensive data obtained from these sites have resulted in a much clearer picture of the past, and are thought to far outweigh the

possible loss of spatial control. Overall, the prehistoric cultural homogeneity ascribed to the Atlantic watershed by Stone and others was borne out in the present research; there is a huge variety of ceramics, for instance, in the region, but one sees basically the same varieties throughout, albeit in varying proportions. Caution should be used, however, in applying this ceramic sequence to the actual Atlantic coast, which was not surveyed. It is probable that different adaptive and subsistence strategies on the coast produced different archeological complexes, perhaps more similar to those of Caribbean coastal Nicaragua (Magnus 1974), where the ceramics are more in the Antillean tradition and very unlike those of the Linea Vieja. Likewise, differences in artifact style should be expected between the northern and southern extremes of the Atlantic watershed, as indeed was noted between the San Carlos and Sixaola sub-regions.

Site Location and Mapping

In general, sites were located by walking plowed or open ground and by soliciting local knowledge. Systematic survey of large areas was judged to be inefficient in terms of time and money, given the nature of the project; it will be used in future work in the Turrialba valley and on the coast. Air photographs are useless in locating sites because of the heavy tropical ground cover.

Surface conditions permitting, a surface collection was made,

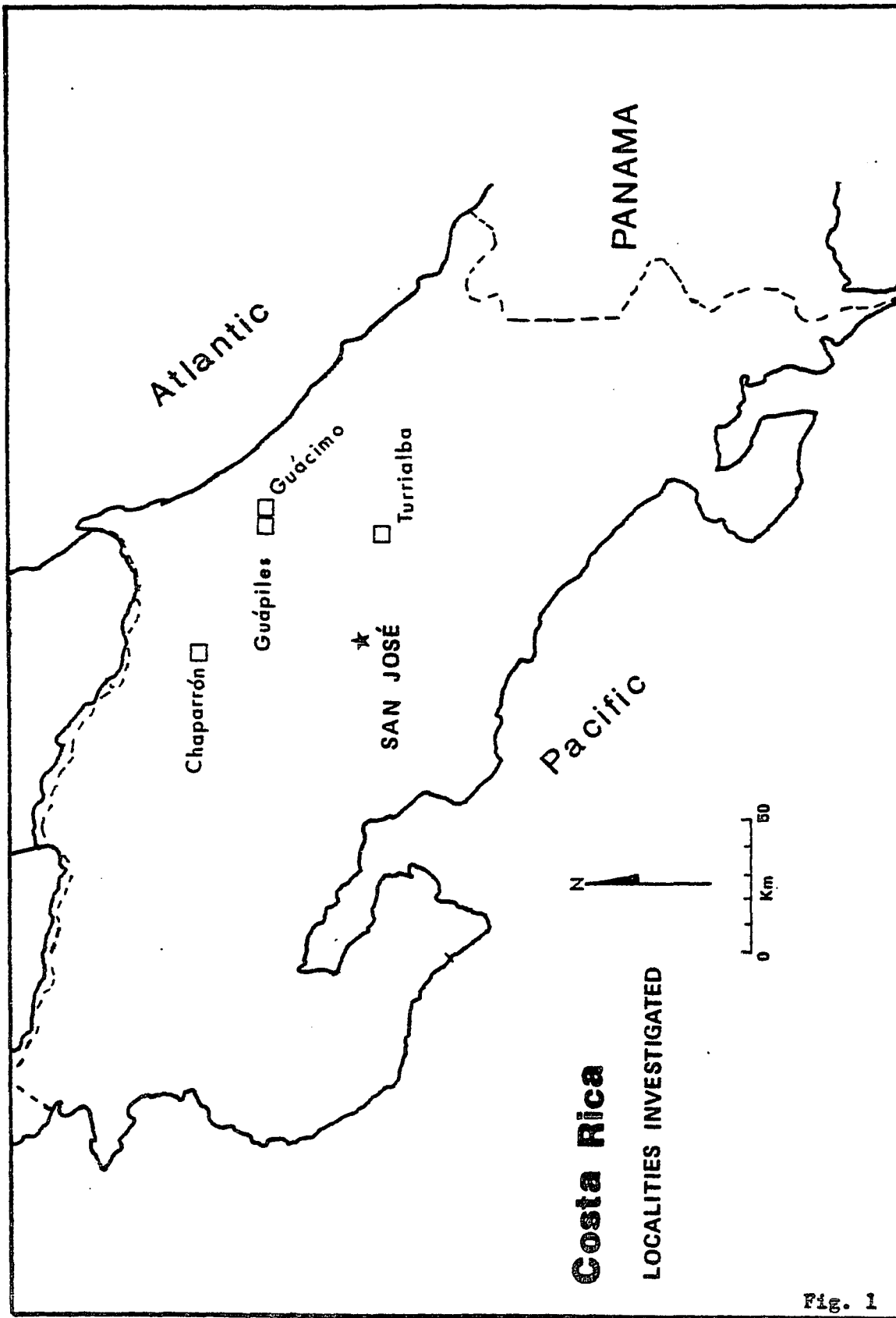


Fig. 1

usually in large spatial units formed by sub-dividing agricultural parcels. Plain sherds less than three centimeters in diameter were not picked up. The purpose of these collections was to observe the range of artifact variation at the site, as well as to elucidate potential site stratigraphy, that is, clustering of artifacts of different function or of different ages over the site. The latter goal was achieved only very occasionally.

Locality maps showing site locations were drawn based on the 1:50,000 scale maps made up by the Instituto Geografico Nacional, in collaboration with the Interamerican Geodesic Service. Simple site maps were made with a Brunton compass and metric tapes. If surface features were few or absent, and only test pits were dug at the site, the map was made merely to locate these excavation units. If surface or tomb features required it, the excavated portion of a site was gridded and drawn stone by stone.

Excavation Methods

Techniques of excavation varied according to the special characteristics of each site. In almost every site, at least one 2 x 2 m test pit was dug in artificial levels of 10 or 20 cm, which were continued until three levels had been removed which were sterile of cultural materials. All dirt removed was screened through 1 cm mesh; ceramic and lithic artifacts were placed in labeled bags. Although visible stratification due to natural soil horizons was often observed, visible stratigraphy was not. Very few pits presented cultural layers which could be perceived and followed, due, no doubt, to the thick

humic ground cover and constant leaching, as well as rapid surface erosion. When a combination of visible stratification and stratigraphy was observed, the natural layers were excavated as units. Unfortunately, the site with the deepest and best defined stratigraphy, Finca Numancia (40-FN), changed owners during the project, and we were not allowed to continue the layer-wise excavation of a pit formerly dug in arbitrary levels.

All tombs encountered were formed wholly or in part by mostly unaltered river cobbles. They were excavated as follows: (1) Surface earth was stripped away to a depth sufficient to expose the uppermost part or outline, which was drawn and photographed; (2) leaving the framing stones or walls standing, earth was removed until the floor and/or grave goods had been exposed; at this point, more photographs were taken. In the excavation of more than 100 burials, not a single bone or tooth was found, although the tombs were invariably excavated by hand trowel and whisk broom.

In two sites, La Montaña (18-LM) and La Cabaña (20-CB), long trenches followed by larger scale horizontal excavations were carried out. At 18-LM, a 13 x 22 m section of a cemetery dating to AD 300-700 was first removed by the method described above; beneath the cemetery, on what had been a former ground surface, lay an occupational deposit dating to 500-1000 BC. The latter was excavated completely by trowel in an effort to locate living features, charcoal samples and the maximum number of small flint flakes and sherds which characterized the occupation. At 20-CB, stripping operations over an area of 75 x 50 m revealed a section of a late (AD 1000-1500) ceremonial center and

living site, complete with living mounds, stairways, plaza, paved roads and domestic activity areas. Backdirt was removed with wheelbarrows.

Artifact Classification

The basic unit of analysis in the present classification will be the mode (Rouse 1939; 1960: 313; Smith, Willey and Gifford 1960: 331; Sabloff and Smith 1969: 279; Dunnell 1971: 49, 200). Modes may be viewed as a conceptual shorthand, abstracted from observation of samples from the artifactual totality, a phenomenological or tangible realm. A mode (of rim profile, support form, paste, surface finish, or decoration, for example) represents the observable range of variation in the "raw" phenomenological attributes, which are infinitely variable when measured with sufficient precision. Non-cultural attributes, like the atomic structure of the elements making up a sherd, are not considered. It is the job of the archeologist to isolate from the attribute continuum modes which are relevant to the problem he is addressing. Since the goal of the present classification is fundamentally a chronological one, the modes selected will be primarily of "historical" rather than "descriptive" or "functional" significance (Steward 1954; Thomas 1972). That is, the modes isolated will be temporally diagnostic, to a greater or lesser degree. Where it is instructive, modal series will be formulated illustrating trends of stylistic change over time.

Since the ceramic type (a cluster of modes) has been the basic unit of analysis in previous classifications of Costa Rican pottery (Baudez 1967; Kennedy 1968; Lange 1971; Aguilar 1972; Sweeney 1974),

as well as in those from adjacent regions (Linares 1968; Magnus 1974; Healy 1974), it has been deemed necessary to designate similar units for the purpose of comparability. As Sabloff and Smith (1969: 283-284) note, types lend themselves more readily to inter-site comparisons, as they are (when properly defined) rather complex units, more limited in time and space than are single modes, which may be very long lived or widespread.

The problem has been that few archeologists have defined "type" in exactly the same way. Although typological classifications generally provide a wealth of descriptive information, it is often not clear exactly how the archeologist arrived at his types; in other words, his classificatory system is not explicit. The Type-Variety system of ceramic classification used in Mayan Mesoamerica (Smith, Willey and Gifford 1960; Sabloff and Smith 1969) is a taxonomic or dendritic system which specifies the criteria for several hierarchical classes, in order of ascending generality (variety, type, group, ware, complex). Since each class is defined on the basis of different criteria (paste and surface finish define ware; vessel form and decorative technique define type), the reader seeking modal information may confine his search to the appropriate classes, instead of searching through lengthy, often highly variable type descriptions. Nevertheless, Sabloff and Smith also recommend the addition of modal tables, as certain modes often cross-cut many types, and their presence may be buried in the type description, for example, as one of 15 varieties of rim form displayed by the type.

Of the published classifications of Lower Central American

ceramics, only that of Healy (1974) adheres to the standard Type-Variety system, as well as noting definitive modes for each type. Other authors have defined their types on the basis of the subjective combination of modes of paste, surface finish, form and decoration. Often, decorative technique and a range of vessel forms are used to define the type as they are in the Type-Variety system, but real taxonomy (a series of hierarchical classes) is not employed. Terminology is frequently confusing; although Sweeney (1975: 57-59) professes to use Type-Variety, she makes no mention of wares or groups as defined by that system, confining her descriptions to types and a few varieties. In fact, she follows Baudez' (1967: 3-17) system, which is in turn based on the Ford (1962) recommendations for forming temporally significant artifact types. The Ford system is not taxonomic.

Kennedy's typology, perhaps influenced by Lothrop's (1926) descriptions, seems to use the words "type" and "ware" synonymously (1968: 34-37); his basic units of classification are defined variously by paste texture, surface finish, color or decorative technique. Sabloff and Smith cite several other examples of terminological or conceptual confusion in the use of typological systems (1969: 279). Kennedy's ceramic sample is divided into undecorated and decorated "wares", but information on paste and surface finish must be sought in the extensive verbal descriptions of each ceramic unit. He does include quantifications of modal data, in this case vessel forms, handles, supports and decorative adornos. He also discusses other modes in a more general distributional sense. All authors mentioned above include helpful comparative sections in which relationships with

other archeological regions are discussed.

A taxonomic typology was not employed in the present study for two reasons: (1) The amount of modal variation, especially in decorative technique, is very large in the collections analyzed. For instance, if ten modes of decorative techniques are typical of one time period, one may expect to find a large number of their permutations in the sample material. Properly applied taxonomy in this case results in a multitude of minimally significant classes; when these are all given different type names, a false impression of separateness is fostered. If, on the other hand, the definitive modes for the type are set up in an overly general way, serious problems are encountered in properly categorizing a collection; the amount of non-classifiable, "in between" material becomes considerable and subjectivity increasingly comes into play. In other words, it becomes difficult to operationalize the system or to use it in the identification of new material (Thomas 1972). (2) One of the favorable aspects of taxonomic typology, complete description, has been largely accomplished by previous studies (Lothrop 1926; Stone 1958, 1966, 1972; Kennedy 1968; Aguilar 1972). Where previously unreported material is dealt with here, it will receive correspondingly complete description.

The procedure used here will be as follows: for each time period covered, certain ceramic modes will be defined which are diagnostic for that period. Some of these modes overlap more than one time period. Where possible, modal series will be presented, to illustrate trends in stylistic change. Absolute numbers and percentages for all modes used will be graphed through all periods by excavation unit. In a few

cases, not all levels of a stratigraphic pit were used in forming the seriation charts; this was due to disturbance by agricultural activities in the upper levels, which redeposited and mixed cultural materials.

Emphasis will be placed on modes of form and decoration, as they are better indicators of temporal change and are more easily recognizable. As Rouse (1960) has noted, modes are inherent in any collection, while some types present serious problems in identification. This does not mean that modes necessarily represent the tangible manifestation of mental templates, or the shared cultural norms of the makers (Rouse 1939, 1960; Spaulding 1954a, 1954b); some may, and others may not. Here, only those modes which have some value as time markers will be utilized. Occasionally, modal information from surface or non-stratigraphic contexts (tombs) will be discussed; this data will not appear in the seriation charts, which are made up entirely of stratigraphically excavated units.

Where advisable, an aggregate of modes will be described, named and presented as a comparative unit for use against previously published typologies in neighbouring regions. Sometimes this will be a type, based on a limited range of variation in vessel form and decorative technique; other times, it will be a group (Sabloff and Smith 1969: 279), which is really a combination of closely related types or "super type"; it consolidates material which does not lend itself to strict typology, or is too fragmentary for proper analysis. All the ceramic artifacts in one group possess a similar range of variation as regards paste and surface finish, form and decorative

style. Both modes and types or groups will be compared to ceramic units in other parts of the Intermediate Area and Mesoamerica. It is interesting that Greater Nicoya (where the cultural sequence from Late Formative times forward is reasonably established) and the Atlantic watershed of Costa Rica, while exhibiting quite dissimilar ceramic types, show much better correlation at the modal level. This is very helpful in checking the chronology set up for the Atlantic watershed.

The highest level classificatory term used here will be complex, which is taken to mean the totality of the pottery manufactured by a culture in a specific region during a certain time period, or, in other words, the ceramic component of an archeological phase (Smith, Willey and Gifford 1960: 332). No wares or varieties, in the Type-Variety sense, will be established.

The proper names given to types or groups will be taken from nearby villages or farms, when feasible. Some of the type names published by Aguilar (1972) refer to well defined, easily recognized ceramic units; these, translated to English, will also be employed here for the sake of continuity. Other types suggested by him do not fit the facts as revealed in the author's investigations and will be discontinued or reformulated. W.J. Kennedy has kindly given the author permission to reformulate his 1968 ceramic classificatory units and period designations. It should be emphasized that Kennedy's data generally conform to the chronological sequence of modes set up here; the problem lies in the heuristic value of his "type-ware" classes, some of which are too specific ("split") while others are too general ("lumped"). Naturally, these kinds of problems have a great deal to

do with the size of the sample available for study; there is no doubt that future studies will revise and refine the ceramic units here presented by the author.

Units of Archeological Culture

To be able to successfully resolve archeological problems, chronological or otherwise, agreement on conceptual basics is necessary. Here, the use of words like site, locality, region, area, component, phase, horizon, tradition, period and stage conforms to that of Willey and Phillips (1958). Although their definition of phase (replacing the term focus in the McKern 1939 system) is at once clear and flexible, there have been problems in its application. Ideally, the definition of an archeological phase should incorporate evidence from several facets of prehistoric culture, such as settlement patterns, house forms, burial practices, subsistence activities, socio-political organization and religious beliefs, as well as the commonly used markers, ceramic and lithic complexes. In fact, some of this information may be difficult or impossible to acquire, depending on the circumstances particular to the region or site under investigation. Nevertheless, an attempt should be made to flesh out the phase definition as much as possible; all too often, a separate phase designation is based solely on the appearance of a few or even a single ceramic type, regardless of the fact that house forms, village organization, subsistence and the socio-political order continue unchanged. In this way, 200 to 500 years of a continuum is segregated, given a different appellation, and a false compartmentalized impression of cultural evolution is conveyed.

It is for these reasons that few phases as such will be defined in this dissertation, in the hope that future work will allow them to be formulated in a more precise and complete way. Thus, the basic organizational unit here will be the period, a more or less arbitrary block of prehistoric time into which phases can be fitted as they are defined. The crucial distinction between a stage of cultural development and the strictly chronological period should be carefully drawn. As noted in the introductory chapter, the stages used to classify cultural development in Mesoamerica (Preclassic, Classic, Postclassic) do not fit the facts in Costa Rica, where cultures remained in what amounted to a Formative or Preclassic stage throughout the 2500 year sequence known at present. The quasi-arbitrary periodization applied to the Andean archeological sequence is similarly inapropos, as is the scheme used by Willey (1971) for the Intermediate Area; naturally, he was obliged to employ a very general periodization in view of the archeological diversity and data gaps which characterize the Area.

Heretofore, the ordering of cultural units in the Atlantic watershed of Costa Rica has been limited to the hypothetical phase names (Curridabat, Stone Cist) proposed by Hartman, and the phase names and Early-Middle-Late periodization of Kennedy (1968) and Aguilar (1972). In general terms, the sequence of stylistic change in ceramics set forth by Kennedy and Aguilar was borne out by the author's research. Nevertheless, the Early-Middle-Late terminology should be changed, if only because it is awkward to add older cultural periods as they are discovered. The practice of designating somewhat arbitrary periods which are named according to some prevalent feature or artifact trait, as has been done in Greater Nicoya (Baudez and Coe 1962), would seem to

recommend itself. Since very little polychrome pottery is found in eastern Costa Rica, the Greater Nicoya periodization cannot be applied literally, and most of the periods of the Atlantic sequence will carry different descriptive modifiers.

The periodization used in this dissertation will be as follows: Because the earliest ceramic sites are still so few, and because the La Montana and Chaparron complexes are so different technically, no attempt will be made as yet to isolate a mode or feature diagnostic for those periods. Instead, the designation Middle Formative will be used, since divisions of Formative stage culture (Early, Middle, Late) have taken on a period sense in the literature (Coe 1961; Coe and Flannery 1967). Thus, the period of 1000-500 BC will be referred to as Middle Formative; La Montana and Chaparron, as phase or ceramic complex names, will be subsumed within it for the time being. It is possible that one or both may continue into the succeeding period of 500-1 BC.

Coe and Baudez (1961) defined the earliest known period in the Guanacaste, Costa Rica archeological sequence (300 BC - AD 300) as Zoned Bichrome, a reference to the predominant style of ceramic decoration in that period. Several phase names (Catalina - Tempisque valley; Chombo - Santa Elena peninsula; Montefresco - coastal Nicoya), each referring to a different sub-region or locality, were incorporated into the period time span. Healy (1974), in his classification of Rivas, Nicaragua ceramics excavated previously by Norweb (1964), also utilized the Zoned Bichrome period denomination, dividing it into two phases, Aviles (350 BC - AD 100) and San Jorge (AD 100-300). I would

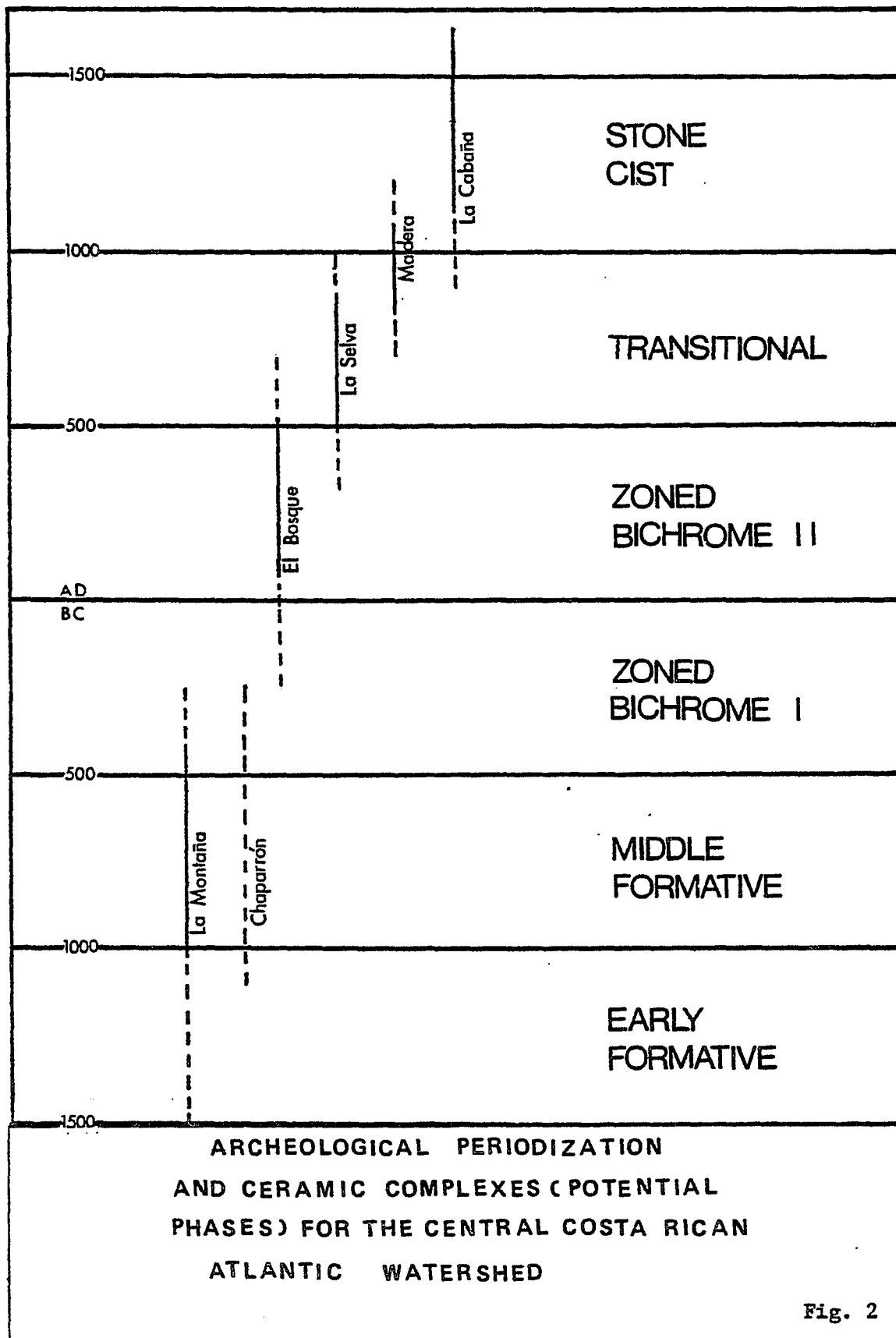


Fig. 2

like to suggest at this point that the qualifier Zoned Bichrome, in a period sense, be broadened to include all the ceramic complexes in Costa Rica and neighboring regions which have been shown to be contemporary and stylistically similar; these would include Concepcion and Aguas Buenas to the south, El Bosque to the east, and Pavas in the central highlands. The generalization of the period name is apt because all the aforementioned complexes are characterized by zoned bichrome decoration (red slip on buff), as well as sharing several other modes of plastic decoration (shell dentate stamping and combing, for example), rim form and vessel shape. Distinct phase or complex names would continue in use.

Further, it is suggested that a division into two periods, Zoned Bichrome I (500 - 1 BC) and Zoned Bichrome II (AD 1 - 500) be made. Although decorative zoning of slips or paints is seen in both periods, increasing evidence for the earlier presence of a broad line incised or grooved, as opposed to engraved, style of zoning, coupled with radically different modes of form, seems to indicate the need for a period division (the Chaparron complex; F.W. Lange, personal communication, in reference to broad line zoned pottery found below sherds of Rosales Zoned Engraved in a stratigraphic excavation at the Vidor site, coastal Guanacaste; Laura Minelli, personal communication, found identical pottery at the Barra Honda, Nicoya site). New phase or complex designations would be formulated as the data bases for both Zoned Bichrome periods are broadened.

It should be understood that, in Costa Rica, the Zoned Bichrome periods take the place of what would be called Late Formative, or Late

Preclassic, Protoclassic and Early Classic in Mesoamerican cultural sequences. As has been mentioned, no "Classic" stage appears in Costa Rican archeology; it may be for precisely this reason that typical "Preclassic" or "Formative" traits like rocker stamping, zoned slip or paint, resist decoration, mammiform supports, ocarinas, ceramic stamps and the like persist so much longer in the Costa Rican sequences.

The AD 500-1000 period in eastern Costa Rica is characterized by a wide variety of decorative techniques, among them maroon paint on orange slip, incising, engraving, resist decoration, linear (some multiple brush) motifs in white and black paint, and an applique style different than that of Zoned Bichrome II. Some of these modes make their first appearance in the AD 1-500 period, and others carry forward to the AD 1000-1500 period. Additionally, many different ceramic groups diagnostic of this period exhibit a rim folded over to the horizontal; the trait appears on both bowls or dishes and ollas (necked globular vessels). Zoned Bichrome II ollas most often display a rim at approximately a 45 degree angle to the collar; still, the everted rim probably began before AD 500 and it continues into the AD 1000-1500 period. Because this period displays several series of modal modifications which link the AD 1-500 period to the AD 1000-1500 period, none of which is actually confined to the AD 500-1000 time span, it has been named the Transitional Period. Although this terminology does not reflect a typical artifact mode or diagnostic feature, it has been deemed to be of greater heuristic value in that it accurately expresses what seems to have been happening. Much more obvious thresholds of cultural change, if one is to judge by widespread variation in artifact style, can be distinguished around the time of Christ and at AD 900-1100.

The Transitional Period corresponds, basically, with the Middle Period A of Kennedy (1968) and the Curridabat phase (actually a ceramic complex), a term first employed by Hartman (1907a), clarified by Rowe (1959), and then utilized by Baudez (1970), Willey (1971), Stone (1972) and Aguilar (1976). Although Aguilar definitely uses Curridabat in a phase sense, it is poorly defined, and its use by the other authors has been ambiguous. Hartman's original appellation referred to a kind of pottery characterized by long tripod supports with modelled applique adornos in the form of alligators; smaller ollas and dishes with similar applique, as well as resist decoration, were also found. Most of these vessels exhibited the horizontal everted rim. Present research by the author has shown that either an AD 400-850 or AD 500-1000 time slot for such pottery is fundamentally correct, although in at least two sites, long legged tripods were found in association with Zoned Bichrome II ceramics, indicating a probable earlier starting date for the tradition.

The period AD 1000-1500 in the Atlantic watershed of Costa Rica is probably the easiest to define archeologically. It is characterized by distinctive earth-filled circular mounds faced with walls of river cobbles, box-like tombs constructed of cobbles (stone cists), often capped with lajas or volcanic flagstones, and increasing amounts of polychrome pottery imported from northwest Costa Rica. The local ceramics are technically rather poorer than in earlier periods, and feature much applique decoration as well as unsuccessful attempts to copy the polychrome pottery being manufactured both to the north (Greater Nicoya) and the south (Greater Chiriqui). Other easily

recognizable pottery styles of the period show red painted linear patterns on a streaky yellow-cream to orange slip, and yellow painted geometric motifs on brick red and orange slips; these ceramics seem to be confined to the central part of the Atlantic watershed.

Still another diagnostic group features incised or engraved designs on a streaky brown slip that often looks like polished wood, and may be the result of organic resins applied while the pottery was still hot from firing (this is the oft-cited Chocolate Ware, which also occurs in Guanacaste). A ceramic mode shared by all these pottery styles, however, is again one of form: tripod hollow supports in the form of animal heads. Less frequent, but still common, are supports in the form of human heads or whole bodies. For this reason, a name like "effigy support" was first considered for this period; the problem is that effigy supports of one kind or another appear in considerable quantities from at least the first century AD to the time of the Conquest. Therefore, the name Stone Cist Period has been chosen, referring to the distinctive box-shaped tombs made of river cobbles which are found only in the AD 1000-1500 period. This mortuary feature has been located in all parts of the Atlantic watershed, as well as in the central highlands. A further consideration in this choice of name was that of continuity; Hartman's "Stone Cist Ware", in reality a ceramic complex, already appears in Willey's synthesis (Willey 1971: 341) in a relative chronological sense. By giving the term a period connotation, its meaning is clarified and stabilized, and its chronological significance is better focused.

Thus, the archeological sequence from 1000 BC to AD 1500 in

Atlantic watershed Costa Rica has been divided into periods, quasi-arbitrary blocks of time, primarily to facilitate reference to specific segments of the chronology. It is taken for granted that prehistoric cultural change (as observed by us in the artifactual or phenomenological realm) took the form of a continuum, in which individual modal or trait modification happened gradually and interrelatedly. As a logical consequence, spans of time should be observed in which modes diagnostic of different periods occur contemporaneously. Therefore, the ultimate definition of true archeological phases might include temporal limits which do not coincide with the period chronological divisions.

It was thought that, given the present state of archeological knowledge in the region, an attempt to create full fledged, temporally well defined phases would be specious and probably misleading. Under the present system, one can make reference to units of prehistoric time which are fairly distinct, stylistically speaking, yet leave the proper definition of phases until such time that sufficient settlement pattern and subsistence data, along with more radiocarbon dates, are in hand. Originally, the concept of establishing both periods and phases was adopted from the system for organizing archeological time and space in Greater Nicoya (Baudez and Coe 1962), in order to facilitate comparability. There, however, the various period and phase names most often refer to the same time span (for example, the Zoned Bichrome Period and the Catalina Phase in the Tempisque valley are both dated to 300 BC - AD 300).

In the Atlantic watershed sequence, an attempt will be made to

define phases which are more restricted temporally; these may be subsumed within a period (as in Healy 1974) or may even overlap two periods. Although no full fledged phases will be defined at this time, some potential phase delimitations are essayed where the data warrant it (see Fig. 2). Again, it should be reiterated that, viewed as a stage of cultural development, the whole of the Atlantic watershed archeological sequence presented here falls into one taxon, the Formative, characterized by sedentary, agricultural settlements, occasionally with small mound, platform or cobble paved features; craft technologies (ceramics, stone carving, lapidary work and metallurgy) were sophisticated.

PART III:

AN ARCHEOLOGICAL SEQUENCE FOR THE CENTRAL

ATLANTIC WATERSHED OF COSTA RICA

CHAPTER 6: THE MIDDLE FORMATIVE PERIOD (1000-500 BC)

Sites and Setting: La Montana Complex

This complex was recognized at only two sites during the course of the author's field research. By far the most important of the two was La Montana, a two component site on lands belonging to the Centro Agronómico Tropical de Investigación y Enseñanza (CATIE) in the Turrialba valley. The La Montana component, which is occupational in nature, lies beneath a Transitional Period cemetery, described in detail in Chapter 8.

The La Montana site is located within a CATIE experimental sector, where different varieties of manioc, beans, corn, pineapple and other crops are test grown. The site continues into an adjacent coffee field, as well as into lands pertaining to the La Florencia sugar cane plantation. In these sections, the site (at least the Transitional period cemetery) has been extensively looted, mostly due to the cover provided by the coffee bushes and the dense cane plants. The experimental sector, however, is protected by a 24-hour guard and has been untouched by looters. The excavations were made in a 15 m wide belt of unplanted land surrounding the experimental plots.

The site itself is flat, but the foothills leading to the Turrialba volcano begin only 100 to 200 m away and rise rather sharply. A small stream (3 to 4 m wide) passes nearby, but has been channelled and split in recent years. The land slopes very gradually away from the hills for some 500 to 700 m into a marshy zone before rising again

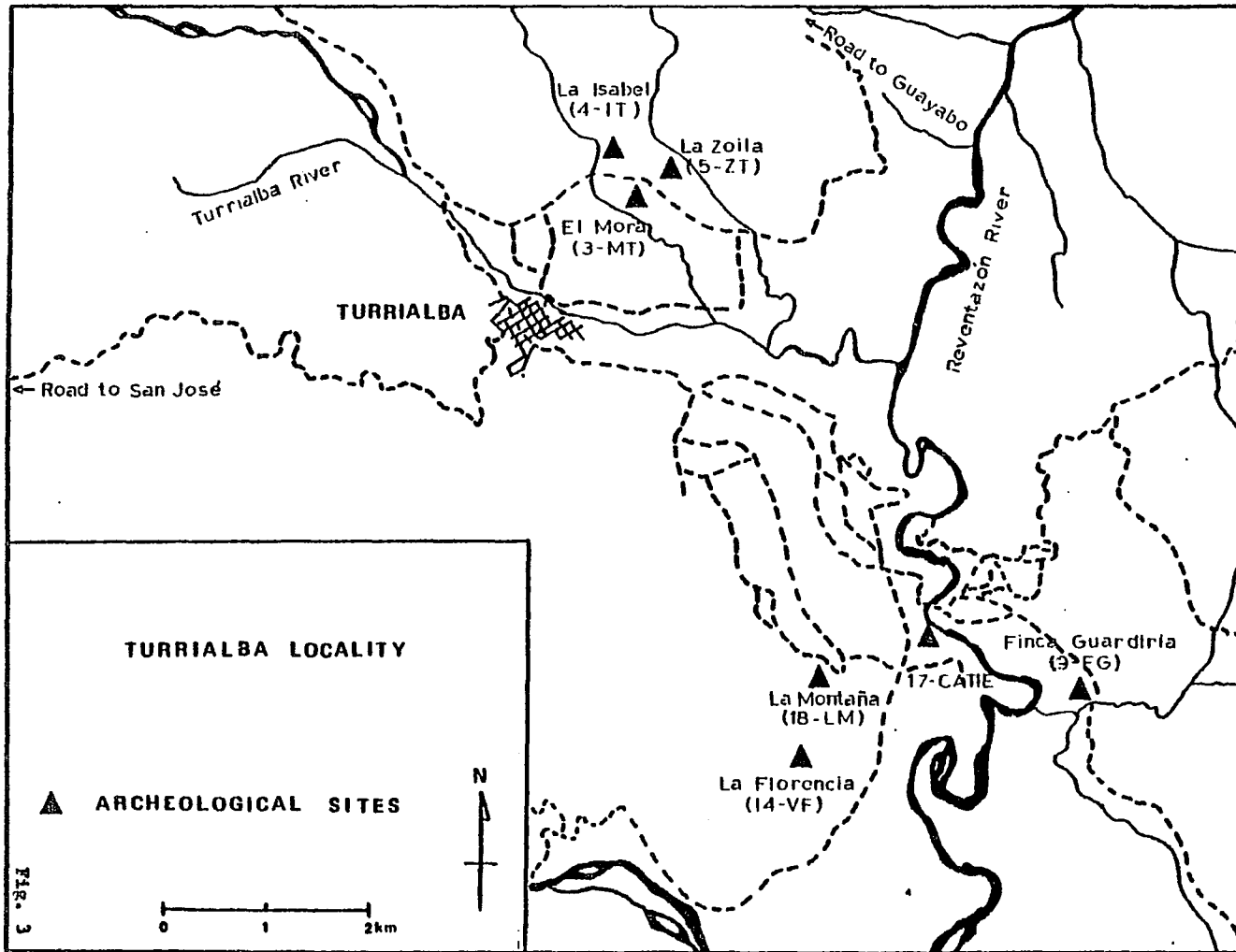


FIG. 3

to form the uppermost terrace of the large Reventazón river, about 1 km distant. The low area appears to be an ancient river bed, probably of the same Reventazón.

Excavations

In February and March of 1976, two irregularly shaped excavations were made into the Transitional Period Cemetery, following and exposing the stone features which characterize it. These excavation units were known as Sector 1 and Sector 2. A stratigraphic pit of 2 x 2 m (18-IM-1) was also dug some 25 m to the southeast; it was continued 50 cm into sterile soil, reaching a depth of 230 cm. It was in this pit that the very different potsherds characterizing the La Montana component were first noticed. In subsequent washing and preliminary sorting activities, some 30 unusual sherds were separated from levels corresponding to depths of 1-1.7 m; most of these sherds came from a visibly darker soil layer that occurred at a depth of 1-1.3 m. For reasons which will be amplified below, I believed this pottery to represent an Early or Middle Formative occupation below the cemetery and resolved to carry out further and more extensive excavations at the site.

From December 1976 to March 1977, then, an area of approximately 13 x 22 m was carefully excavated and mapped. The Transitional Period cemetery with its many grave goods was removed first (see Chapter 8). The whole of the La Montana layer was then exposed in the hope of finding habitation or activity area features. These did not appear, although a good artifact sample and reasonable amounts of charcoal

were collected.

Stratigraphy

Our excavations revealed the cemetery to be 80-110 cm deep, on the average, composed of lines of large river cobble and a fill of mixed earth and smaller rounded pebbles. Grave goods usually rested on or within a yellow, very sandy clay subsoil, which had an average depth of 20-25 cm. Beneath it lay a buried topsoil layer, now heavily leached, but still retaining a grey-brown color. This Layer D, as it was called, contained artifacts in the form of pottery, chipped and polished slate and volcanic stone, and chipped flint, as well as flecks of charcoal (Fig. 4). As the excavations progressed, we discovered large lenses of river sediments (sand, pebbles and rounded cobbles up to 15 cm) overlying Layer D, and also a former stream channel which had cut through the layer. The bottom of this channel showed a layer of decayed organic material, somewhat peat-like; where the stream had cut through Layer D, the easily visible stratification prevailing in the remainder of the excavation was erased and the quantity of artifactual material dropped off sharply. The stream flowed from west to east. We know, then, that the flooding of the site took place after or during the La Montana occupation, but before the construction of the Transitional Period cemetery; it was interesting to note how the Transitional people had avoided digging their tombs into the firmly packed sand and cobble lenses, preferring instead the very soft sandy soil surrounding them. Where they did come down on such a lens, the grave goods were deposited above it, as little as 40-50 cm below the surface instead of the usual 80-110 cm depth.

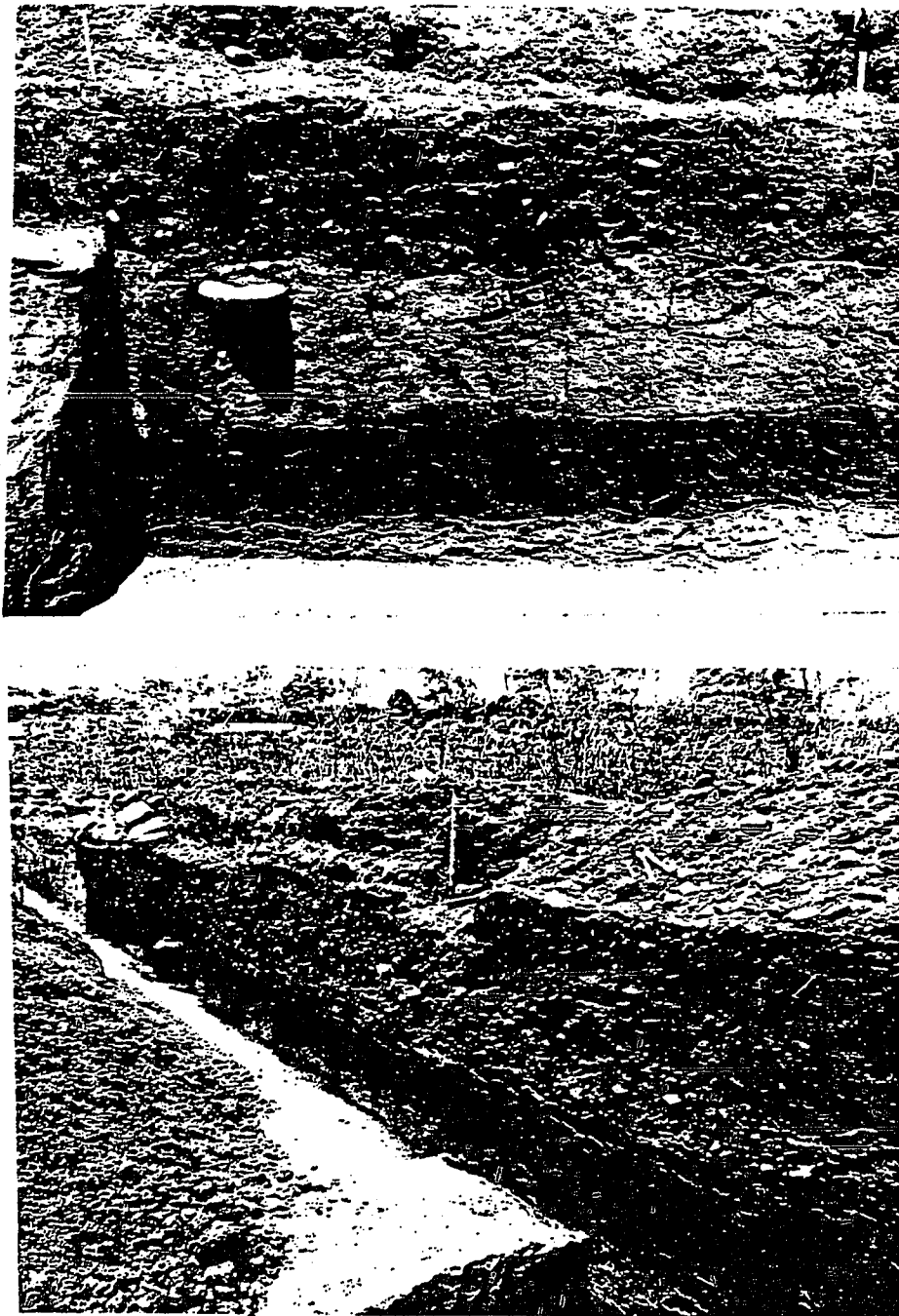


Fig. 4 Stratigraphy at La Montana: in upper photograph Layer D is the dark layer nearest the bottom; below, note lens of river sand and gravel over Layer D.

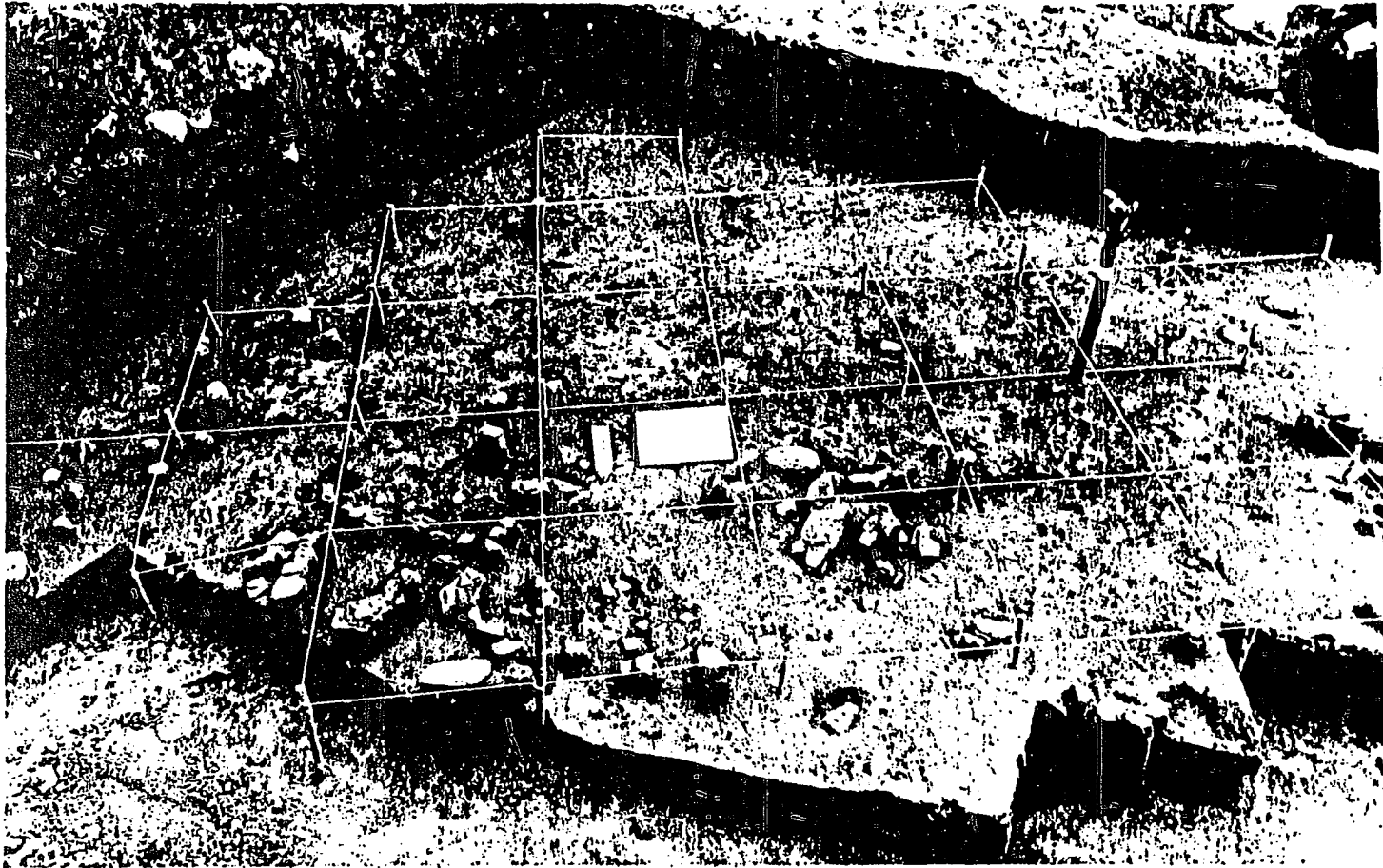


Fig. 5 A potential "living floor" exposed in Layer D.

Both the cemetery and the La Montana occupational component were excavated entirely by trowel in 5 x 5 m squares. Nevertheless, we were unable to locate any living features (post holes, hearths, floors, stone alignments) in Layer D. Heavier artifacts like the manos and cleavers were almost always found in a horizontal position, suggesting that they rested on a former surface, but even though two potential "floors" were exposed, we cannot be sure that they were in fact living surfaces (Fig. 5).

As we know that the site was flooded after or during the La Montana occupation, it may be that some of the surface material was stripped away before the site was again covered by alluvium. Also, as the extremely poor conditions of preservation at the site tend to destroy even ceramics, certain features may simply no longer be visible. No stratigraphy within Layer D could be discerned, neither in stylistic change in artifactual material nor as observable stratification.

Sites and Setting: ZIP Site

The only other site which yielded La Montana phase material was 16-ZIP (Zetillal de Ipís), located in a San Jose suburb. Although the Central valley is not actually on the Atlantic watershed of Costa Rica, its archeology is much more like that of Atlantic Costa Rica than any other region of the country, as Stone (1966: 20) has noted. At ZIP, land leveling operations exposed ceramics from the Transitional and Stone Cist Periods, as well as a single cylindrical vessel of Middle Formative date. In addition to zoned rocker stamping, the vessel displays applique pellets, fillets and stylized human figures, coupled

with broad line circumferential grooving (Fig. 25). Although recognized as unusual, this vessel was not assigned to the La Montana complex until fragments of identically formed vessels began to appear in Layer D at La Montana. The thick-walled basal angle and flat bottom are especially diagnostic, not appearing in any other period in the regional sequence. Body sherds of similar vessels (although differently decorated) also appeared at La Montana, some of which conserve the rim form (missing in the ZIP vessel); it is thought that these kinds of vessels may have been pottery drums (see also MacCurdy 1911: Plate XXVI a; Cooke 1976: Fig. 3; Linares 1977: Fig 9).

The broken cylindrical jar from ZIP was the only vessel of its kind found at the site. It is probable that it lay in a tomb which was unearthed by the bulldozers; one other likely Middle Formative sherd was found in ZIP surface collections (Fig. 25). Nevertheless, it is assumed that a Middle Formative occupation is (or was) to be found nearby.

Diagnostic Ceramic Modes and Types of the La Montana Complex

The La Montana ceramics are in most part very different from previously known Costa Rican pottery. For this reason, descriptions and comparisons of the various modes, types and groups will be more extensive: all modes of paste (P), surface finish (SF), rim and vessel form (R), supports (S), handles (H), other forms (F), and decoration (D) present in the La Montana Layer D sample will be discussed and quantified as raw counts and percentages. This modal information will be partially subsumed under the type or group headings for the sake of

organization; to observe how certain modes varied independently of types or groups, one should consult the appropriate appendix or seriation chart. Because the classification of pastes and surface finishes was mostly macroscopic and non-expert, greater emphasis is placed on modes of form and decoration. Comparative data is presented at the end of this section.

Paste

Two modes of paste were distinguished in the La Montana pottery. By far the most common is a yellowish-brown or reddish firing paste, rather soft and friable, with some black muscovite flecks and red hematite nodules; its most outstanding characteristic, however, is the presence of evenly distributed dark to pearl grey particles (whitish under certain firing conditions) up to 1 mm in size. These have been identified as basalt (J. Laguna, personal communication); their very even distribution throughout the paste suggests that they were added as a temper, but this is not certain. Remarkably, virtually every Middle Formative sherd recovered by the author to date (singly or in very small numbers from sites of other periods), whether from Turrialba, the Linea Vieja, the Central valley or San Carlos, has possessed this grey-speckled paste (P1). More than 99% of the sherds from Layer D at La Montana displayed P1.

A miniscule amount of pottery from La Montana showed a finer, sandy paste in which the grey particles were sometimes absent (P2). This paste only occurred in sherds of the type Atlantic Red-Filled Black (TG3).

Surface finish

There are three kinds of surface finish evident on La Montana pottery; SF1 is a self-lipped or floated surface (Shepard 1956: 191) on which polishing striations usually remain visible. It generally has a flesh-colored tone, but colors range from brown to reddish brown and orange; most differences in color appear to stem from vagaries of the firing process. On many sherds this surface coat peels off easily. More than 95% of the Layer D sherds possessed this finish.

SF2 is a cream slip, applied only to those vessels which were then to be decorated with zoned red paint. It is thin and subject to discoloring. Deep shell combing on this cream slip is sometimes observed; it seems to have been restricted to vessel interiors. Meggers, Evans and Estrada (1965: Plates 174-175) illustrate a similar technique from Valdivia. SF3 is an even, compact polished surface, buff to grey or black, which has been smudged. The degree of smudging, and hence the color, varies from sherd to sherd.

Form

Vessel forms of the La Montana complex are, for the most part, radically different from those of other known archeological periods in eastern Costa Rica. The most notable include flat griddles with raised lips (R1), curved and straight-sided bowls with lips expanded on the interior (R8), and tacomates (globular vessels with restricted or incurving rims). Of the last, there are several varieties: those with comma-shaped lips (R9), straight, unexpanded lips (R2, R17), and those

with lips expanded on the exterior (R11, R12). Ollas with a rim flared at 60-80° are also numerous; they are, in effect, collared tecomates. Of a total sample of 7570 La Montana complex sherds, 630 or 8.32% are rim sherds. The percentages in the seriation chart are calculated using the total number of rim sherds from Layer D, not the total sherd count.

Other than annular bases, vessel supports seem to be absent in Layer D. Cylindrical pottery drums of this period show a distinctive flared, solid base. The very few handles present are either simple solid tabs or tiny loops between the rim and vessel body. No definitely identified figurine fragments were found. Occasional basal or medial flanges presage form modes which would become more popular in later times.

Decoration

Decorative modes of the La Montana complex have much in common with those of other Middle Formative complexes in the Americas, especially northern South American pottery. The most diagnostic modes include: broad line round-bottomed grooving or incising (D10), geometric designs in fugitive red paint (D8) (probably applied after firing), excised and incised motifs filled with red pigment (D12), applique fillets and punctuation arranged in a drapery-like fashion around the vessel exterior (D5) (also characteristic of early Colombian ceramics from Puerto Hormiga and Barlovento), multiple point drag and jab (D14), cord stamping (D13), and zoned rocker stamping (ZIP vessel only).

Other decorative modes persist into later periods; these include: red paint (slip) and/or round-bottomed circumferential grooves on vessel lips (D19), incised lines in herringbone and hatched triangle motifs, nickling on lips or flanges, and applique pellets (DX1). The majority of decorative modes in the La Montana complex do not appear again in the eastern Costa Rican sequence.

Types and Groups

The following higher level classificatory units have been formulated for the La Montana ceramic complex, in order to facilitate comparison with established ceramic types from other regions.

La Montana Self-Slipped Group (TG1)

Paste - P1 Surface Finish - SF1

Form - A wide range of vessel forms is encompassed by this group. The most notable are the perfectly flat, raised rim griddle (budare) (R1), curved and straight walled bowls with the lip expanded on the interior side (R8), globular rimless jars or tecomates, with a comma-shaped lip profile (R9), unexpanded lip (R19) or with lip expanded on the exterior (R11, R12) and short collared ollas (R5). With the exception of what may be a fragmented hollow conical support (S8), no vessel supports are known for this group. Handles are extremely few, simple tabs (H1) and tiny loops (H2) at vessel collar being the only modes observed.

Decoration - Only plastic decorative techniques occur, such as broad (D37) and fine line (DX5) incising or grooving (D11), punctuation

applique fillets and pellets (D1, D2, D3, D5, D6, DXL), dentate stamping (D7), and cord marking (D13).

Remarks - Sherds of this group frequently have carbon deposits, suggesting culinary use. The broad line incising or grooving and punctation which commonly occur as decoration on La Montana Self-Slipped are found with greatest frequency in Early and Middle Formative sites to the south, such as Sarigua in Panama (Willey and McGimsey 1954), Barlovento in Colombia (Reichel-Dolmatoff 1955) and Valdivia in Ecuador (Meggers, Evans and Estrada 1965). The same techniques appear much less frequently in contemporary Formative sites in Mesoamerica (Ford 1968: 141).

The as yet undated type from Greater Nicoya, Schettl Incised, is very similar to La Montana Self-Slipped, to judge from the few sherds examined by the author. Although displaying other rim/vessel forms, it closely resembles the La Montana group in its distinctive vessel wall-vessel lip proportions and in the use of round-bottomed post-slip grooving as decoration (F.W. Lange, personal communication).

La Montana Fugitive Red on Cream Type (TG2)

Paste - P1

Surface Finish - SF2

Form - The majority of sherds of this type are from subglobular bowls, slightly incurving and thickened evenly toward the lip, which is usually squared off (R6). R11, R23 and R26 (tecomates with a lip expanded on the exterior, and a cylindrical vessel) were observed infrequently.

Decoration - Fugitive red paint (possibly applied after firing) was

applied to vessel lips (not corresponding to an angle of inflection), zoned by broad incised or grooved lines on the vessel exterior (D10), and occasionally used to make linear geometric patterns unaccompanied by incised lines (D8). The blunt lip of R6 was invariably corrugated by circumferential grooves (D19).

Remarks - The cream slip of this type seems to have been applied specifically as a background for the red painted decoration, as the latter never occurs on SF1. The broad line grooving done with a round-tipped stylus and the different hue of red paint used on this type set it apart from later Zoned Bichrome pottery (Rosales Zoned Engraved, the El Bosque complex, the Aguas Buenas complex) in the Costa Rican archeological sequences. F.W. Lange has encountered very similar sherds (although with non-fugitive red) in the lowest levels of the Vidor site in coastal Guanacaste, beneath Catalina phase types like Rosales and Zelaya.

Fugitive red paint also occurs in the Barlovento pottery (Reichel-Dolmatoff 1955), and generally similar zoned incised red ceramics are widespread during Early and Middle Formative times in Mesoamerica. At this point, however, it is profitless to speculate on the cultural dynamics which produced this ceramic similarity; probably, it is simply a case of widespread and long-lived craft technology.

Atlantic Red-Filled Black Group (TG3)

Paste - P2 (P1) Surface Finish - SF3

Form - Most sherds found are small decorated body fragments. R7 (an

outslanting thin-walled shape with a rectangular bead along the exterior lip) may well be an annular base. The only other forms known for this type at La Montana are fairly tall annular bases (SX3, SX4).

Decoration - Two heavily eroded sherds show rectangular or triangular gouged out areas in a panel delimited by circumferential grooves, much like sherds illustrated by Meggers, Evans and Estrada (1965: Plate 59e, h). The other decorated examples of this type are small body sherds with incised crisscrossed lines or concentric rectangles. The incisions conserve traces of red ochre, rubbed on in powder form after firing. Izumi and Sono (1963: 118-120, Plate 84) describe a similar technique used in decorating Kotosh ceramics, in use from 1800-900 BC. Coe and Flannery (1967: Fig. 8) also report red-filled excision/incision from a Middle Formative context.

Remarks - With the exception of the Chaparron complex, also of probable Middle Formative date, red-filled black pottery does not appear in subsequent archeological periods of the central Atlantic watershed.

Comparative Data: La Montana Ceramics

Interestingly, although perhaps not unexpectedly, the La Montana ceramic complex displays a combination of modes typical of Early and Middle Formative complexes in Mesoamerica and northern South America. Thus, while the tecomate or globular neckless jar, heavily represented at early ceramic sites throughout Mesoamerica, makes up over 40% of the rim forms recovered in the La Montana sample, the flat griddle or

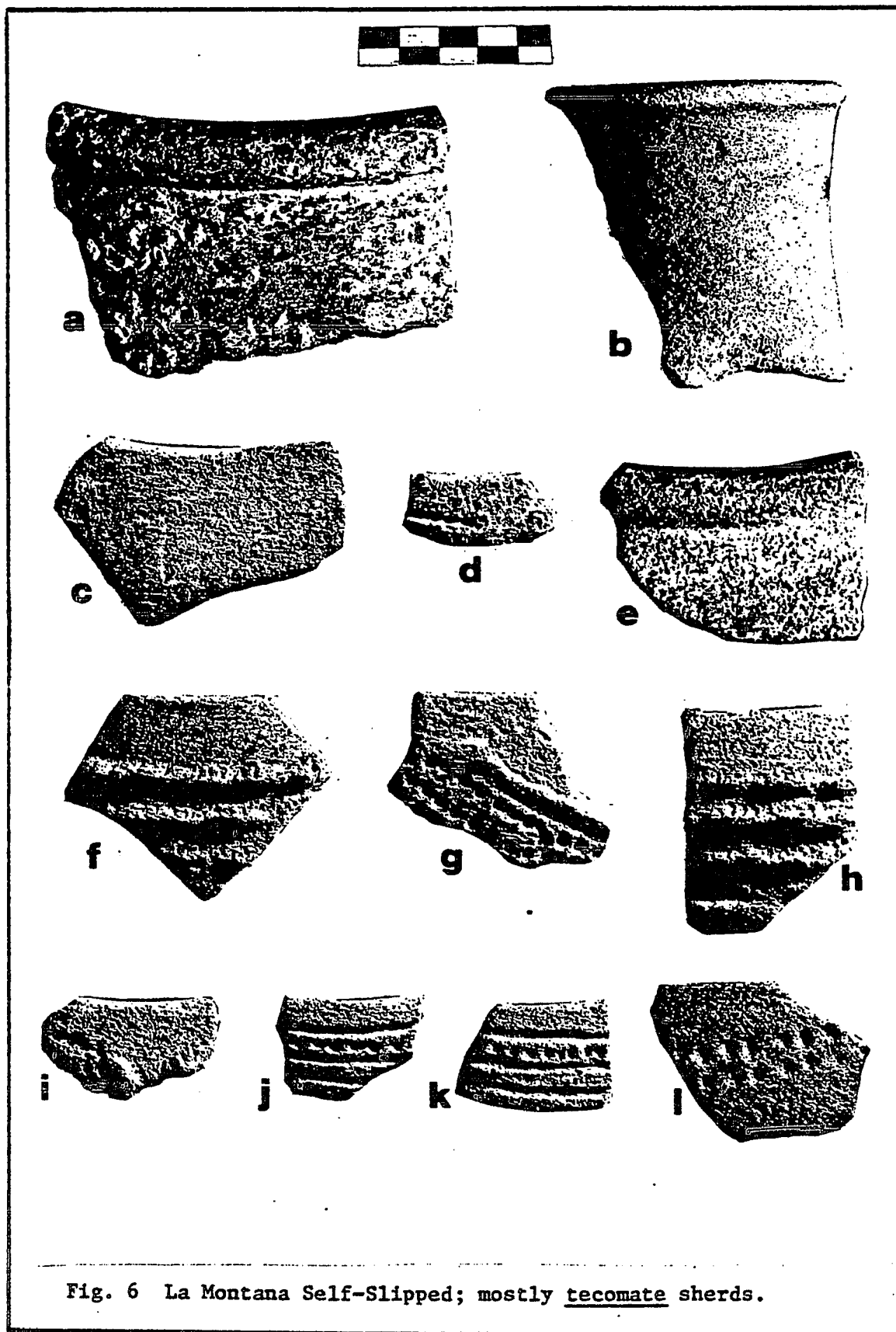
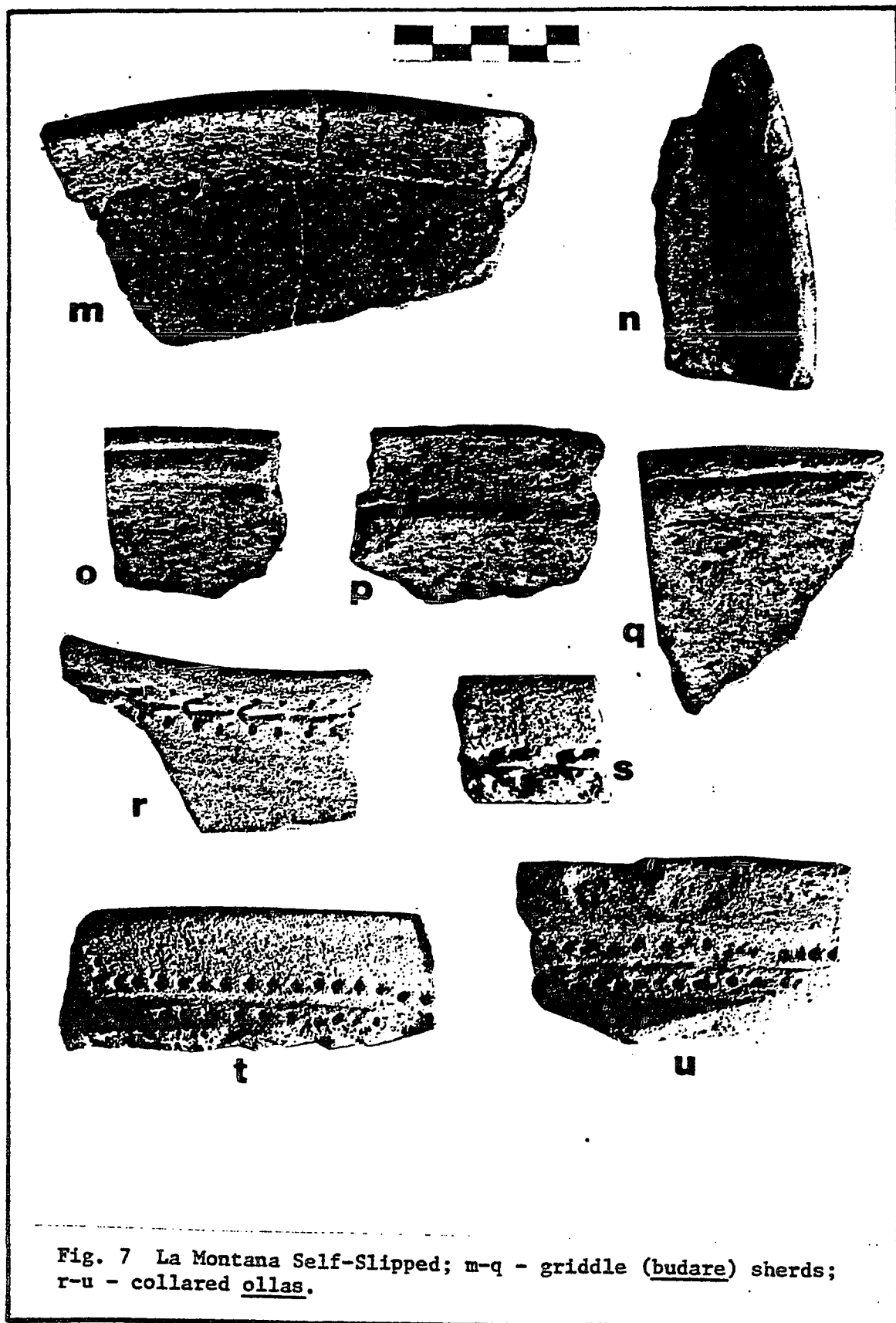


Fig. 6 La Montana Self-Slipped; mostly tecomate sherds.



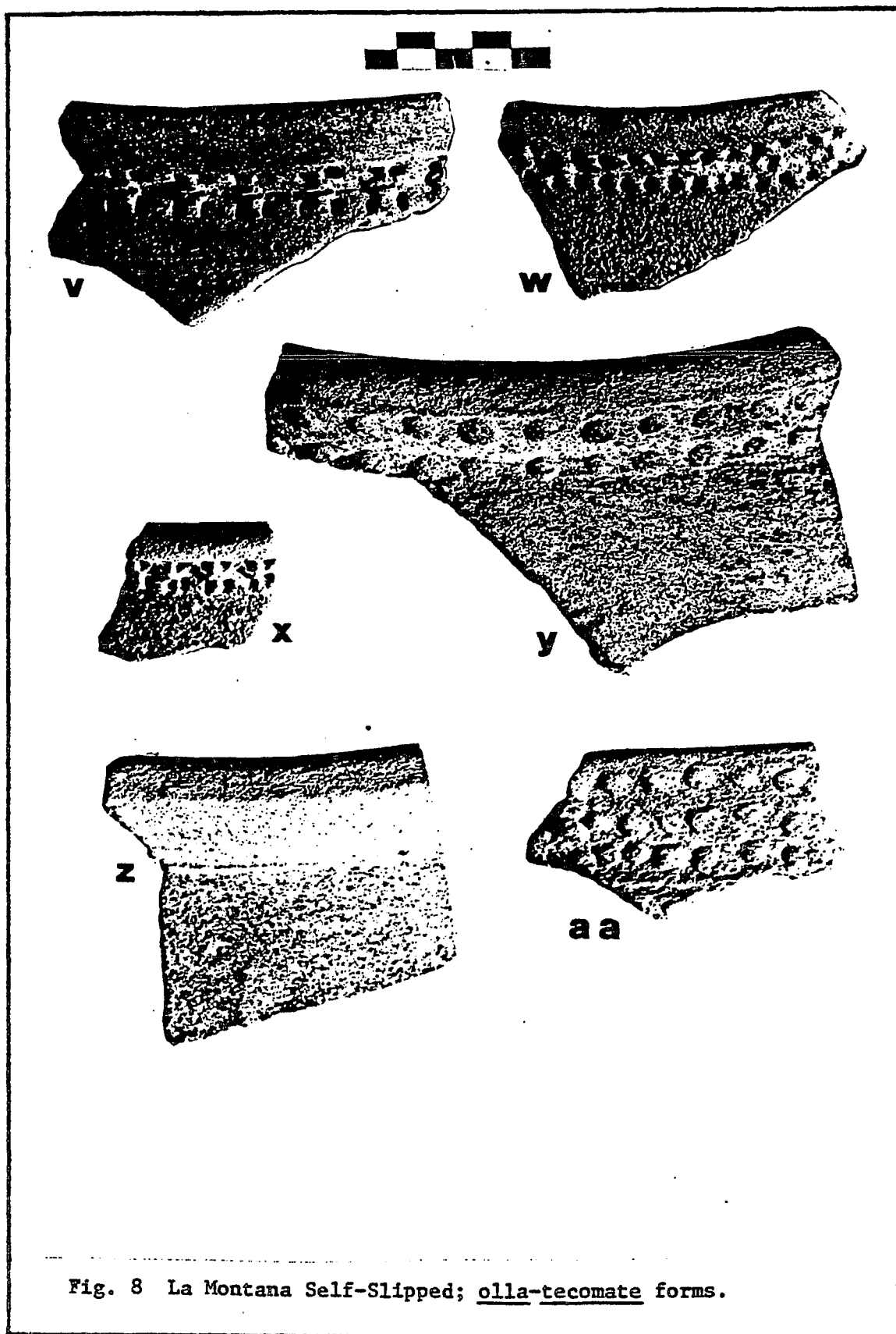


Fig. 8 La Montana Self-Slipped; olla-tecomate forms.

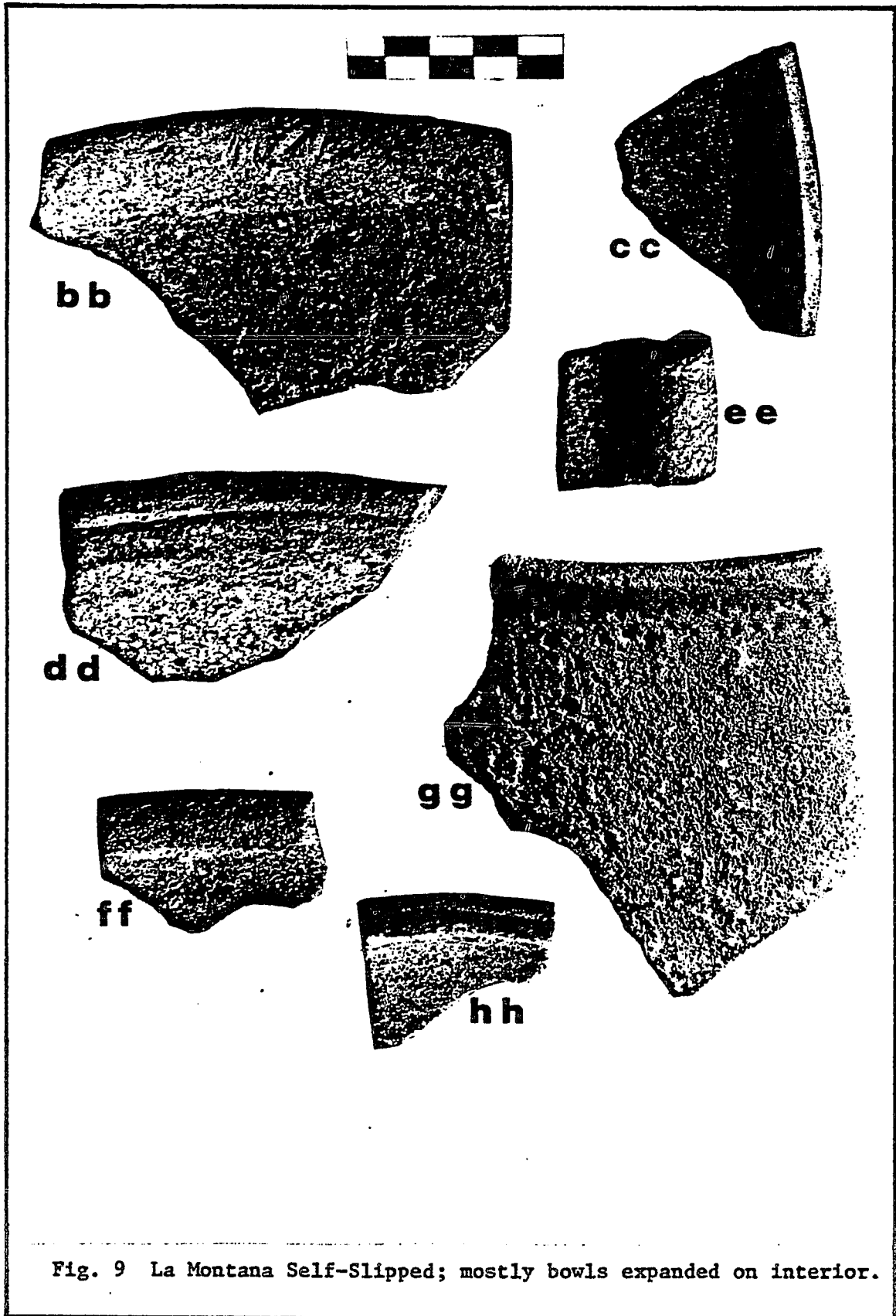


Fig. 9 La Montana Self-Slipped; mostly bowls expanded on interior.

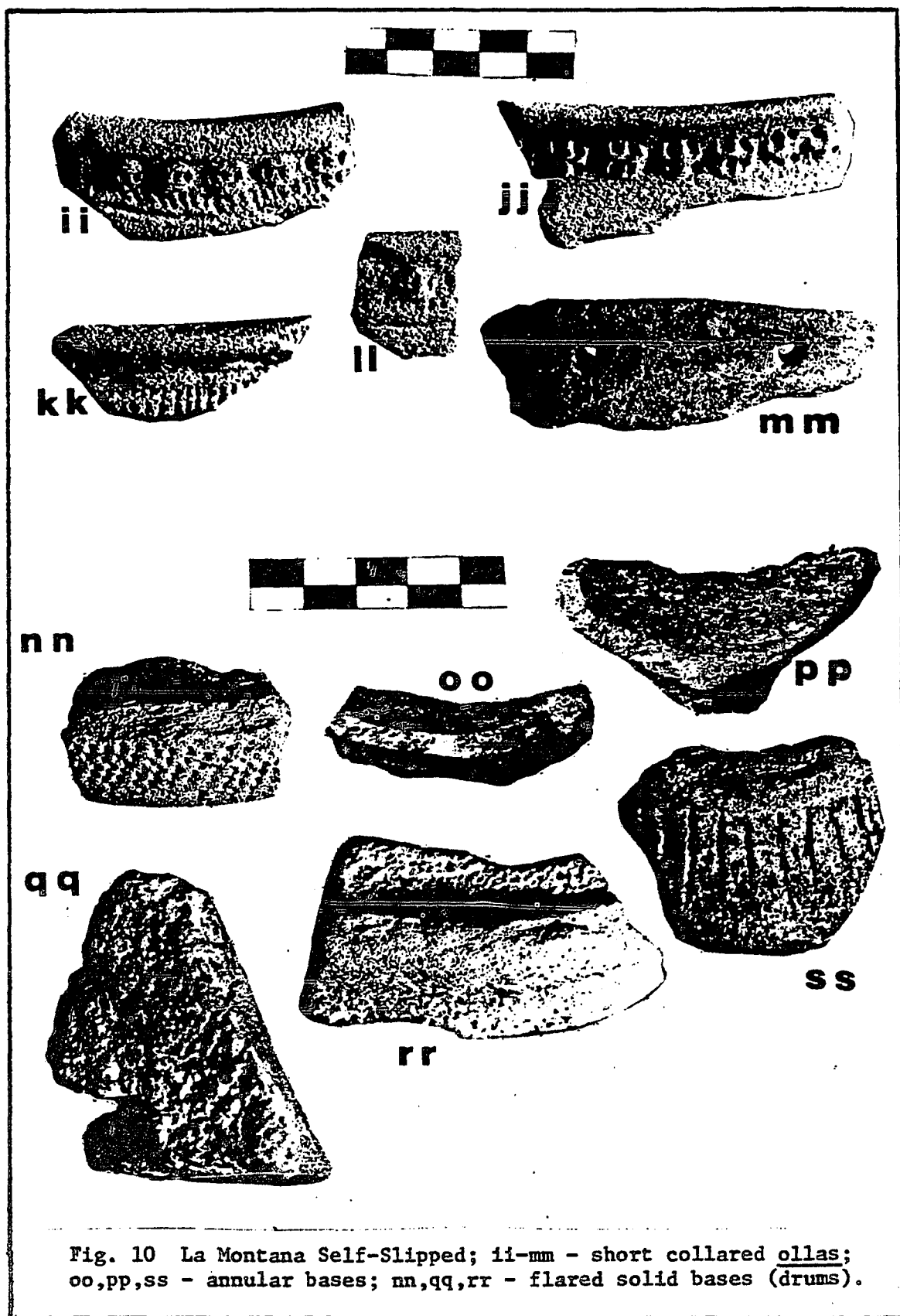


Fig. 10 La Montana Self-Slipped; ii-mm - short collared ollas; oo,pp,ss - annular bases; nn,qq,rr - flared solid bases (drums).

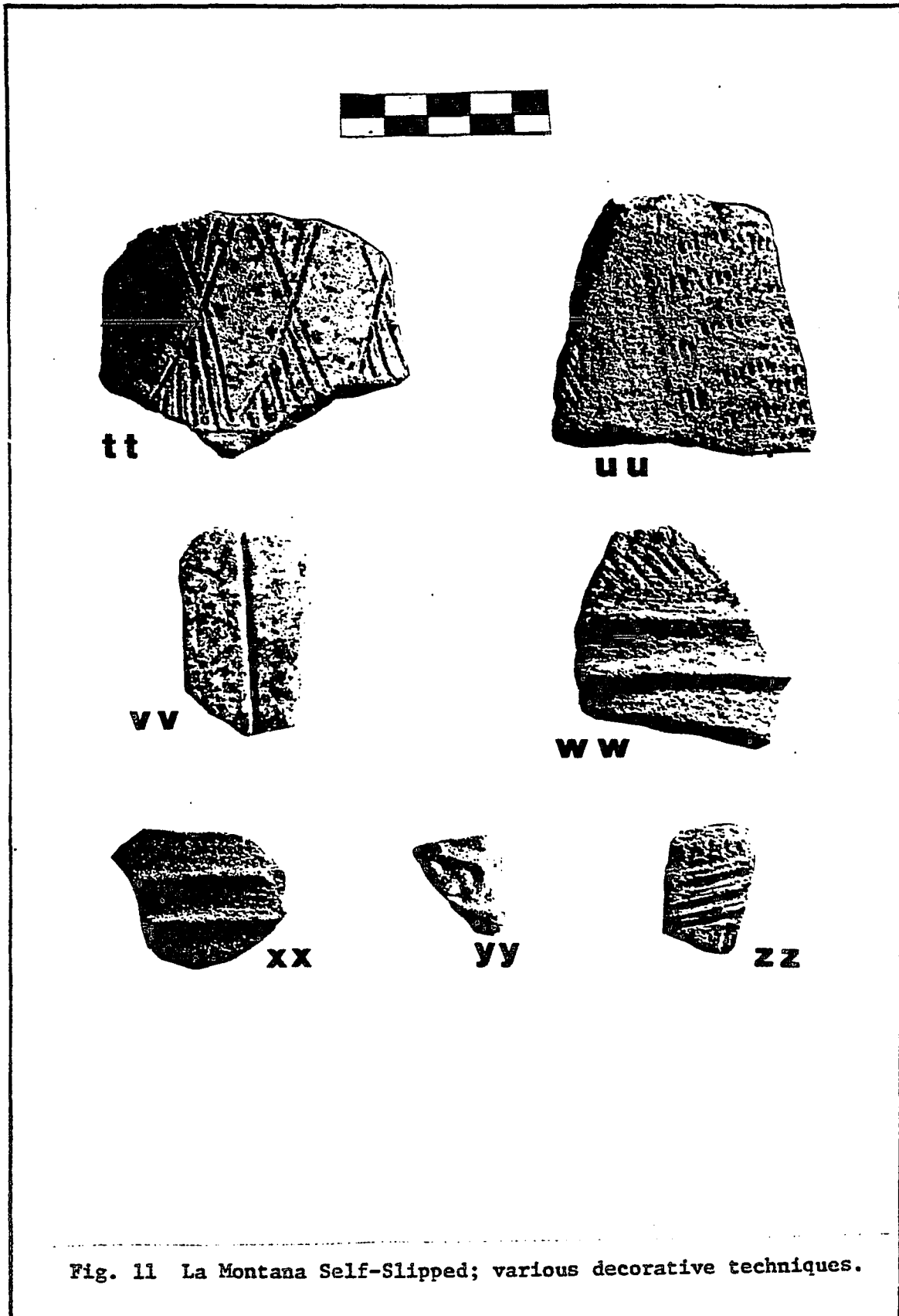


Fig. 11 La Montana Self-Slipped; various decorative techniques.

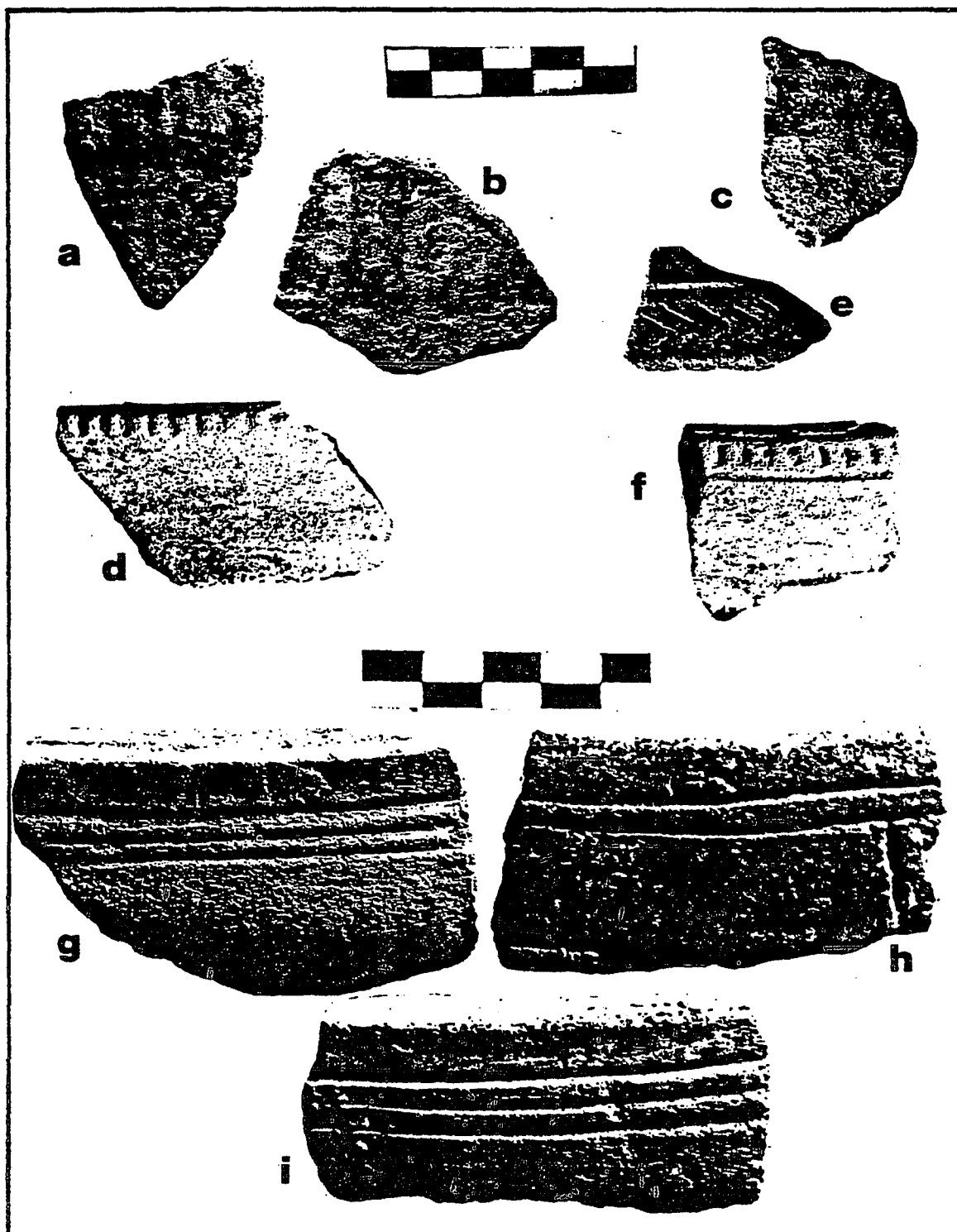


Fig. 12 La Montana Fugitive Red on Cream; a,b,c - painted motifs; e-i - zoned with round bottomed grooving.

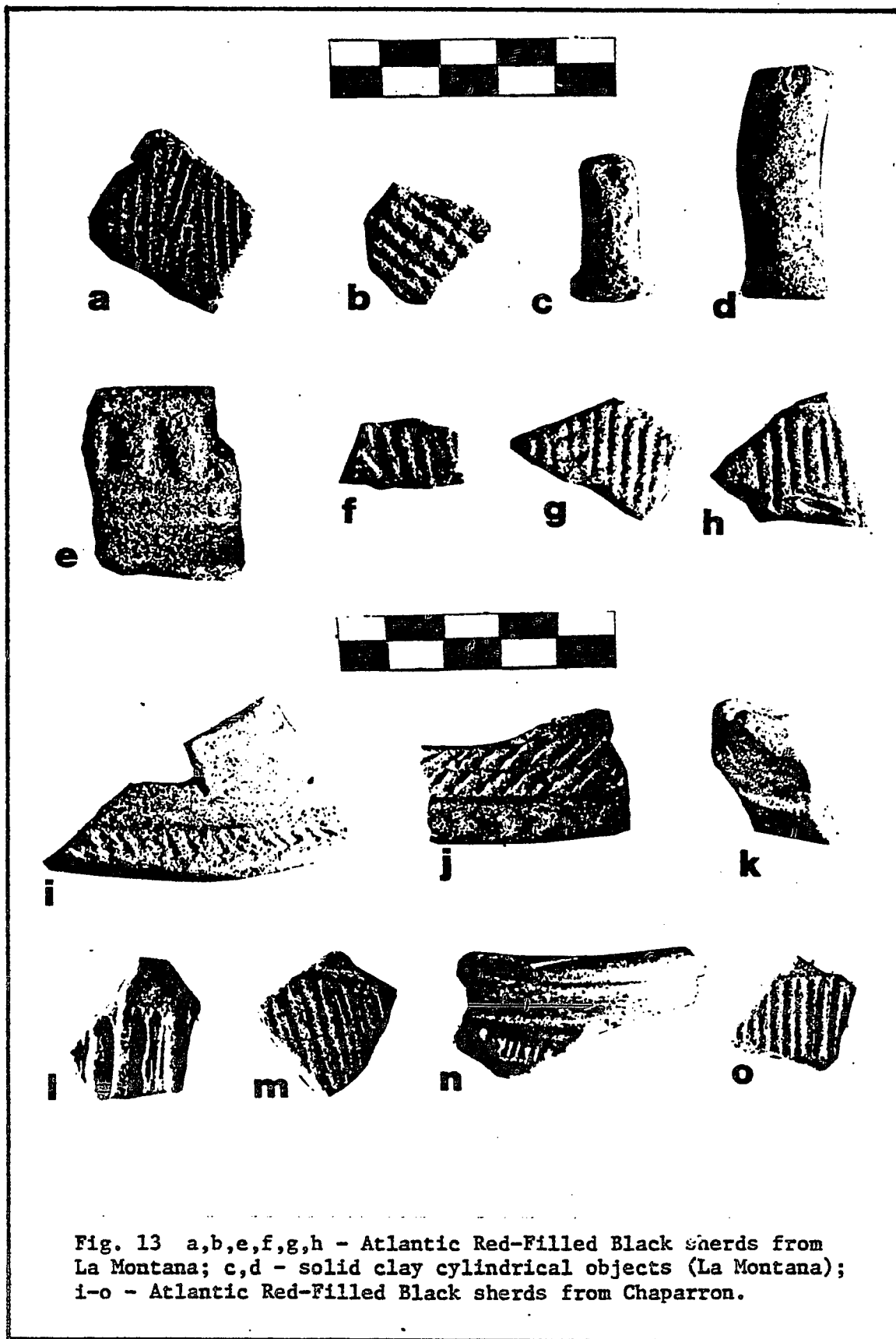


Fig. 13 a,b,e,f,g,h - Atlantic Red-Filled Black sherds from La Montana; c,d - solid clay cylindrical objects (La Montana); i-o - Atlantic Red-Filled Black sherds from Chaparron.

budare, supposedly attesting to manioc use in many Brazilian, Venezuelan and Colombian sites, is also present in notable quantity.

Tecomates

The Early or Middle Formative character of the La Montana complex is markedly emphasized by the frequency of the tecomate form, which Ford (1969: 92-95) has noted at many Mesoamerican sites from the Valley of Mexico to Guatemala. The "comma-shaped lip profile" mentioned by Ford as common in both Mesoamerica and Peru at that time, is present in the La Montana complex on 116 examples or 18.41% of all rim forms.

Tecomate rims which were not reinforced on the interior total 35 or 5.56% of all La Montana rims. Non-reinforced tecomates predominate in the Monagrillo phase (2500-1500 BC) in Panama (Willey and McGimsey 1954: 61), and at the contemporaneously occupied Barlovento site in Colombia (Reichel-Dolmatoff 1955).

If rim modes R2, R6, R9, R11, R12 and R19 are combined (R6 being an incurved bowl with a somewhat wider mouth and R11 and R12 tecomates reinforced on the exterior lip), a sum percentage of 45.55% is produced, nearly half of all rim forms in the La Montana complex. As the tecomate form makes only limited appearances in later periods, it may be considered as strongly diagnostic of the Middle Formative Period, especially in combination with early modes of paste (P1) and surface finish (SF1).

Griddles, Pans and Dishes

One of the most striking vessel forms in the La Montana ceramic

complex and one which would seem to reflect a northern South American subsistence pattern, is the flat-bottomed griddle with a raised edge, sometimes called a budare. Lathrap (1970: 48-57) and Reichel-Dolmatoff (1965b: 63-65), among others, have insisted that such griddles can be considered as indicative of bitter manioc preparation. Anna Roosevelt (personal communication) has recently excavated many griddle fragments from Early and Middle Formative sites in the Orinocco region of Venezuela, including one with what appears to be the residue of a burnt-on manioc cake. Similar sherds with carbon deposits occur in the La Montana complex, and the raised edge flat griddle is unique in the archeological sequence of the central Costa Rican Atlantic watershed. Interestingly, tiny, sharp chips of flint are also found in Layer D and may represent the only non-perishable remains of manioc graters, wooden tables inlaid with sharp stone chips.

Other rim/vessel forms found only in the La Montana and Chaparron complexes are flat-bottomed outslanting pans and outcurving deep dishes or bowls, both with lips built up on the interior side. These forms, like many of the griddles, often have a broad circumferential groove around the exterior lip. Roosevelt showed the author identical sherds from Venezuela. Although no basal angles from flat-bottomed pans are to be found in the La Montana sample, the number of flat body sherds is much greater than in later complexes; presumably these came from pans and griddles, since many outslanting rim sherds show absolutely no curvature in the body wall, as would be present in a bowl or dish. Ford (1969: 99-101) notes the flat-bottomed pan as common in Early Formative complexes throughout Nuclear America, with the exception of

Colombia and Ecuador.

Simple curved bowls and dishes are fairly common in La Montana pottery, as they are in Formative ceramic complexes in many parts of the Americas. The short-collared La Montana ollas are reflected in analagous forms from the Middle Formative central Panamanian sequence (Cooke 1976: Fig. 3); the corresponding deep punctation under the collar also appears on the Panamanian vessels.

Decoration

Broad line incising zoning red paint or slip is a common Early or Middle Formative decorative mode in many parts of Nuclear America, from Mexico (MacNeish, Peterson & Flannery 1970: 46-47) and Guatemala (Coe 1961: 75-76, Figs. 15-16) to Ecuador (Meggers, Evans & Estrada 1965: 128, Plate 145). It is much less common in Colombia and Venezuela.

La Montana pottery displays other decorative techniques which are most characteristic of ceramic complexes dating to the first and second millennia BC. The most notable of these are zoned rocker stamping, excising or crosshatching filled with red pigment and cord marking.

Ford's survey (1969: 128-131) indicates that rocker stamping, zoned or otherwise, is rare in Mesoamerica, increasing in popularity to the south. It should be noted that the one example of zoned rocker stamping for this period in central and eastern Costa Rica is the vessel from the ZIP site, where it is combined with broad line grooving and applique motifs. The La Montana ceramic sample yielded only one sherd with dentate rouletting; in that case, the tool had rounded teeth and

was picked up for every stroke, not rocked. A few other sherds show jabbing or drag and jab marks made with a three-pronged tool. It may be significant that all examples of dentate shell or comb stamping so far recovered have appeared on fragments of the tall, flat based cylindrical vessels (probably drums) like the one from ZIP.

The few examples of red pigment filled excision/incision in La Montana pottery occur on sherds incised in a mesh-like pattern which might be confused with stamping when heavily eroded. Ford (1969 : 131-133, 146) comments on similar techniques observed in several Early and Middle Formative sites.

A very unusual form of cord marking is present on three La Montana sherds. It is known only from the coastal Guatemala sequence, where Coe (1961: 58-59, Figs. 49-50) describes it as rocker cord stamping. It was apparently achieved by binding a small tool with twine and rocking or perhaps rouletting it over the damp clay surface.

Lithics of the Middle Formative Period (La Montana)

Like the ceramics, the lithic material from Layer D at La Montana is strikingly different when compared to other lithic assemblages in the eastern Costa Rican archeological sequence. In the discussion below, tools or tool fragments will be considered separately from residual artifacts such as flakes, cores and fire-cracked stone. Raw counts and percentages are given; tools or fragments thereof are compared with the total number of definite tool fragments, while classes of manufacturing or other debitage are compared against a separate

total. The first number in parentheses is the raw count and the second is the percentage. Fig. 19 shows counts of the tool and debitage classes by excavation unit (5 x 5 m square).

Cleavers (79) (54.86%)

This tool consists of a spall, commonly oval in shape and ranging from 15 x 7 cm to 25 x 11 cm, which has been detached from a water smoothed slate or volcanic cobble. It is usually retouched along the whole perimeter on both sides, although more and larger flakes are removed from the rough ventral side, apparently in an effort to thin the tool. On some examples retouch is minimal. Only ten of these tools were found unbroken; the lines of fracture on the rest of the fragments are almost always perpendicular to the long axis, suggesting that this tool, although thinned at the edges, was frequently used to strike a cutting blow. On the other hand, many of the fragments may have been produced by breakage in the manufacturing process.

These tools do not show the narrower waist of the similarly made double-bitted axes of later periods; it is probable, however, that they are the antecedents of such axes. The La Montana cleavers do not show signs of hafting, but their number and relative ease of manufacture suggest a common, everyday use.

Hammerstones (Pestles) (26) (18.05%)

This class of tools consists of ovoid or roughly cylindrical volcanic cobbles, unmodified except for pitting or battering at the

extremities, as might be caused by striking a blow. On several examples, there is a very faint suggestion of abrasion on the sides as well. Other examples show only the slightest wear and may not in fact be artifacts. Some of these tools may have been used in percussion flaking. They range from 12 to 20 cm in length.

Mullers (Manos) (14) (9.72%)

There are two kinds of mullers or manos found in Layer D: one is a small ovoid cobble, unmodified except by slight use polish, and the other is an oval cobble beveled or ground flat on one or more sides, apparently as a result of use. This would seem to imply a polishing or rubbing kind of manipulation, as opposed to the push-pull or rocking motion used with manos of later periods, which produced a round-edged, "bar of soap" shape. In contrast, the second kind of La Montana mano has precise, sharply beveled edges at the juncture between the working surface and the unmodified natural curvature of the cobble.

It is suggested that this form is related to a food processing activity that did not persist into later periods. Since we know that manioc cultivation was still practiced at the time of the Conquest, it was not the use of manioc per se; it may represent, however, a distinctive mode of preparing manioc. This interpretation is reinforced by the burnt food remnants adhering to fragments of the flat griddles (R1), which also disappear in later periods; nevertheless, it may only stand as a working hypothesis at present. These tools range from 12 to 22 cm in length and from 6 to 15 cm in width.

Small Backed Knives (14) (9.72%)

These are distinctive little tools, formed by striking a flake much thicker at one side than the other, then further flattening the dorsal, pressure-bearing side by snapping or retouch if necessary. The sharp cutting edge invariably shows intentional or use retouch, or both. It was probably grasped much as one grasps a pencil to write. The small size and acute edge angle suggest use on fairly soft materials. The knives range from 4 to 7 cm in length, and all but one are of flint.

Large Backed Knives (5) (3.47%)

These tools appear to be simply larger versions of the previous class, but they are almost always made of volcanic stone or slate. It is possible that they represent rejects or deviant pieces in the fabrication of the numerous cleavers. They are usually 10 to 15 cm long.

Side/End Scrapers (2) (1.38%)

Only two tools may be confidently identified as scrapers in the La Montana lithic sample; both are of flint and measure 5 x 4 cm and 4 x 3 cm respectively. The larger is a quasi-discoidal end/side scraper incorporating a marked ventral concavity in the original flake to exert more pressure along the working edge, which displays careful retouch and several resharpening scars. The ventral side of the tool is polished to a dull lustre from contact with the worked material, while the dorsal side is matte.

The smaller tool is a beaked end scraper, also with retouch and use scars. Whereas the working tip is hard flint, the butt of the tool is composed of the rough, porous silicon dioxide cortex of the original nodule, providing a firm grip.

Polished Celts (2) (1.38%)

These slate artifacts were roughed into shape by chipping and then polished, in one case incompletely. They are trapezoidal in outline and oval in cross section, with a slightly curved bit and a squared-off poll. The celts measure 7 x 5 cm and 7 x 3.5 cm respectively. Although originally dark grey in color, the slate has oxidized to a light green; this is also the case for other slate artifacts found at La Montana.

Ford (1969: 50-53) notes that such celts are typical of the Mesoamerican Early and Middle Formative, celts from Peru and Ecuador being thin and rectangular in cross section. Mesoamerican-type celts are also found in Colombia.

It may be significant that the best made celt from Layer D was found next to the small stone bowl described below, possibly indicating a burial or cache. No pit outline could be discerned.

Small Stone Tripod Vessel (1) (0.69%)

Unique in the La Montana sample, this tiny bowl was carved from porous volcanic rock. What appear to be a stylized head and tail occur at the opposite sides of the bowl. The tips of tripod supports formed by grinding into the block of stone at the bowl's base, have been broken

off. The vessel is the earliest known example of representational stone carving in Costa Rica. It was found in association with one of the polished slate celts described above, in what may have been a tomb or cache.

Flaked Petaloid Axe (1) (0.69%)

Made from a hard grey laminated stone (probably metamorphosed slate) which has oxidized to a light grey-buff, this tool was almost certainly broken during manufacture; the poll is missing, and although several thinning flakes have been removed, the axe is still too crude and thick to have been really functional. It is larger (7 x 7 cm) than the polished celts, but it is conceivable that, once roughed out, the axe was destined to be polished.

Slate/Volcanic Flakes (850) (66.20%)

This class is really a catch-all for non-flint debris. Their greater number indicates that such rocks were more easily obtained than flint and were used more often.

Flint Flakes (290) (22.58%)

In general, the flint (or chert) flakes from La Montana deposits are jagged and blocky, few if any being the products of pressure flaking. This accords with the irregular, step-fractured character of the flint cores. Nine flakes show obvious use retouch along one edge; all of these are over 2 cm in diameter.

Of interest here is the possibility of interpreting many of the flint flakes as evidence of manioc grater boards, such as are frequently found in ethnographic contexts in South America in conjunction with ceramic griddles much like the Layer D examples. A recent report by DeBoer (1975), however, tends to cast doubt on this hypothesis. He notes that actual grater chips (from the Amazonian Waiwai) are tiny, sharp fragments that never exceed 1 cm in diameter. Some supposed grater chips from an archeological context (Momil I) are shown to be five times that size on the average, as well as differing in shape.

Of the 290 flint flakes from La Montana, only 3 are 1 cm or less, 87 fall between 1-2 cm, and the rest are larger, some up to 5-6 cm at their greatest dimension. It can only be said then that either the La Montana people were not in fact grating manioc, or that the archeological grater boards used a different technology. In view of DeBoer's further doubts about the reliability of griddles (budares) as indicators of manioc processing, the question of manioc use at La Montana becomes even more problematical.

Fire-cracked or Charred Rock (55) (4.52%)

This class consists entirely of cobbles or other weathered volcanics.

Volcanic Cores and/or Blocks (43) (3.55%)

Although in a few cases, there seems to have been a deliberate effort to remove regular flakes, this artifact class probably contains

mostly stone broken incidentally during the course of other activities.

Flint Cores (23) (1.79%)

These cores are small, none exceeding 5-6 cm in diameter. Flakes have been struck off irregularly in many directions, with step and hinge fractures predominating. Only one small core (4 cm) tends toward a quasi-cylindrical shape. Discoidal, tabular and a very few spherical cores occur.

Slate Cores (20) (1.55%)

The slate cores tend to be larger than the flint examples, some reaching 10-12 cm over the longest axis. Two good examples of exhausted slate cores show a fat ovoid section, with many step and hinge fractures from flakes taken off in several directions. The raw material for these cores was located in the form of small water-rounded slate cobbles in nearby river beds.

Site Features: La Montana (18-LM-Layer D)

Although the entire excavation of Layer D at La Montana (approximately 13 x 22 m) was carried out by hand trowelling, no definite living features, such as hearths, pits or post holes, were observed. Two concentrations of sherds and lithic artifacts were mapped as possible living surfaces, but, in the final analysis, no real pattern can be discerned. As indicated previously, the lack of features may be due to the stripping of an unknown quantity of surface refuse when the

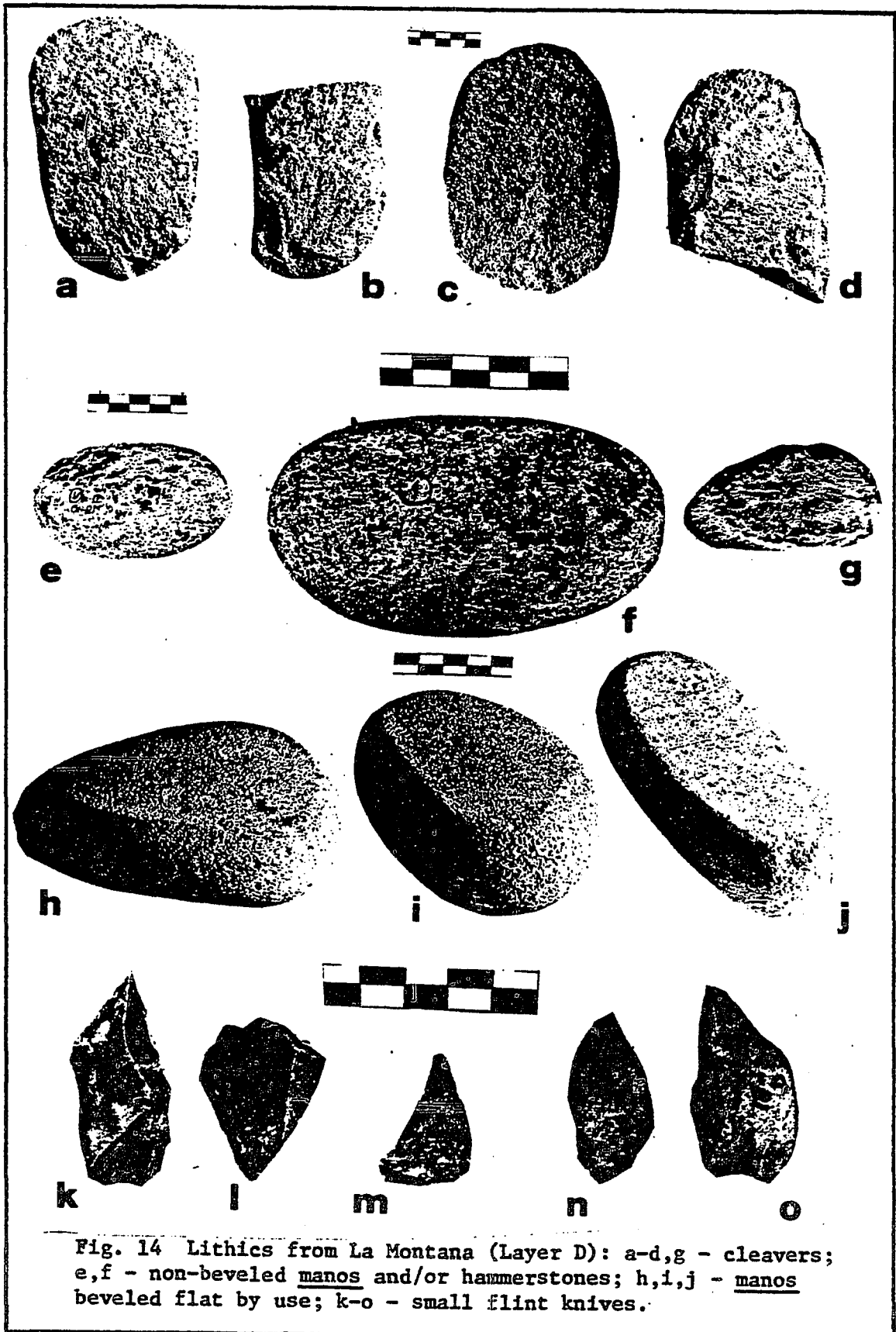
site was inundated during or after the early occupation. Almost certainly other crucial factors have been the extremely heavy rainfall, acid soil and subsurface disturbance by burrowing animals, all of which are gradually destroying even the ceramics at the site. Other, more ephemeral features must have been erased by now. Still, since the gross stratigraphy is very obvious, it seems especially odd not to have encountered pits, burials or the like, which would undoubtedly show up clearly in the much lighter subsoil below Layer D. It may be simply a case of excavator's luck, that is, coming down between zones or recognizable features.

An attempt was made to locate activity areas by charting the frequencies of burned as opposed to uncharred sherds (Fig. 18), and of all the lithic classes (Fig. 19), but even here, no real distributional significance is evident. The most suggestive association of artifacts is that of the small stone bowl and the polished slate celt; this may have been a tomb or cache, but no soil discoloration, pit outline or the like was evident.

Subsistence

Among the charcoal samples from Layer D were a very few which presented possibilities for botanical identification. These were examined by Dr. Richard I. Ford, Director of the Museum of Anthropology at the University of Michigan, who offered the following tentative identifications:

Sample 1 - fragments of a large seed with a minimum diameter of 23 mm; it may be a member of the genus Persea (avocado).



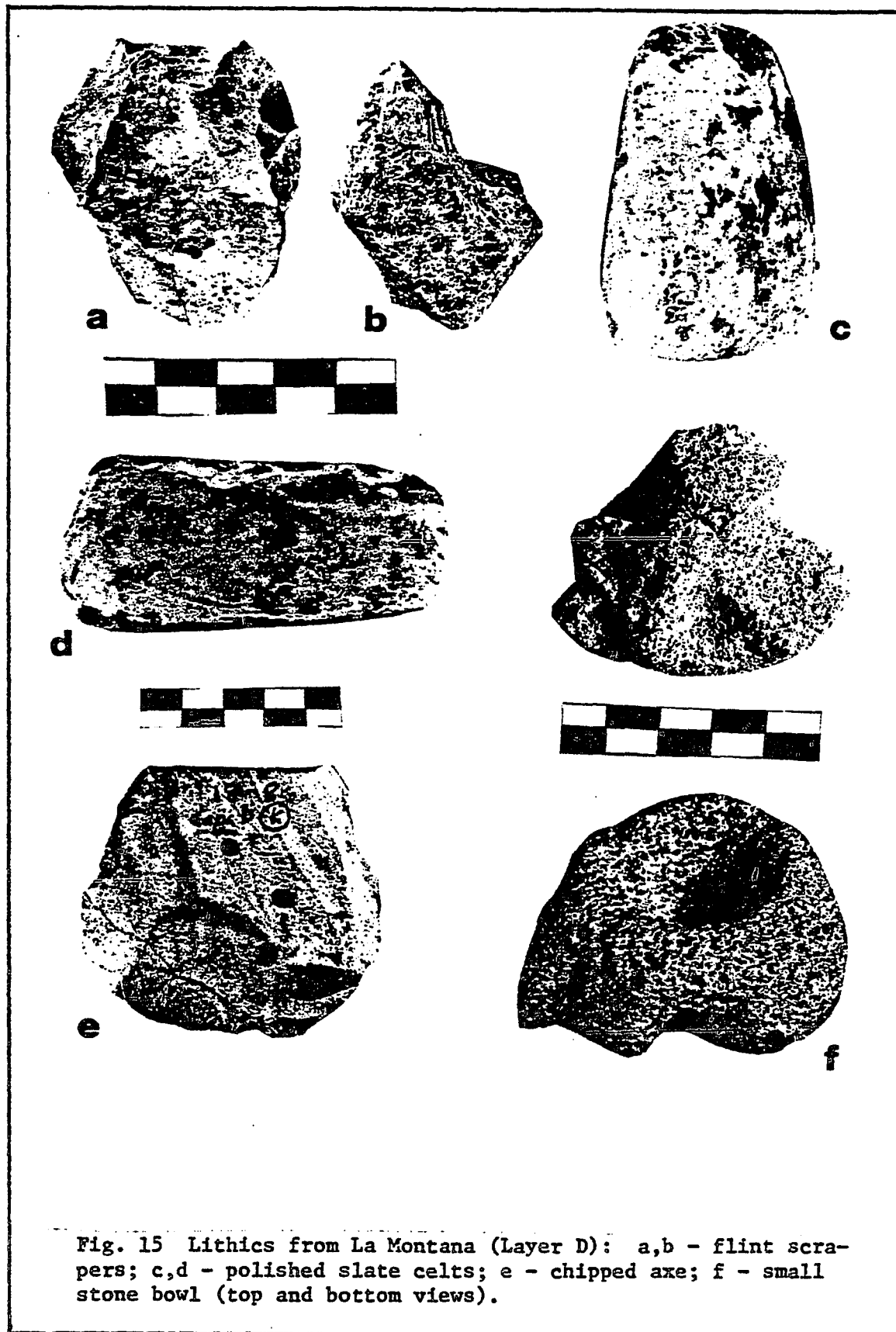


Fig. 15 Lithics from La Montana (Layer D): a,b - flint scrapers; c,d - polished slate celts; e - chipped axe; f - small stone bowl (top and bottom views).

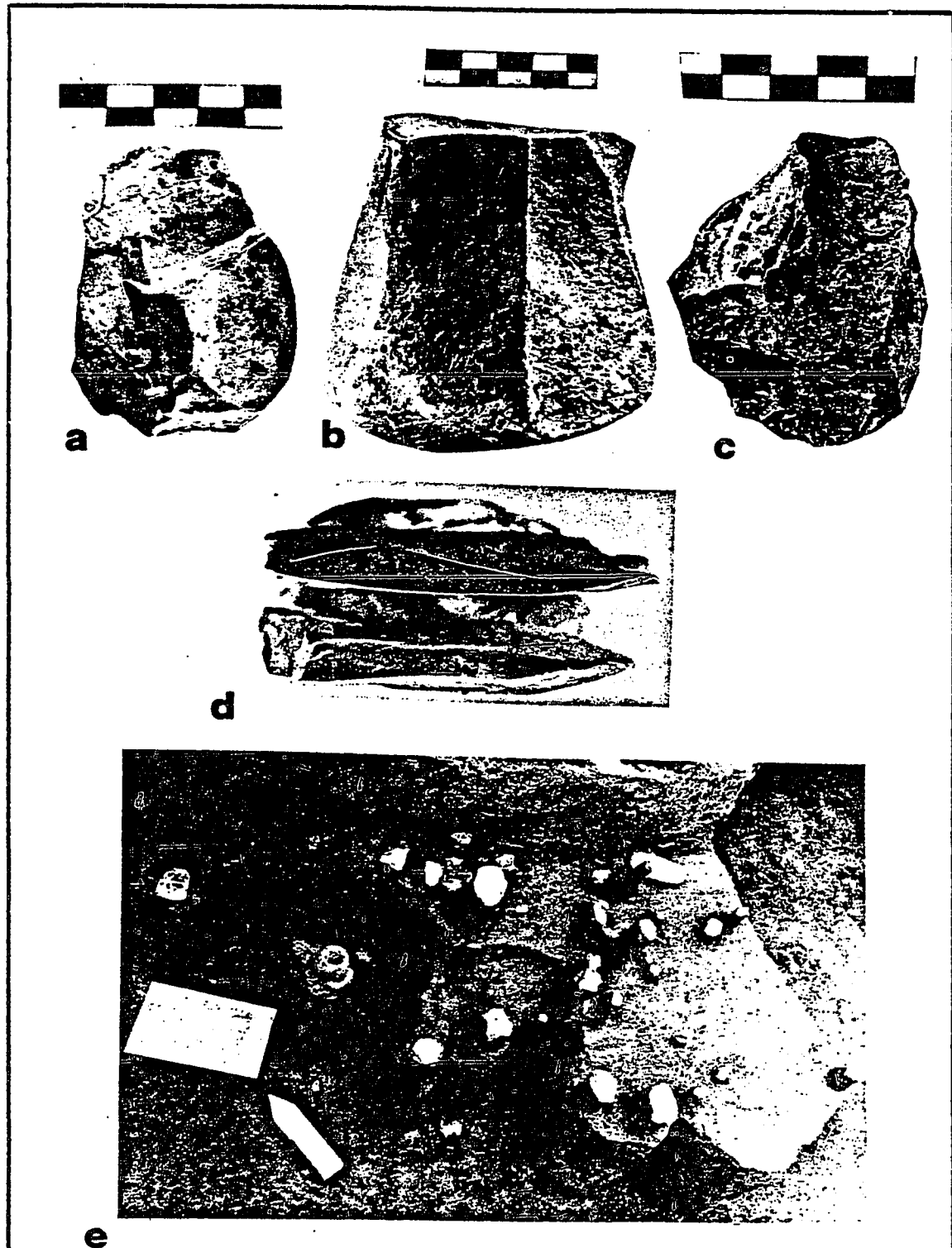
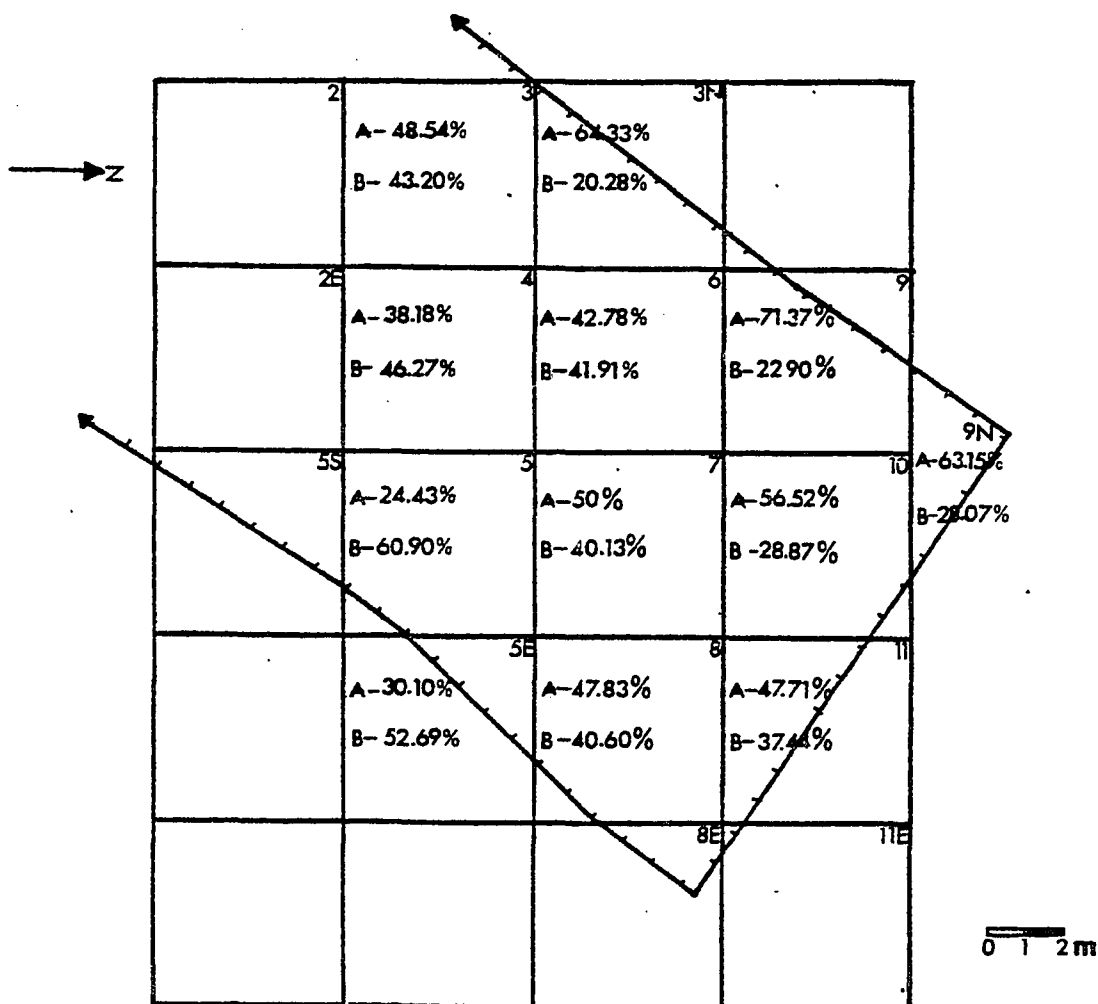


Fig. 16 Lithics from La Montana (Layer D): a,b - slate cores; c - flint core; d - view of two slate flakes, the upper from the Transitional cemetery and the lower from Layer D; note the difference in the thickness of the oxidation patinas; e - the possible cache containing the stone bowl and a slate celt.

La Montaña (18-LM) Layer D



- A Sherds without carbon deposits
- B Sherds with carbon deposits
- Excavation units
- +— Limits of excavation (approximate)

Fig. 17

La Montaña (18-LM) Layer D

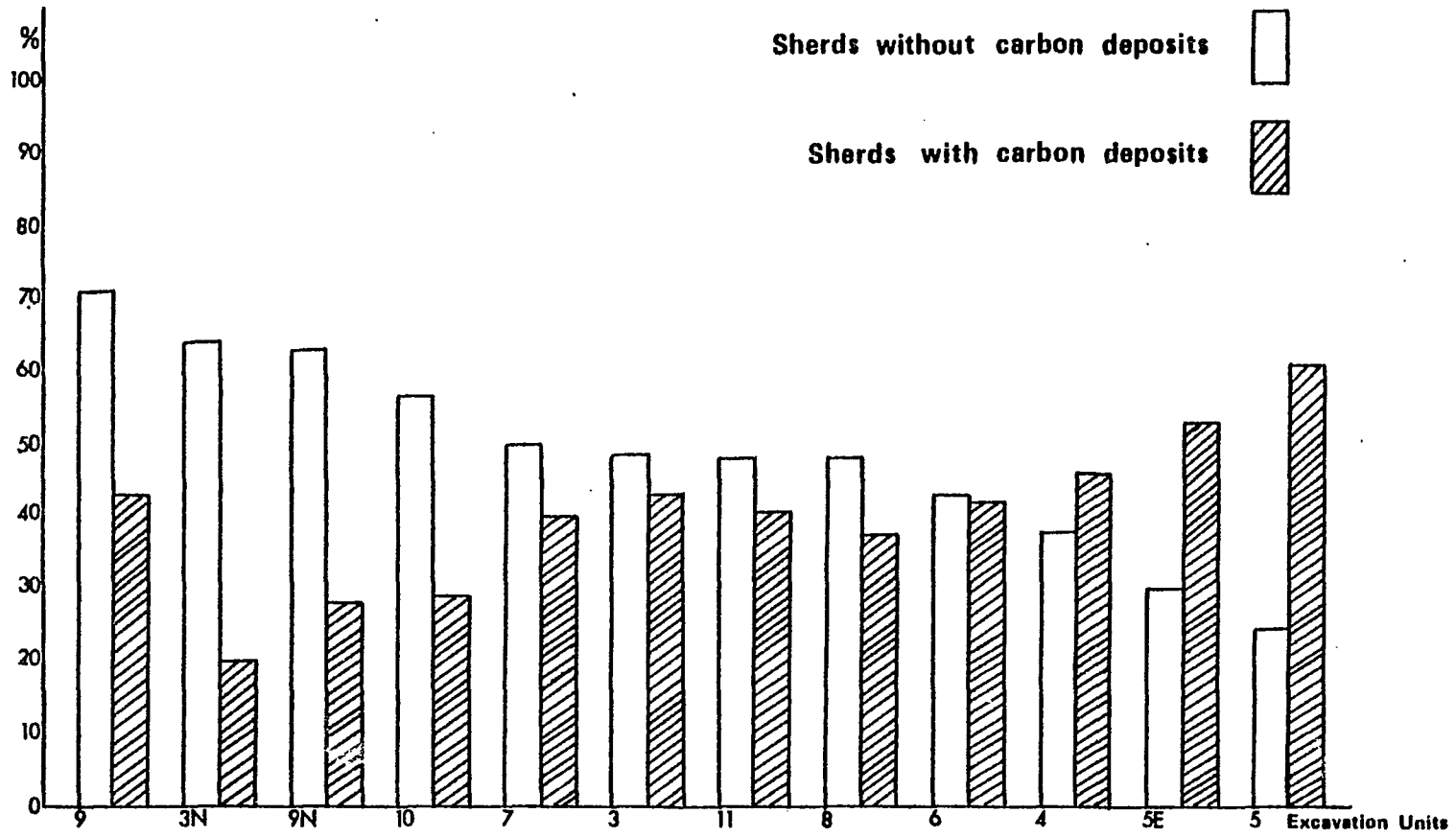


FIG. 18

Fig. 19	MIDDLE FORMATIVE LITHIC TOOL TYPES AND DEBITAGE 18- LA MONTAÑA (LAYER D)											
	EXCAVATION UNITS											Total
	2	3	3N	4	5	6	7	8	9	10	11	
Small Backed Knives		2				1	4	5	1		1	14
Large Backed Knives		1				1		1	1		1	5
Cleavers	4	17	2	2	3	10	17	10	4	5	7	81
Hammerstones (Pestles)		5		1	6	2	1	6	3	2		26
Ground Celts										1	1	2
Mullers (Manos)		2				5		3	3	1		14
Stone Vessel											1	1
Side/End Scrapers								2				2
Axe								1				1
Flint Flakes		40		9	4	54	59	46	24	27	16	279
Slate/Volcanic Flakes	6	123	1	39	29	137	136	136	108	77	58	850
Flint Blocks and Cores		3		4			3	5	3	2	3	23
Slate Blocks and Cores	3	7				2	2		3	1	2	20
Volcanic Cores and/or Blocks		3	2	1	6	6	12	5	2	2	4	43
Fire-Cracked Rocks	2	3	3	6	3	9	4	9	14	5		58
Total	15	206	8	62	51	227	238	229	166	123	94	1419

Sample 2 - charcoal in the form of a knot from one of the gymnosperms, a large class of seed plants having ovules borne on open scales, usually in cones, and usually lacking true vessels in the woody tissue; the class includes the pines, spruces, cedars, cycads, ephedras, and the ginkgo.

Sample 3 - this sample was made up of three separate entities, one of which was a fragment of a small animal bone; one of the remaining two was a piece of gymnosperm charcoal, and the other a diffuse, porous charcoal fragment, apparently dicotyledonous.

Coupled with the indirect evidence for manioc use (the griddles and less likely, the flint chips), the above identifications represent the total knowledge to date of Middle Formative subsistence practices.

Summary and Chronology

Ceramics and lithics from Layer D, an occupational component buried beneath a later Transitional Period cemetery at the site of La Montana in the Turrialba valley, have been dated to the period 1000-500 BC (Middle Formative) on the basis of stylistic associations and a series of five radiocarbon dates. La Montana pottery thus becomes the oldest presently known from Costa Rica, predating the ceramics of the Catalina phase (Baudez 1967) of the Zoned Bichrome Period in northwest Costa Rica by some 500 years.

La Montana ceramics are predominantly monochrome, with plastic

decoration in the form of broad line incising or grooving with a round-tipped stylus, conical punctuation, applique pellets and fillets and red pigment-filled excision/incision. A small number of sherds are cream slipped and decorated with zoned or linear patterns in fugitive red paint. These decorative modes, when combined with the flat raised-rim griddles (budares) found at La Montana, suggest participation in the ceramic traditions of northern South America. Nevertheless, the tecomate with a comma-shaped lip profile, more often found in Early and Middle Formative sites to the north, is an important mode in the La Montana ceramic sample. No red rimmed tecomates are present, however.

House forms and other settlement information for this period are still lacking, as are meaningful subsistence data in the form of carbonized plant remains. An unusual kind of mano associated with Layer D suggests that food processing techniques in this period were different from those of succeeding periods.

Radiocarbon Dates Associated with Layer D (La Montana Complex)

The first date in parentheses is based on the Libby half-life of 5568 years, while the second has been calibrated using the Suess curve to give calendar years.

1. 3465 ± 160 C14 years: (1515 BC) (2000 BC) UCLA 2113-A.

Dispersed charcoal fragments from excavation units 2, 3, 3N, and 4 in the 13 x 22 m excavation at La Montana. They were combined to produce a sample large enough to date.

2. 2500 \pm 60 C14 years: (550 BC) (575-775 BC) UCLA 2113-D.
Concentrated charcoal fragments from the top of Layer D in Sector 2 (not excavation unit 2) at La Montana. Sample taken in 1976.
3. 2500 \pm 60 C14 years: (550 BC) (575-775 BC) UCLA 2113-N.
Single large piece of charcoal taken from excavation unit 5 in the 13 x 22 m excavation at La Montana.
4. 2275 \pm 160 C14 years: (325 BC) (400 BC) UCLA 2113-B.
Dispersed charcoal fragments from excavation units 2, 3, and 3N in the 13 x 22 m excavation at La Montana. They were combined to produce a sample large enough to date.
5. 2230 \pm 60 C14 years: (280 BC) (400 BC) UCLA 2113-M.
Single large piece of charcoal taken from excavation unit 11 in the 13 x 22 m excavation at La Montana.
6. Unable to be dated; without radioactivity. UCLA 2113-0.
Single large piece of charcoal taken from excavation unit 4 in the 13 x 22 m excavation at La Montana.

The presence of charcoal without radioactivity in Layer D, probably indicating much older natural charcoal, casts doubt on the validity of the 3465 \pm 160 date, especially as it was done on a group of small charcoal bits collected over several square meters. On the other hand, the presence of the later overlying cemetery and of numerous gopher tunnels at the site present a problem of contamination with more recent charcoal. These tunnels can usually be detected, however, and samples near them were never used. At present, the evidence points to the older

date as the erroneous one; dates from the Transitional cemetery were 500 to 1000 years more recent than those from Layer D.

* * * *

Sites and Setting: Chaparron Ceramic Complex

The site of Claudio Salazar (36-CS) in Chaparron is named after its owner, and is located some 75 km almost directly north of San Jose. Although Chaparron appears on local maps as a small town, it is really just a term of reference for the locality, as there is no church, school, or nucleus of commercial activity. The nearest small villages are Vera Cruz and Pital, 10 and 20 km to the south respectively. The word chaparrón in Spanish means thunderstorm or squall; these are frequent in the vicinity due to a line of calcareous bluffs (Cerros Chaparrón) which rise to more than 300 m directly behind the site and intercept the easterly trade winds sweeping in from the Caribbean, causing local turbulence. The 36-CS site is located on a flat riverine flood plain, 50-70 m above sea level, which varies between 500 and 1800 m in width as it runs along between the bluffs and the Toro river whose source is near the Poas volcano. The climate of the zone is basically the same as that of the Linea Vieja sites near Guacimo and Guapiles; all are located in the Caribbean lowlands.

Excavations and Stratigraphy

The 36-CS site was one of many discovered during the 1977 survey of the San Carlos sub-region. Attention was drawn initially by a small scatter of flat, water-worn cobbles in a plowed field. A 5 x 5 m test

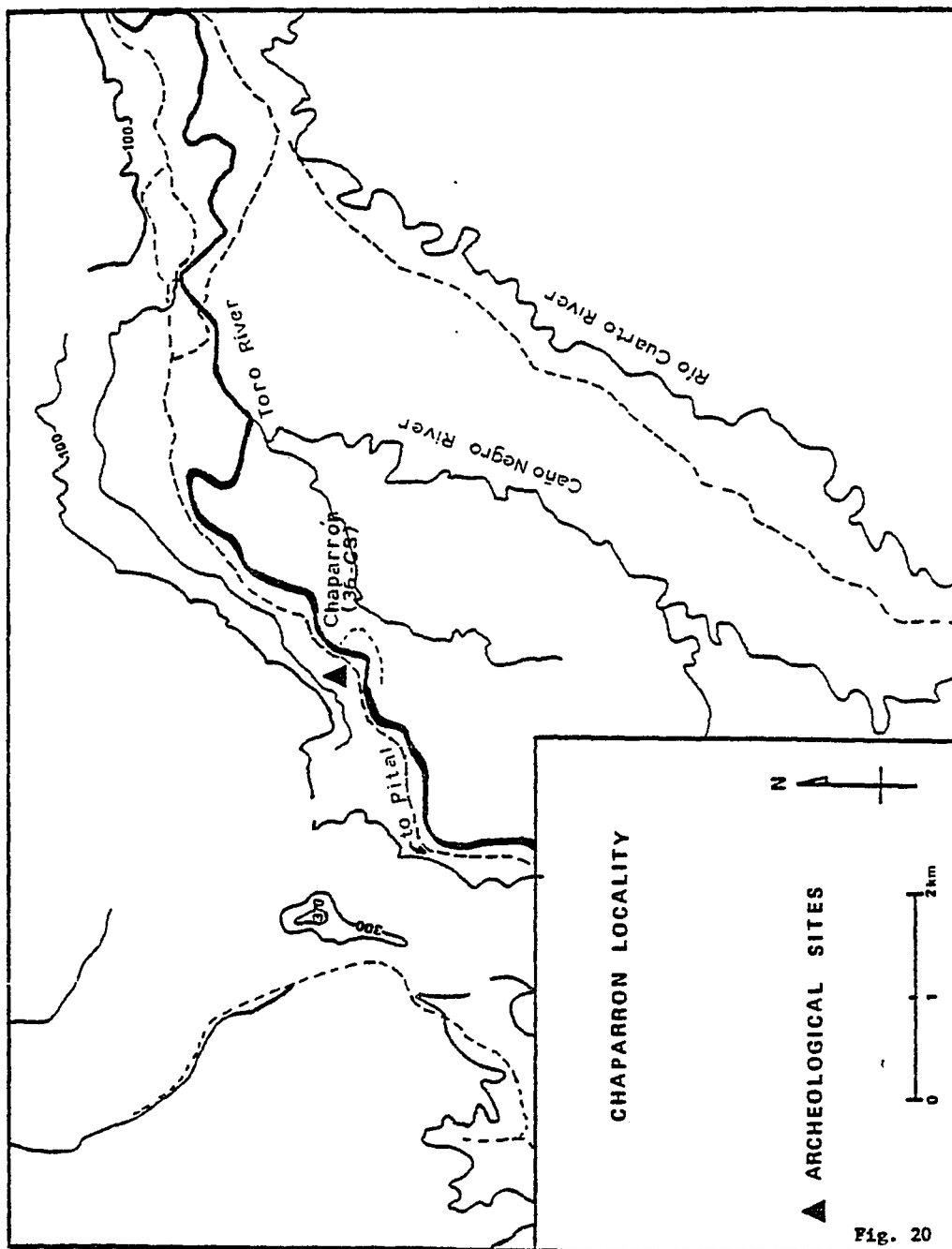


Fig. 20

excavation confirmed our preliminary hypothesis of a late (AD 1200 - 1400) cemetery composed of stone cist tombs. The cemetery contained, in addition to typical Atlantic watershed-style ceramic offerings, many sherds of the late varieties of Mora, Papagayo, Mombacho and other well known types of the Middle and Late Polychrome Periods of northwest Costa Rica. Small, heavily oxidized pendants of copper and tumbaga, a gold-copper alloy were also found.

Of greater interest, however, were sherds in the cemetery fill which were strikingly different than the obviously late ceramics associated with the tombs themselves. These sherds were almost all from large tecomates with a comma-shaped lip profile. Decoration was typically zoned red slip, described by circumferential broad incised lines; shell stamping, cord marking and drag and jab punctation were also observed. As several rim forms appeared which had previously been found only in Layer D of the La Montana site in Turrialba, it was decided that special attention should be paid to the collection of as large a sherd sample as possible. To this end, all pottery from the cemetery fill was saved as the excavation progressed; the broad line incised and zoned sherds were later easily separated from the very different Stone Cist Period pottery. Additionally, a series of ten 1 x 2 m stratigraphic test pits were put in adjacent to and up to 100 m away from the cemetery, which covered only a 30 x 25 m area. The purpose of these pits was threefold: (1) to ascertain the sector of the site with the greatest concentration of the early, potentially Middle Formative material, (2) to obtain a stratigraphic relationship between it and the pottery of the Stone Cist Period, and (3) to broaden the

sample in general. A surface collection of the plowed field in 50 m squares was also carried out.

The pits were dug in arbitrary 20 cm levels; no stratification was observed beyond the usual natural soil horizons. Although a perfunctory stratigraphy was obtained in several pits, the yield of sherds per pit was very low and none of the totals was especially significant statistically. Pits near to the cemetery often contained late sherds at the bottom (undoubtedly a result of the original cemetery construction), while pits away from the cemetery sometimes contained no late sherds at all. The late occupational component was apparently some distance away from the cemetery, as we did not find evidence of it. A few pits showed a mixture of early and late sherds in the upper levels, but only broad line zoned pottery below a depth of 1 m. Nearer to the river, the uppermost levels contained virtually sterile river sands, with cultural materials appearing at about 50 cm.

The test pits indicated that the greatest concentration of Middle Formative style sherds was in a band some 30 m to the southeast of the cemetery, or 75 m from the bank of the Toro river. In this zone two 5 x 5 m pits were excavated stratigraphically in February 1978. They produced a good sherd sample, several charcoal fragments (which have not yet been dated) and a fairly good cultural stratigraphy. In one of them, a large (160 kg) flat stone showing heavy abrasion from grinding was found at a depth of 150 cm associated with only early sherds. The chance that such a heavy object would have been redeposited is slight, and suggests that a Middle Formative occupational component is buried at the site.

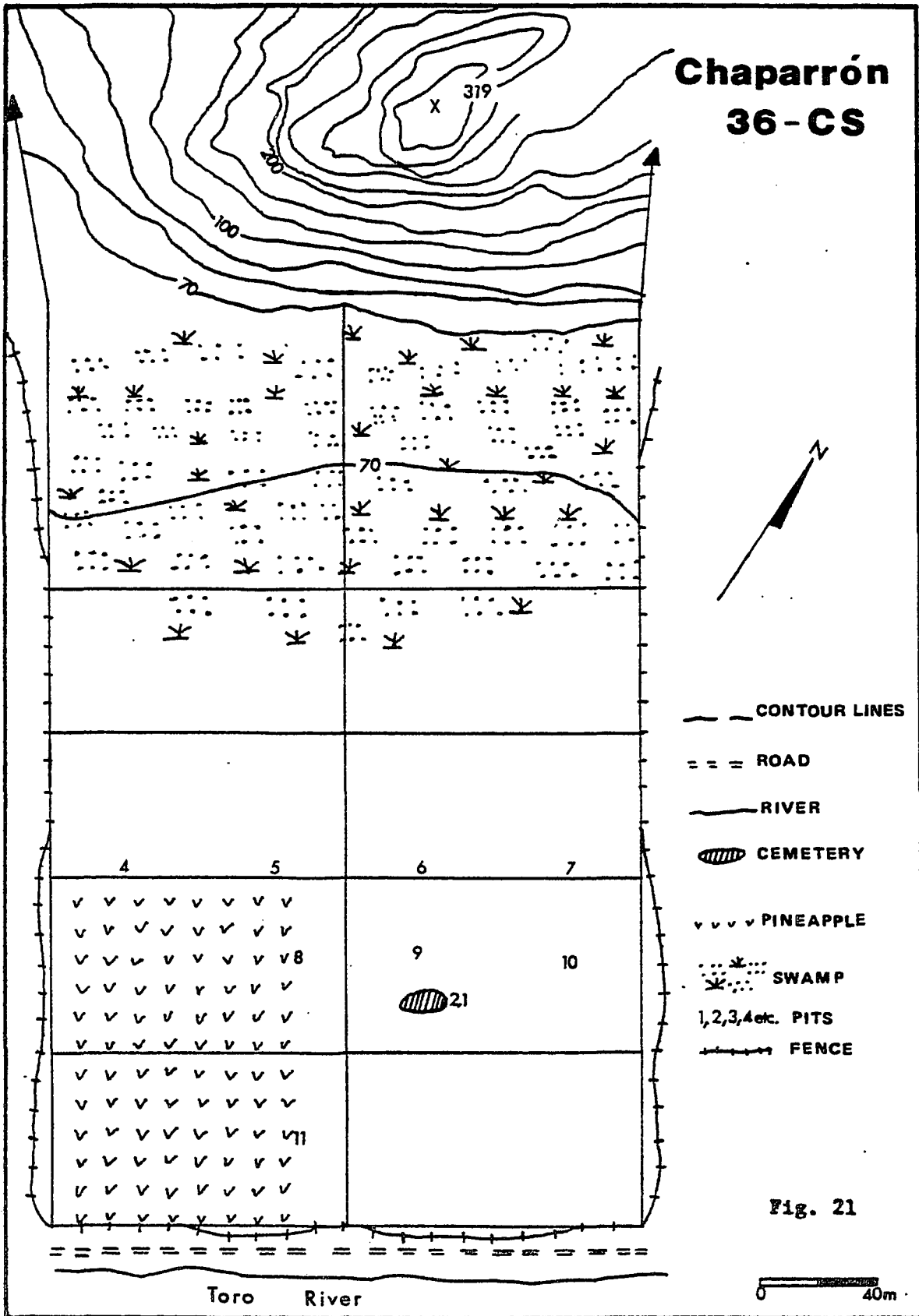


Fig. 21

In spite of the as yet weak stratigraphic evidence and the lack of radiocarbon dates, I believe that what is here called the Chaparron ceramic complex can be safely placed considerably earlier than previously known Costa Rican ceramics, and that it probably approaches the La Montana complex in antiquity. The seriation of ceramic modes supports this hypothesis; La Montana and Chaparron form a cluster isolated from the rest of the sequence. Some reasons for placing the Chaparron complex slightly later in time will be set forth below.

Diagnostic Ceramic Modes and Types of the Chaparron Complex

While considerably different in stylistic terms, the Chaparron complex shares important modes of paste and rim/vessel form with La Montana. At least one ceramic type appears in both complexes, suggesting some chronological overlap.

Paste

Significantly, the predominant paste in Chaparron pottery is identical to that of the La Montana complex, consisting of a fairly coarse buff or brown matrix with evenly dispersed light grey particles up to 1 mm in diameter (P1). As has been mentioned, this paste has only been observed in pottery of a probable Middle Formative (1000-500 BC) date in eastern Costa Rica, and does not appear later in the archeological sequence. A minor number of Chaparron sherds possess P2, a finer, sandy paste.

Surface Finish

The great majority of Chaparron sherds exhibit SF4, an evenly polished dark red slip zoned over a self-slipped or floated surface which, according to firing conditions, took on a color ranging from buff to chocolate brown or grey. The latter surface was also polished and almost always shows broad, lustrous striations left by the polishing tool. The red slip seems to have been confined to the lips and shoulders of Chaparron vessels; it was applied before firing and is not fugitive like the red of SF2. A small number of sherds show SF3, complete or partial smudging. One sherd has the cream slip of SF2, but non-fugitive red paint.

Form

The pottery of the Chaparron complex shares many rim and vessel forms with the La Montana complex, although in varying proportions. Of a total of 488 Chaparron sherds collected during 1977, 132 or 27.05% were rim sherds; only the 1977 sample has been quantified here. The percentages given below are in relation to the total number of rim sherds only.

The Middle Formative sherd sample from Chaparron includes small amounts of olla fragments (R5, R37) and simple bowls with expanded lips (R6, R8). Most rims, however, are from tecomate-type vessels, either with comma-shaped rim profiles (R9, R10) or with lips thickly expanded on the exterior and squared (R11). Of the 132 rim sherds found, these three tecomate forms accounted for 113 or 85.61%.

As in the La Montana complex, the predominant base or support mode in Chaparron ceramics is the tall annular or pedestal base (SX3, SX4). Only three examples were found; one of them originally was classified as rim/vessel form R7; closer examination showed that it and similar R7 forms in the La Montana complex were really tall annular bases. No other forms of supports or handles were found in the Chaparron sample.

Decoration

Decorative modes of the Chaparron complex are, in some ways, similar to those of the La Montana complex, although several new modes are introduced. In general, the decorative idiom of Chaparron seems to be more akin to that of Early and Middle Formative sites in Guatemala and southern Mexico than to northern South American ceramic complexes. Like those of form, the decorative modes of Chaparron and La Montana make up a cluster which differs significantly from later ceramic complexes in the central Atlantic watershed.

Virtually all of the decorated sherds in the Chaparron complex possess zones of red polished slip outlined by post-slip round bottomed grooving (D15) or broad line incising (D37). In addition, many sherds display other modes of plastic decoration in an unslipped band around the vessel collar. These include cord marking (D13), drag and jab, executed with a multi-pointed tool (D14), fingernail stamping (D16), oblique punctation with a conical or round-ended tool, sometimes called "pinched" (D17), and wavy shell-edge stamping, in which the tool was picked up after every stroke (D18). A few sherds show excised or

crosshatched-incised motifs filled with red ochre after firing (D12). Parallel grooves surrounding conical punctuation (D6), post-slip grooves around vessel lip (D19), reed stamping (D34) and tool impressed triangles (D21) appear on only one or two sherds.

Types

The following ceramic types have been formulated for comparative purposes:

Atlantic Red-Filled Black (TG3)

Paste - P1 (P2) Surface Finish - SF3

Form - Whereas the La Montana ceramic sample did not yield a single rim sherd of this type, three were found at Chaparron. All were open, rolled rim bowls (R37), probably with pedestal bases (SX3, SX4). As at La Montana, this kind of base only occurred in Atlantic Red-Filled Black; one example from Chaparron was decorated with roller cord marking (D13) and rectangular or diamond-shaped cut out areas.

Decoration - While the technique of rubbing red ochre into cross-hatched incised lines appears at Chaparron in much the same style as was observed at La Montana, the Chaparron sample also includes sherds which were excised in a freer form; one motif is composed of curved line and triangles (Fig.13n).

Remarks - This type appears both at La Montana and Chaparron. It is a rare type in both complexes (only 14 sherds at Chaparron, not all of which were decorated). Its presence can be correlated with the

appearance of similar pottery (Morena Black) in the Cuadros, Jocotal and Conchas phases of the coastal Guatemalan sequence (Coe and Flannery 1967: Fig. 8, 24-25). The smudged black or grey color was applied in an erratic, spotty fashion, perhaps on purpose; sometimes the pedestal bases are mostly buff or light brown, the natural color of the paste. Red ochre rubbed into excised designs does not occur in later ceramic complexes in eastern Costa Rica.

Chaparron Zoned Red on Brown (TG4)

Paste - P1 Surface Finish - SF4

Form - This type displays several modes of rim/vessel form, but by far the most predominant is the tecomate, in three varieties (R9, R10, R11), which total 113 rim sherds or 85.61% of all Chaparron rim forms. Other vessel forms represented include outcurving bowls or collared ollas (R5), simple, slightly constricted bowls with blunt, thickened lips (R6) and open bowls heavily expanded on the interior lip (R8).

Decoration - Polished red slip zoned by broad incised or grooved lines (D15) is the mode of decoration encountered with greatest frequency in this type, usually combined with a second mode of plastic decoration placed in an unslipped band on the vessel collar. These modes include roller cord marking (D13), drag and jab (multiple pointed tool) (D14), fingernail stamping (D16), zoned oblique punctuation, sometimes called "pinching" (Coe 1961: 59) (D17), shell edge stamping (D18) and reed stamping (D34). Frequencies of mode occurrence appear in the seriation table and graph for modes of decoration.

Remarks - Chaparron Zoned Red on Brown is very different, in a technical sense, from La Montana Fugitive Red on Cream, although the presence at Chaparron of one cream slipped sherd with a rim form (R6) typical of the La Montana type suggests that they were to some degree contemporaneous. The repertoire of vessel form for the Chaparron type is almost entirely composed of tecomate forms; the tecomate, while a frequently observed vessel form in La Montana Self-Slipped, does not appear in La Montana Fugitive Red on Cream. Where the La Montana type was decorated with a rose-red fugitive pigment, probably applied after firing, the Chaparron pottery has a thick, hard, well polished red to reddish-brown slip, resembling the red slip of the subsequent El Bosque complex. Several decorative modes also continue into the El Bosque complex, such as shell, fingernail and reed stamping. The Chaparron shell stamped sherds display the complete, wavy line impression of the shell edge, either used in a drag and jab fashion or rocked and picked up after every stroke. The El Bosque sherds, on the other hand, show either rocker dentate or roller dentate stamping; in this technique, as Coe (1961: 57) has noted, "... the stamping is carried out with a specially prepared curved edge which has been cut or ground away to form spaced teeth, like a ratchet ... (whose) stamping edges are somewhat coffin shaped in outline."

Chaparron Ceramics: Comparative Data

As was noted in the comparative section on La Montana pottery, Early and Middle Formative ceramics from widely separated sites in the Americas often display striking similarities. While it is not the

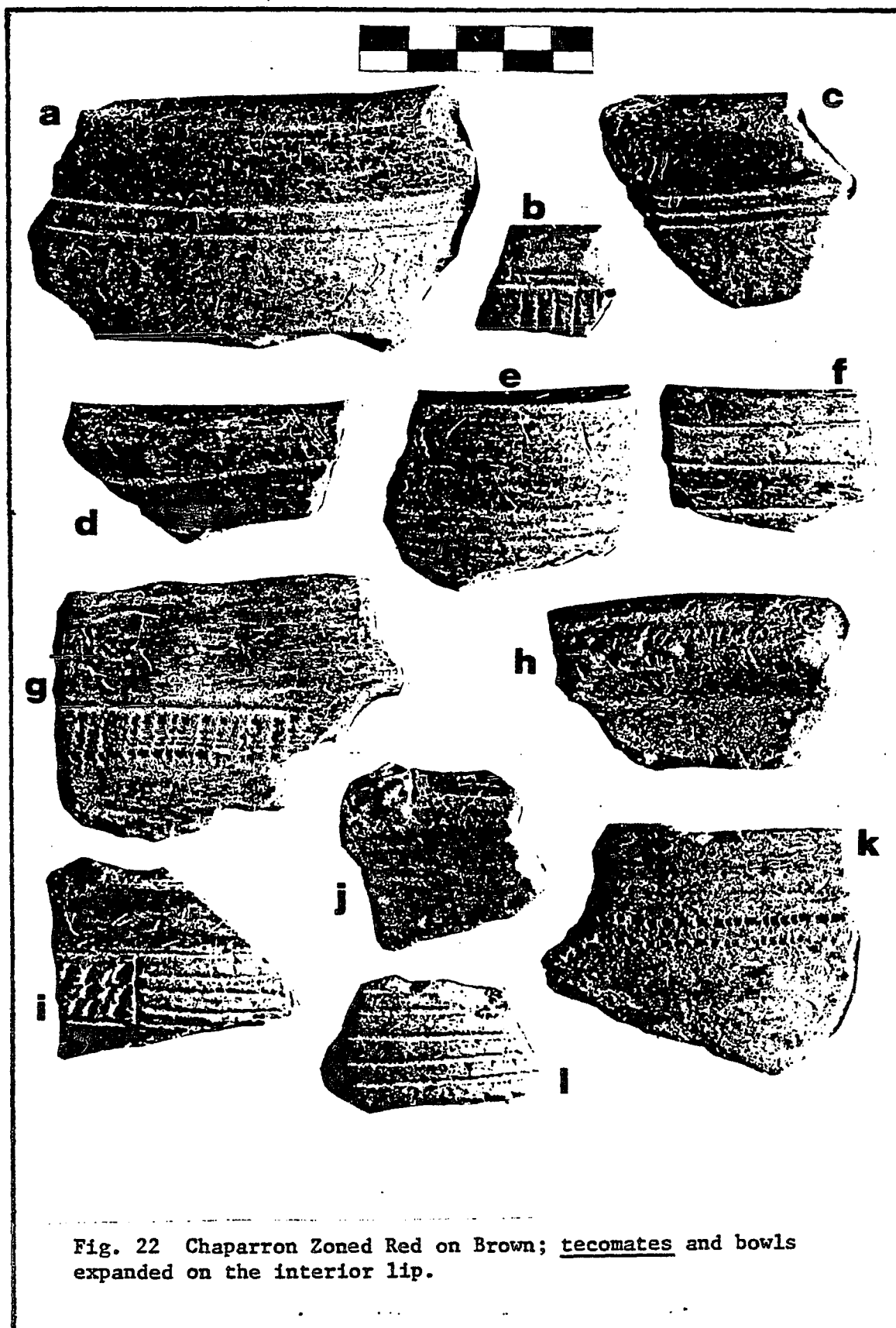


Fig. 22 Chaparron Zoned Red on Brown; tecomates and bowls expanded on the interior lip.

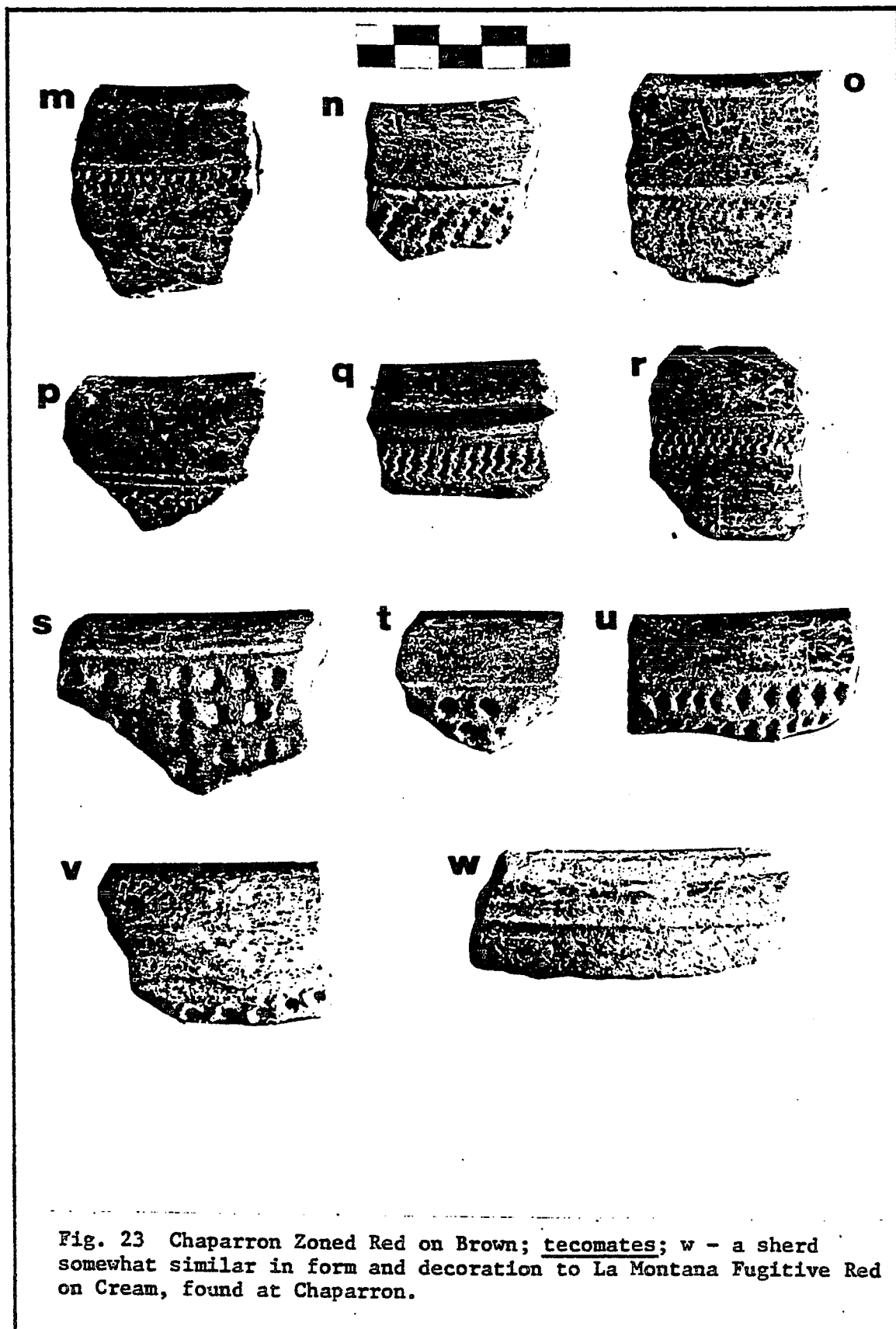


Fig. 23 Chaparron Zoned Red on Brown; tecomates; w - a sherd somewhat similar in form and decoration to La Montana Fugitive Red on Cream, found at Chaparron.

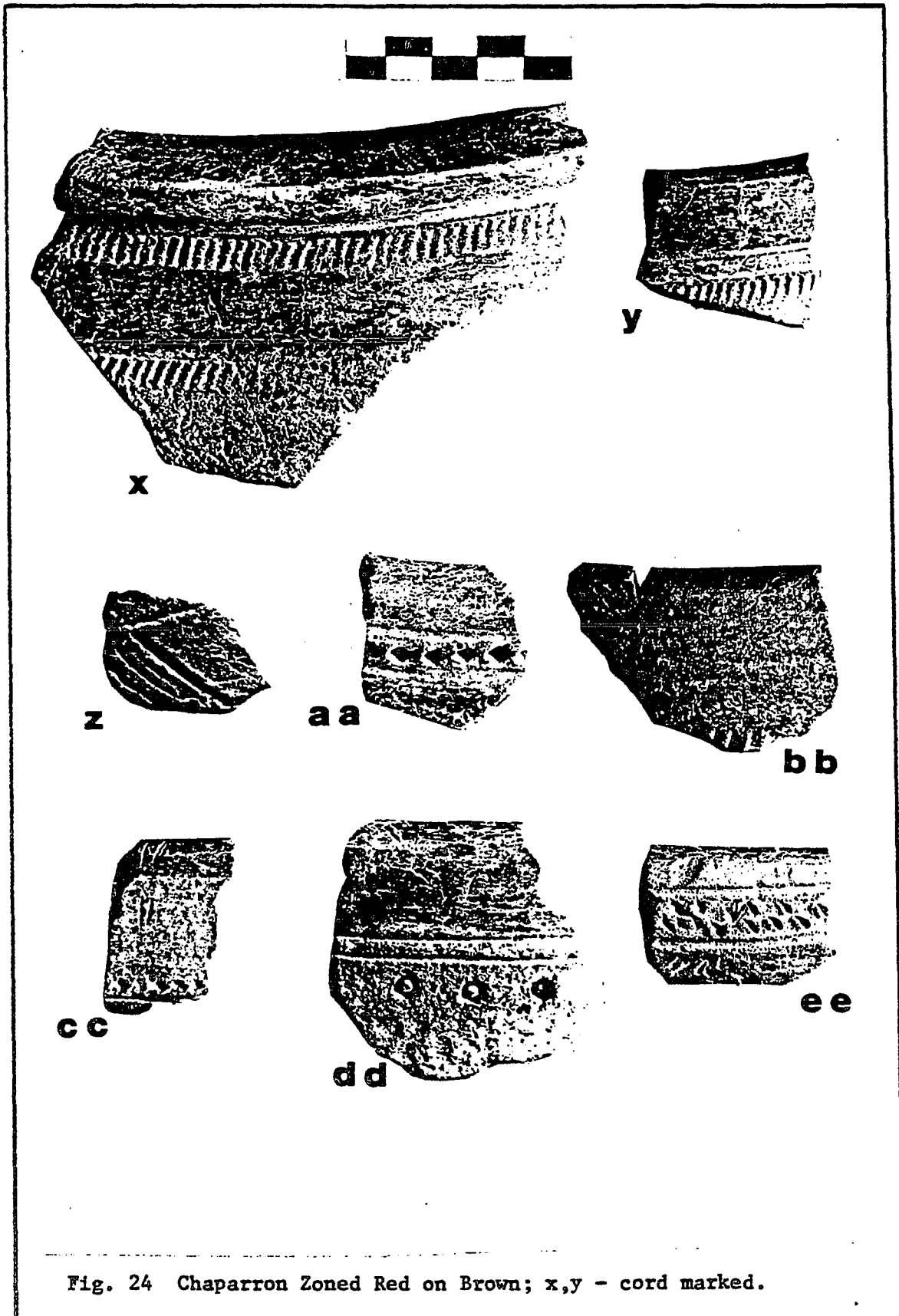


Fig. 24 Chaparron Zoned Red on Brown; x,y - cord marked.

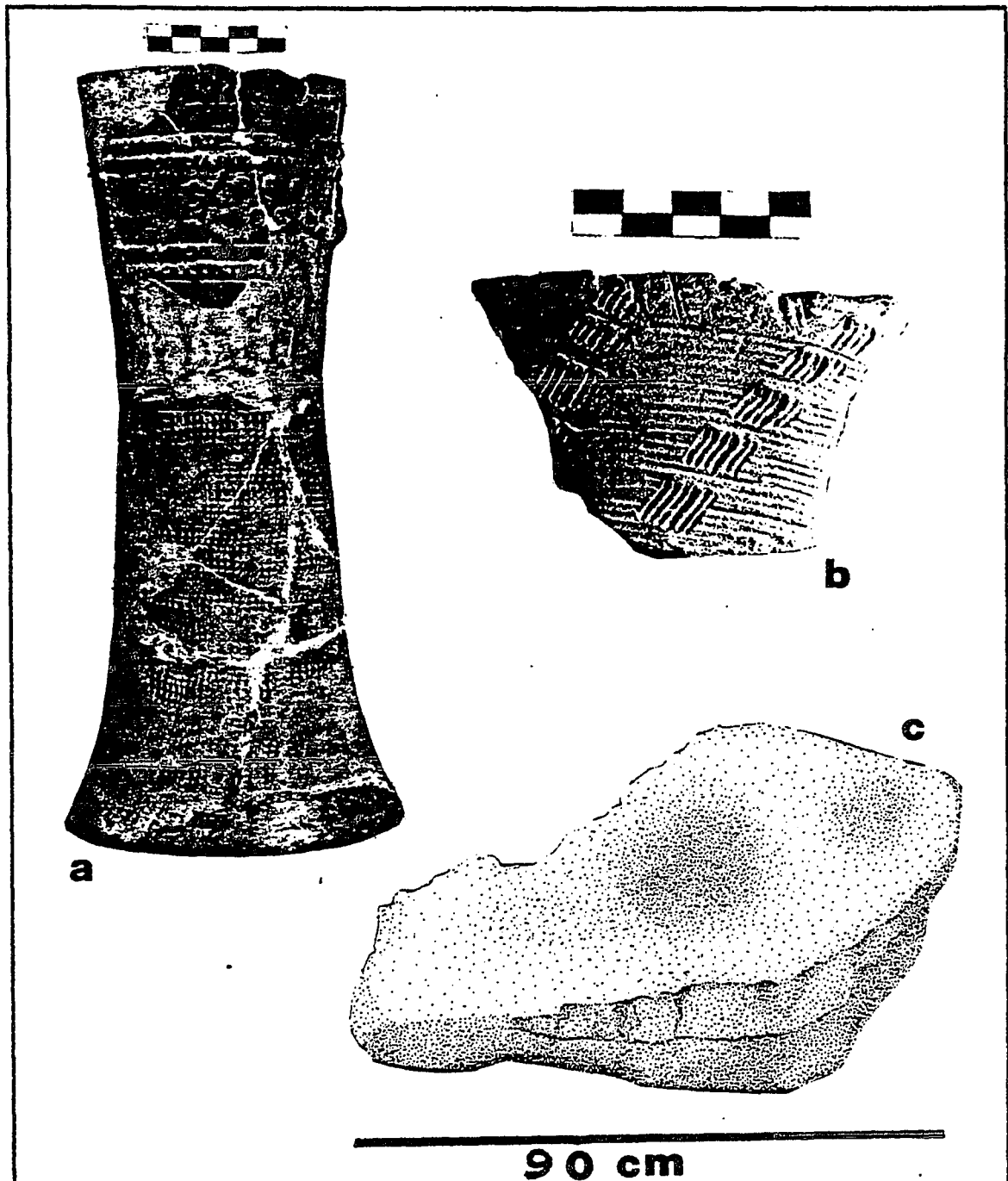


Fig. 25 a,b - cylindrical vessel with zoned rocker stamped decoration, probably a pottery drum, and sherd with combed decoration, both from the ZIP site; c - large, crude stone metate found in association with Chaparron Zoned Red on Brown at Chaparron.

purpose of this dissertation to discuss the mechanisms of cultural diffusion as such, newly discovered complexes like La Montana and Chaparron must be compared, in a general way, to better known ceramic complexes in order to see the Costa Rican sequence in proper perspective.

Although small (488 sherds), and for that reason possibly skewed, the Chaparron ceramic sample was overwhelmingly dominated by red rimmed tecomate forms (85.61%), most of which had a thickened or "comma-shaped" rim profile. Tecomates with zoned red slip are known from the Early and Middle Formative levels of sites in the Tehuacan valley (MacNeish 1962; MacNeish, Peterson and Flannery 1970), La Venta on the Mexican Gulf Coast (Drucker 1952: 117), Chiapas (Dixon 1959; Lowe and Mason 1965; Lowe 1975), and coastal Guatemala (Coe 1961: 49-51; Coe and Flannery 1967: 25-32). The earliest varieties of tecomates in Mesoamerica were thin walled, zonally slipped in specular hematite red and occasionally decorated with crisscrossed grooved lines below the red rim. Later tecomates (1100-700 BC) were generally thicker walled, slipped in non-specular red, well polished with visible tool marks, and decorated in an unslipped band below the lip by means of brushing, punctation, rocker or other shell stamping (Coe and Flannery 1967: 25-26; Ford 1969: 93).

The Chaparron tecomate sherds appear to fall into the second class, inasmuch as they may participate in the Mesoamerican ceramic sequence. Some of the few sherds illustrated by Haberland (1966) from his Dinarte phase on Omotepe Island in Nicaragua also can be placed in this class (better proof of the antiquity of the undated Dinarte material is the presence of a solid flared base from a cylindrical vessel - Haberland's

Fig. 3 - which is identical to that of the ZIP vessel and to sherds found at La Montana and now at Chaparron; this form, probably a pottery drum, is confined to Middle Formative components in Costa Rica). That the Chaparron complex is more "Mesoamerican" than it is southern oriented is fairly obvious: neither the expanded lip tecomate nor red slip zoned by broad incised lines occurs early (or at all) in the Ecuadorian and Colombian sequences (Ford 1969: 92-95, 125-128). The La Montana complex of Turrialba, with its monochrome pottery decorated by a series of plastic techniques and flat griddle forms, seems a much more likely candidate for inclusion in the northern South American ceramic sphere during Formative times.

The concept of a black (smudged) ceramic ware, incised or excised, often with red pigment rubbed into the excised zones, is one known earliest from the Valdivia, Ecuador sequence, where it persists from 3000 to 1500 BC (Meggers, Evans and Estrada 1965: 58-60). Given the associated zoned red tecomates in the Chaparron complex, it is more profitable to look north for comparative material, where one finds Morena Black, a Middle Formative ceramic type with similar decorative techniques, in the coastal Guatemalan sequence. Red filled excision also occurs on Olmec pottery from Cerro de las Mesas (Drucker 1943: 39).

Chaparron pottery shows a series of decorative modes not described previously for Costa Rican archeological ceramics (with the exception of the La Montana complex in this dissertation). Among these are "pinching", or oblique punctation (Coe 1961: 59), multiple point drag and jab (Coe 1961: 59), shell edge stamping (Coe 1961: 59) and cord marking (Coe 1961: 58). Like the technique described for La Montana

ceramics, this method of cord marking apparently involved wrapping a stick in twined cord, and then walking or rolling it across the damp pottery surface. On the Chaparron sherds, cord marking occurs in a single circumferential strip, very neatly done. The unslipped (but polished) buff or brown natural clay band in which the cord marking appears is separated from the bordering zones of polished red slip by round-bottomed broad incised lines.

Coe (1961:59) explains that "pinching" is the term that, in the archeology of the eastern United States, describes the method of pushing the wet clay surface to one side at intervals, producing a rough, textured effect. He also notes that Drucker (1952: Plate 21d, f) reports "pinching" on Olmec ceramics from La Venta. The technique likewise appears in the Barra phase pottery (circa 1500 BC) from Chiapas (Lowe 1975: Fig. 11), and the Chaparron examples are identical to those illustrated by Coe (1961: Fig. 48d) from the earliest phases on the Guatemalan coast.

Described by Coe for La Victoria Ocos phase pottery, but not illustrated, the drag and jab technique has been reported from other Formative ceramic complexes, most notably Valdivia (Meggers, Evans and Estrada 1965: 67-68, Plate 79). The Chaparron sherds, like most of the Valdivia examples, have multiple drag and jab impressions, produced by a two or three pronged tool with squared-off tips. As Meggers, Evans and Estrada suggest, this could easily be the prepared edge of a fluted shell.

Shell edge stamping (Coe 1961: 59), in which the crenulate edge

of a shell was pressed into the soft clay with single, picked-up strokes, not rocked, is present in the Chaparron sample, always appearing in the unslipped band below the vessel lip. The use of similar shell edge in what looks like a drag and jab fashion is also frequent; it is possible that this technique is a variant of rocker stamping noted by Ford (1969: 130) in the Florida Bayou La Batre phase (around 1100 BC) "in which the scallop shell was held with the inner edge almost parallel to the vessel surface and the edge was rocked back and forth." In any case, it is not the kind of dentate stamping which characterizes the El Bosque complex ceramics (discussed above in the remarks on Chaparron Zoned Red on Brown) or those of the northwestern Colombia sequence, notably Puerto Hormiga and Momil (Ford 1969: 128). Shell edge stamping is characteristic of the earliest part of the Valdivia sequence (Meggers, Evans and Estrada 1965:84).

Lithics of the Chaparron Complex

Flaked Stone

Within the fill of the late (AD 1200-1400) cemetery, where the Chaparron ceramics were first noted, two kinds of lithics occurred: (1) cobbles, cores and flakes of a fine grey andesite or basalt, and (2) a series of small chert cores (white, red, yellow and maroon in color) with associated flakes; some of the latter showed notable use retouch.

Since late archeological components in eastern Costa Rica often exhibit a crude percussion flaked industry in rather poorly suited

volcanic stone, and since Layer D at La Montana, as well as some Zoned Bichrome II components, display a securely associated flint/chert industry, it is tempting to associate the chert with Chaparron pottery and the volcanics with the late cemetery, itself made up of river cobbles. Nevertheless, such associations cannot be made in the absence of good stratigraphic evidence, and must await completion of further excavations at the site.

Flint or chert is quite rare in Costa Rica, so it is of some importance to note the location of the Chaparron chert source, said by local farmers to lie on the opposite side of the Cerros Chaparron.

Ground Stone

The only example of ground stone in good association with Chaparron complex ceramics is a large (90 x 55 cm) crude metate found during the 1978 season at 36-CS. It appeared at a depth of 1.5 m in one of the 5 x 5 m squares which were excavated at the site in search of reliable charcoal samples. The few sherds found at that level were all Middle Formative. Although the metate was found on edge, no outline of a pit was visible. The implement was simply a large, relatively flat, river cobble which had been ground down by use in two spots, a larger concavity in the center and a smaller one near one edge. One side of the metate had a roughened surface, either from battering or heat exfoliation; its weight was close to 200 kg, making it unlikely that it had been much displaced from its original location.

Several ovaloid smaller cobbles showed signs of abrasion, and may

have served as manos. No flat, beveled manos like those of the La Montana complex were found, and the La Montana-style cleavers and polished slate celts also failed to appear at Chaparron.

Site Features

No features of any kind were encountered at 36-CS that could be definitely associated with the Chaparron complex ceramics. The small cemetery of stone cist tombs at the site dates to AD 1200-1400.

Summary and Chronology

The Chaparron ceramic complex, characterized by an overwhelming predominance (80-90%) of red-rimmed tecomate forms, along with decorative modes such as polished red slip zoned by broad incised, round-bottomed lines, shell edge stamping, "pinching", multiple point drag and jab, cord marking and excision/incision filled with red pigment, can be associated stylistically with the Mesoamerican Middle Formative (1000-300 BC), especially as it is manifested in sites on the Pacific coast of Guatemala (Coe 1961: Coe and Flannery 1967).

In this regard, Chaparron differs from the other early ceramic complex known in eastern Costa Rica, La Montana in the Turrialba valley. Although the two complexes share many modes of form and decoration, La Montana, with its plastically decorated monochrome pottery and flat ceramic griddles, seems more closely affiliated with the ceramic traditions of northern South America.

Data on settlement patterns and subsistence for the Middle

Formative in Costa Rica are still virtually non-existent. The scarcity of sites in this period, when compared with the relative abundance of sites known from the Zoned Bichrome II Period (AD 1-500), may indicate a notable population increase in the centuries around the time of Christ.

Because of uncertain stratigraphic conditions, there are no radio-carbon dates for the Chaparron complex as of this writing. Like the La Montana complex, the Chaparron complex may continue into the Zoned Bichrome I Period (500-1 BC).

CHAPTER 7: THE ZONED BICHROME II PERIOD (AD 1-500)

Sites and Setting: El Bosque Complex

Sites with components pertaining to this period were numerous, both in the Turrialba valley and the Linea Vieja lowlands. Almost all were multi-component, providing stratigraphy of highly variable quality according to the degree of pre- and postcolumbian perturbation. The flat or gently inclined land between rivers, usually with rich, humic soil, was invariably chosen for occupation sites. Although a truly systematic survey was not carried out, El Bosque sites appear to be quite extensive in their layout, very often giving a feeling of linear organization, as along or between rivers. Sometimes reasonably dense ceramic refuse continues for up to 2 km without apparent breaks. As yet it is impossible to tell if this pattern represents a contemporaneously occupied zone, or a series of sequentially occupied sites.

At the junction of three coffee and sugar cane fincas 1.5 km to the northeast of Turrialba lies a huge multi-component site with extensive refuse, occupational features and cemeteries dating to all periods from Zoned Bichrome II forward. The fincas making up the site are known as El Mora (3-MT), La Isabel (4-IT), and La Zoila (5-ZT). The heaviest concentrations of Zoned Bichrome II material, as judged by surface collections made in fields plowed for cane planting, is to be found on the lands of 3-MT, farthest down the terrace that slopes to the Aquiarres river.

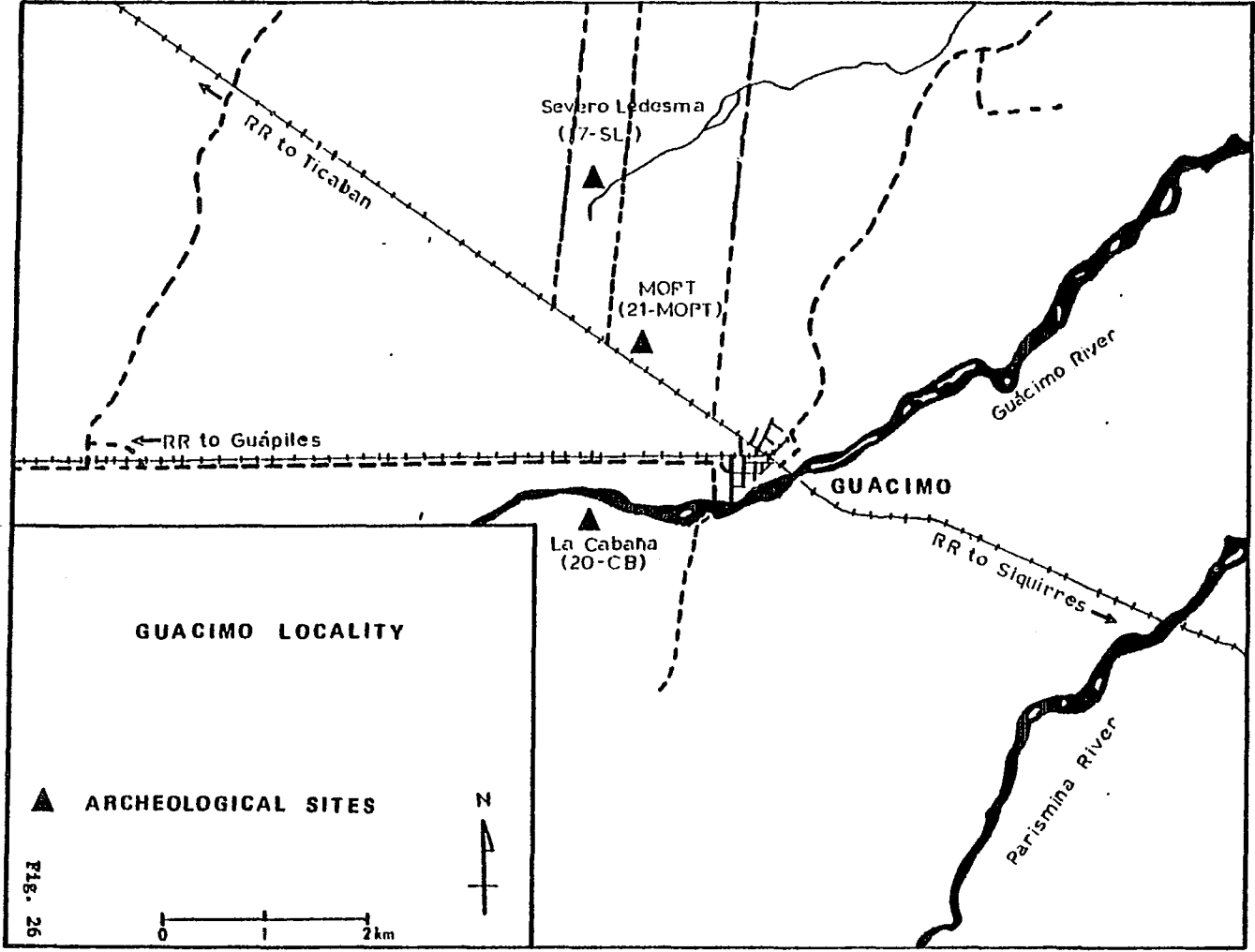


FIG. 26

Another site in the Turrialba valley, Finca Guardiría (9-FG), located along the road to La Suiza, was the locus of one of the two house features found for the Zoned Bichrome II Period on the Atlantic watershed. This site (which also had a Paleoindian component that yielded several fluted points and other tools not discussed here - see Snarskis, in press) is located on a series of old river terraces near the junction of the Tuis and Reventazon rivers. A flint/chert source, in the form of large boulders (to 1 m) which have washed down from the nearby Las Animas calcareous formation, is located in a small stream at the base of the site.

In the Linea Vieja lowlands, three sites with Zoned Bichrome components were tested stratigraphically: Severo Ledesma (7-SL), La Cabana (20-CB) and Finca Patricia (41-FP). Finca Patricia, 5 km west of Guapiles, is a single component site pertaining to the latter part of the period, while Severo Ledesma and La Cabana have overlying occupations of the Transitional and Stone Cist Periods, respectively. These two sites are located in the environs of Guacimo, La Cabana on the first large plain at the eastern base of the Cordillera Central, and Severo Ledesma along a former spur of the burro-carril (a tiny railroad track for horse-drawn cars) laid down by the United Fruit Company at the beginning of the century. It is known as the Calle Tres and has very recently been partially converted into a gravel road.

MOPT (21-MOPT), also near Guacimo, and La Francia (25-LF) near El Cairo down the Linea Vieja towards Siquirres, were surface collected sites; at the former, salvage tomb excavations were also carried out. At Severo Ledesma part of an El Bosque cemetery was excavated.

Excavations and Stratigraphy

Although almost all sites of this period were tested by stratigraphic pits, not all produced meaningful stratigraphy. This was usually a function of both precolumbian and modern perturbations of cultural deposits.

At El Mora (3-MT) in Turrialba, two 2 x 2 m pits were excavated in 20 cm levels, each reaching a depth of over 2 m. These form part of the seriation charts presented for various ceramic modes and types. Because the lower levels of these pits produced very few sherds, several 20 cm levels have been combined in the charts to form a single excavation unit. It is probable that Pit 3-1 at El Mora contained the earliest Zoned Bichrome II sherds, but insufficient charcoal was encountered for dating purposes. The El Mora test pits were taken 30 cm into sterile subsoil and no cultural features were encountered throughout. The road which divides El Mora from the La Isabel and La Zoila farms cut through a large Zoned Bichrome II and Transitional Period cemetery more than 50 years ago, and looting has been intensive ever since. Several of the ornate flying panel stone tables in the MNCR were taken from La Zoila and the neighbouring farm of Azul.

The site of Finca Guardiria (9-FG) was the object of several surface collections during 1975, 1976 and 1977, the primary objective being a search for the Paleoindian points and tools which are to be found at the site. Heavily eroded Zoned Bichrome II ceramics (and undoubtedly associated lithics) also characterize the site. During the first inspection of the site in 1975, three concentrations of rounded

river cobbles and gravel were noted in the plowed cane field. They were oval in shape, roughly 20 x 30 cm and were associated with greater than normal quantities of flint and ceramic refuse. Although the newly sprouted cane was more than knee-high the owner, Tomas Guardia, consented to allow test excavation of one of these features.

A series of 17 2 x 2 m pits, sometimes forming longer trenches, were laid out over the feature and excavated by shovel and trowel. All dirt was screened through 1 cm mesh. The pits revealed subsurface stone alignments (mostly 20-30 cm cobbles), parts of which were disturbed by years of modern agricultural activities. The stone lines, a little over a meter apart, included sections where pairs of flat cobbles had been buried on edge, leaving an 8-10 cm slot between them. It is thought that these supported lines of poles, although no pole remnants or post-holes could be discerned. To one side of the feature, included in one of the stone lines, was a nicely formed circle of stones, wedged into place. This probably represents the basal support of a larger timber, either at the center of the house or near the doorway. At one extreme of the house feature there was a rough circle of stones about 1 m in diameter, suggestive of a hearth. No charcoal or fired soil was noted however. The rounded pebbles and smaller cobbles which had been noted on the plowed ground surface were seen upon excavation to be collected in "drifts" along and up against the lines of larger stones. It is thought that they represent a matrix-strengthening element, much as gravel is when added to concrete. Colonial houses in Costa Rica (and even many built in the early 20th century) employed a similar technique; puddled adobe was slapped on to a cane framework

and strengthened by the addition of broken pottery, roof tiles or pebbles. In the case of the Finca Guardiria feature, the pebble and adobe walls probably served only as a basement, a perishable structure being built on top (again, in the style of certain rural houses).

This promising excavation was unfortunately cut short when the owner decided he could not afford further damage to his cane plants. The house feature (as it may safely be called) was not fully exposed, and one can do little more than extrapolate.

At Finca Patricia (41-FP) near Guapiles, only one 2 x 2 m pit was put in, near a small stream called Quebrada Danta. Large, naturally occurring volcanic boulders came to light soon after beginning the pit, and it went to a depth of only 60 cm before cultural deposits ran out. Severo Ledesma, the two component site near Guacimo, yielded considerably better stratigraphy. Although pit SL-5 was placed on a slight mound, redeposited fill was just 40 cm deep. The inclined strata of the sloping mound could be distinguished from the horizontal pre-mound deposits. The pit was taken to 180 cm and ceramics of the El Bosque complex were seen to underlie later material of the Transitional and perhaps the Stone Cist Periods. Several other pits were excavated at Severo Ledesma but were single component (Zoned Bichrome II) except for SL-8, which was dug adjacent to the aforementioned mound.

Two kilometers south of Severo Ledesma lies the late architectural site of La Cabana (20-CB). Here, a test pit sunk into heavy midden deposits associated with the architecture again showed a clear cut stratigraphy, pure El Bosque complex sherds characterizing the lowest

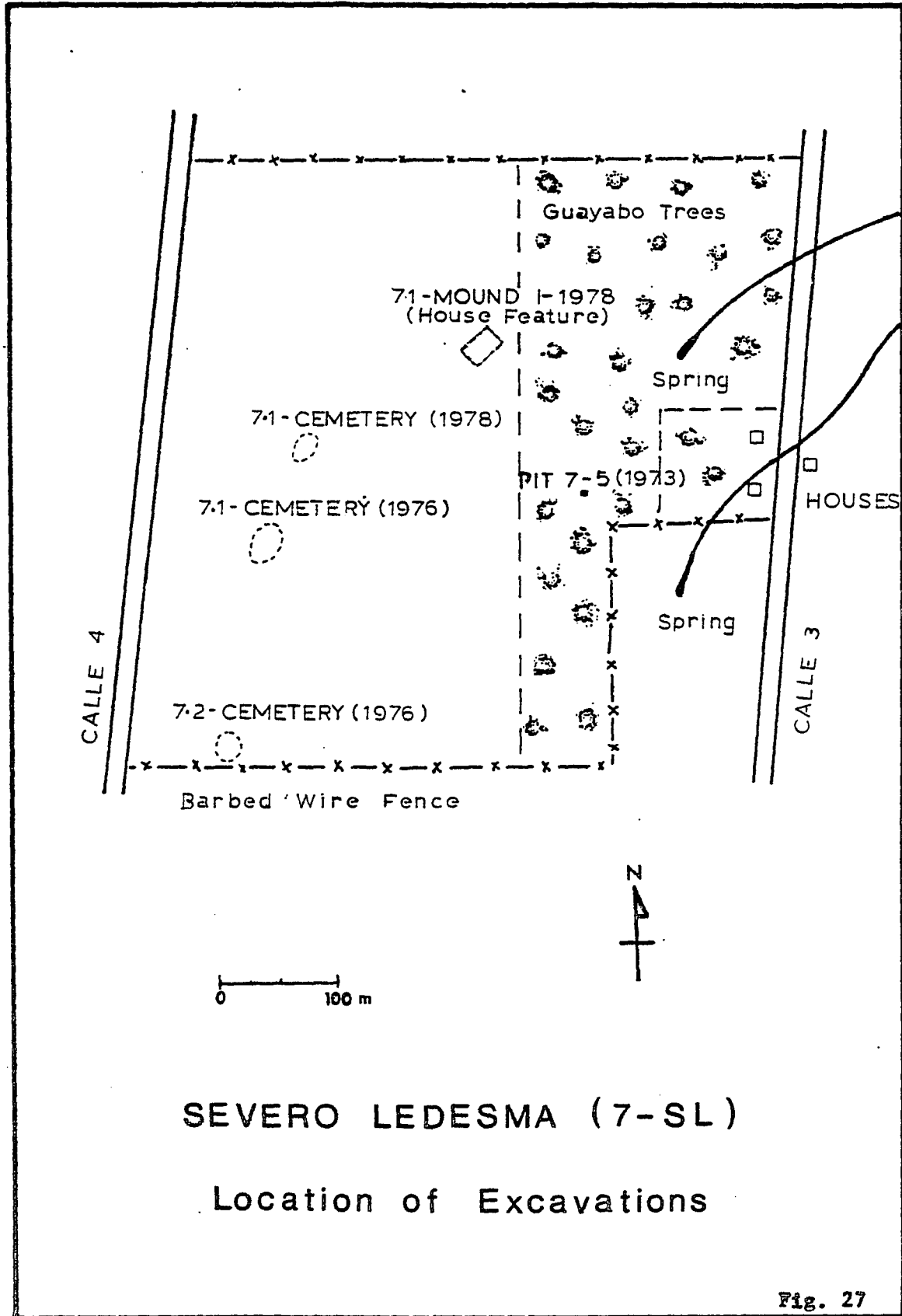


Fig. 27

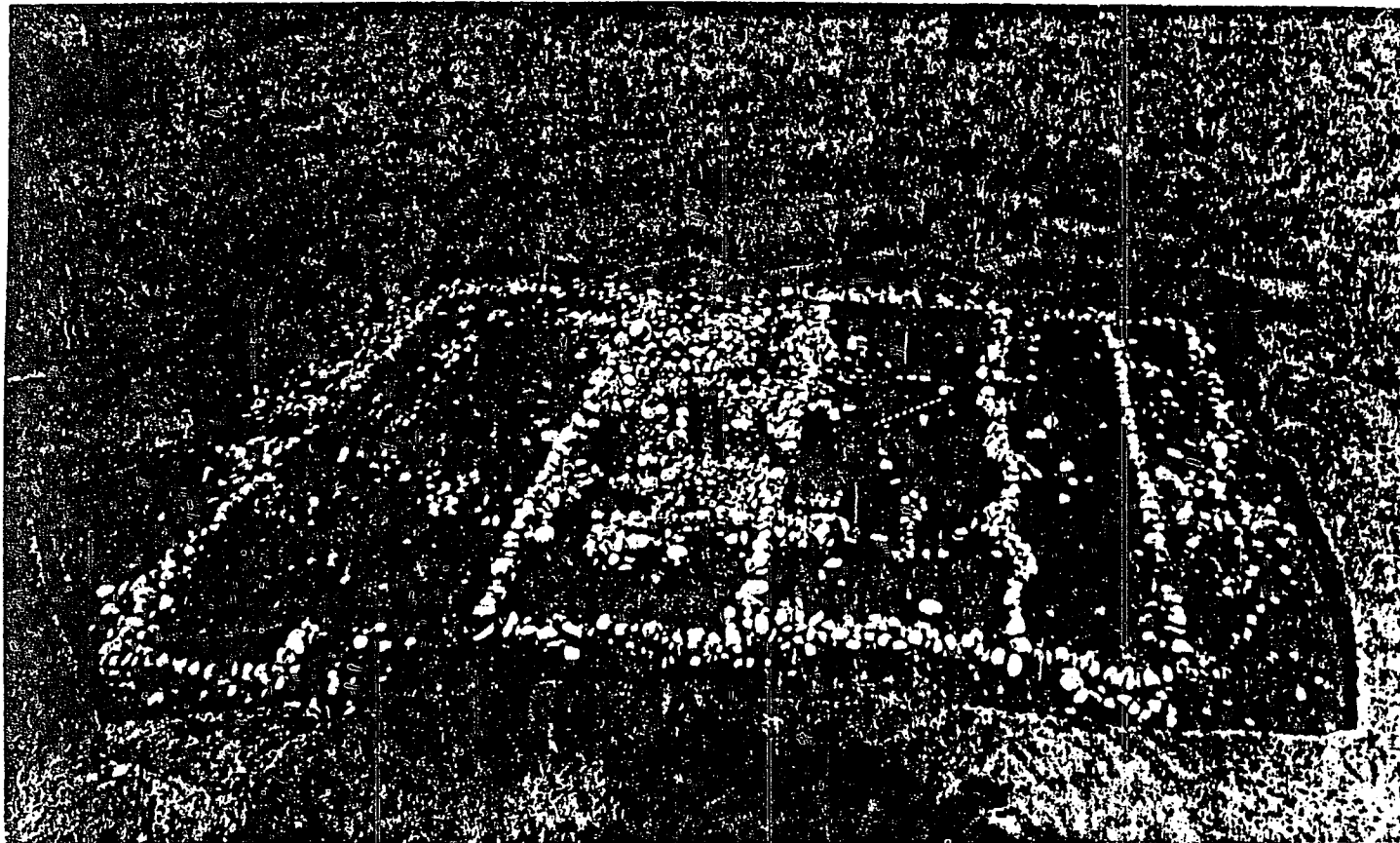
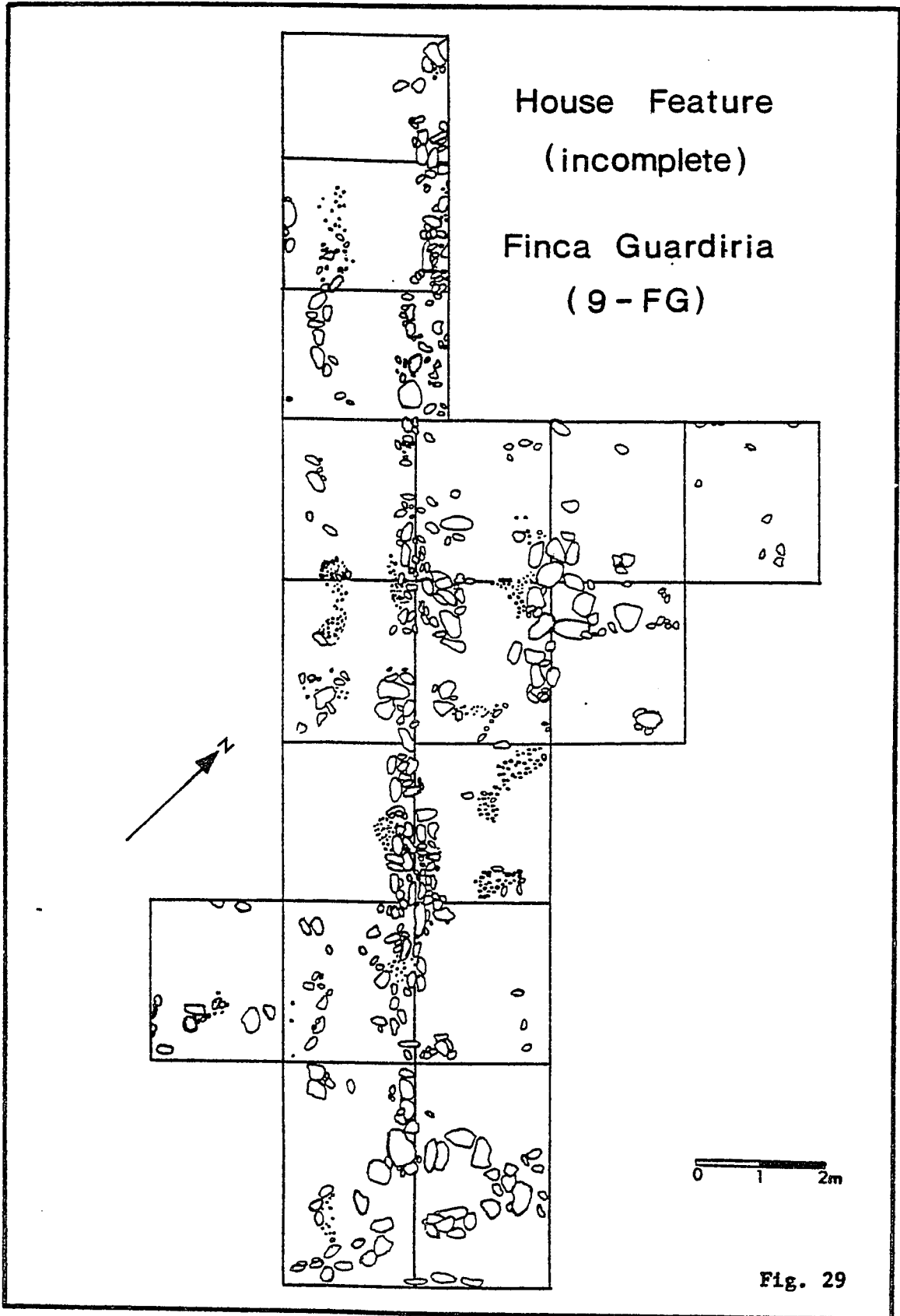


Fig. 28 Zoned Bichrome II house at Severo Ledesma; stadia rod at right center is two meters long and points north (right); entrance to the house may have been at lower left.



levels. As was found in most sites, some El Bosque pottery was re-deposited by later activity, in this case mound building.

At the sites of Severo Ledesma, La Cabana and MOPT, all near Guacimo, grave excavations were carried out. They will be described in the section on site features.

Diagnostic Ceramic Modes, Types and Groups of the El Bosque Complex

The Zoned Bichrome II period is characterized by many new kinds of pottery, but red or red on buff (natural) ceramics (presumably a continuation of the tradition observed first at Chaparron) predominate. Also present are orange slipped vessels painted in red or maroon, and streaky brown-red pottery; since the data at hand for the Zoned Bichrome I period are almost non-existent, it is uncertain when orange slipped and painted pottery made its first appearance on the Atlantic watershed. However, the relative sequence from monochromes, red-rimmed tecomates and black excised with red pigment fill, to zoned red on unslipped buff, orange slipped or painted and streaky brown pottery has been observed in other regions of Middle America (MacNeish, Peterson and Flannery 1970; Coe and Flannery 1967). The differences in form and decoration between Chaparron and Zoned Bichrome II pottery are so great that a several hundred year gap must exist between the two. This hiatus is obvious on all the seriation charts.

The ceramic complex most diagnostic of the first few centuries AD has been designated El Bosque; it is this complex for the most part that will be discussed below. The initial appearance of other ceramic groups

which reached their greatest distribution in later periods is also noted. It should be remembered that the archeological periods are not in themselves cultural phases; when better defined and understood, these may be found to overlap period limits, as has been suggested in Fig. 2.

Paste

El Bosque pottery usually has a fine buff-firing matrix, often incompletely oxidized (P3). It is somewhat sandy, but less so than P5. Red hematite nodules are common and the paste is well knit.

Surface Finish

The surface finish of El Bosque pottery is generally a polished red slip zoned over a natural, smoothed buff surface (SF4). Although the Chaparron ceramics have been ascribed the same mode of surface finish here, the unslipped zones are more obviously polished, with large, lustrous polishing strokes very evident; a separate mode of surface finish will probably be formed in the future, when the Chaparron sample is larger.

The same dark red polished slip of SF4, applied to the entire vessel, constitutes SF5. Sometimes the zone around the collar is left unpolished. SF6 is a light orange slip, very smooth and with few polishing strokes evident; it is usually decorated with wide maroon or purple lines.

Form

Almost the only rim form which continues from the two early ceramic complexes, La Montana and Chaparron, into the El Bosque complex is the incurving, tecomate-type rim which is built up on the exterior side (R11, R12). For La Montana and El Bosque this usually takes the form of a rounded bead (R12), while the Chaparron variety is thicker and squared (R11). Presumably these rims came from unsupported tecomates in La Montana and Chaparron, since vessel supports of any kind are very few. The El Bosque manifestation, however, was almost invariably a tripod tecomate, with solid loop leg supports. One is reminded of the tripod tecomates of the Ocos phase (Coe 1961: Figure 14) although they are not loop legged. It should be emphasized that the comma-shaped tecomate rim apparently does not appear in El Bosque, though it makes a limited reappearance in the later La Selva Sandy Applique Group.

A large number of El Bosque vessels are characterized by rims which expand at the lip, generally on the exterior side. These include large pans or dishes, many with outslanting walls and an almost flat bottom (R13), ollas, most quite large with rims at approximately a 45° angle (R14), and composite silhouette bowls with vertical or slightly in-slanting walls and a sharply defined basal angle which leads into a rounded bottom (R16). All of these rim forms have a counterpart which does not display expansion at the lip (R15, R17, R32).

Beginning with R18 and including all those through R32, are forms which, although occurring in varying frequencies in Zoned Bichrome II,

represent the gradual transition of that period into the Transitional Period (AD 500-1000).

Among other modes of form, the sharply defined basal angle (Fl) mentioned above is very diagnostic of Zoned Bichrome II; it was sometimes converted into a well defined basal flange. Annular bases of more than 1 cm in height are very rare, but the small ringstand modeled on the vessel bottom is common. The earlier forms of the extraordinary long-legged tripod (florero) tradition appear in this period, probably originating in Zoned Bichrome I (500-1 BC). They have tall, solid supports, cylinders looped or doubled in the form of human legs; almost invariably, a zoomorphic or anthropomorphic modeled figure or adorno is attached to the upper part of the support where it joins the body. Except for the loop legs, hollow versions of these supports also occur in this period, usually with clay balls inside which made the support into a rattle. A distinctive El Bosque form is the large pottery basket, basically an olla with a thick, solid handle, lustrously slipped, attached in an arch over the vessel mouth. Conical and mushroom shaped vessel supports also occur.

The majority of the figurines, rattles, ocarinas, pipes, nasal snuffers and pottery stamps known from eastern Costa Rica can be assigned to this and the succeeding Transitional Period. Such objects, typical of the El Bosque complex, are made of a thin, buff biscuit-like ware, often painted in white, black and yellow. Later examples usually have a carelessly applied red slip.

The relative rarity of handles in this period might well be

ascribed to the predominance of large expanded-lip rims, salient adornos and large tripod supports, any and all of which undoubtedly served as grasping points for lifting and moving the vessel.

Decoration

The ceramics of the El Bosque complex are usually bichrome, with red, orange and maroon pigments applied in zones. Vessels with polished red slipped interiors and/or lips are typical. On many vessels the naturally buff-colored clay is left exposed in a panel around the exterior collar or neck. Much less frequently, a cream slip is applied in this zone. The panel may be left blank or it may be decorated by a series of tool impressed techniques, applique motifs, painted linear patterns or any combination of these methods. The frequent occurrence of both roulette and rocker dentate stamping on El Bosque sherds suggests a generic connection with the shell stamped pottery of Chaparron; these two complexes are the only ones known in the eastern Costa Rican sequence with shell stamping.

Drag and jab, so prevalent in the Chaparron complex, is apparently absent in El Bosque. The shell tools used to produce the rectangular, separated impressions typical of El Bosque were ground down between the "teeth" or ridges found naturally on many shells (Anadara muttcostata, for example) so as to produce a ratchet-like effect.

Other modes of plastic decoration found in El Bosque ceramics include reed stamping, combing, scarifying, post-slip grooving, channeling or fluting, pattern burnishing, and applique adornos and

pellets.

Vertical lines of red or maroon paint (often finger painted) in the buff panel are diagnostic for El Bosque. Similar lines on a rough orange slip or executed in resist technique indicate pottery which continues into the succeeding Transitional Period.

El Bosque applique zoomorphic adornos most often take the form of alligators (in many stylized versions), iguanas, frogs or toads, crabs, turtles, pisotes, monkeys, harpy eagles, owls and other buzzard-like rapacious birds; also present are deer and what appear to be American camelids (llama or guanaco). Feline motifs are rare, becoming more frequent in later periods. The human face or head is a popular motif, probably reflecting the custom of taking trophy heads in battle.

Types and Groups

The following groups or types have been formulated for the El Bosque complex:

El Bosque Red on Buff Group (TG5)

Paste - P3 Surface Finish - SF4

Form - El Bosque Red on Buff displays many forms including: tecomates with exterior expanded lip and solid loop leg supports (R12); large pans with outslanting walls and almost flat bottoms (R13) grading into large, curved bottom dishes (R13, R32); ollas with 45° angle rims (R14,

R15), grading into ollas with everted (90°) rims (R18, rarely R28); composite silhouette (carinated) bowls with a notably sharp basal angle (F1) (R16, R17); composite silhouette dishes (R24). Supports are mostly ringstands (SX1) and solid leg tripods (S1, S12, S19, S22). Handles are absent.

Decoration - Frequently observed decorative modes are: post-slip grooving on lip (D19), applique pellets (D23), roller dentate stamping (D22), reed stamping (D34), zoned smudging (D20), combing (D32), jabbing (DX2), thin painted vertical lines at collar (D28), zoomorphic (D23) and anthropomorphic adornos (D24), circumferential wing-like tabs (alligator) (D35), scarification (D30), applique fillet, pinched or scalloped (D29), band of shaped applique pellets (stylized alligator motif) (D27). Rarely, resist decoration (D36) is found.

Remarks - El Bosque Red on Buff displays a large number of different modal combinations, hence its denomination as a group and not a type. Frequently observed mode clusters include: (R13-D19-D32), (R12-D24-D30), (R16-D28), (R17-D23), (R17-D35), (R15, R18-D27), (R14, R15-D34). Vertical painted lines in the buff collar zone, red or maroon in El Bosque, are also diagnostic for the contemporary Guanacaste types, Zelaya Bichrome and Trichrome (Baudez 1967: Planché 23; 1970: Illus. 5), but are often executed in black paint. Lothrop (1926: 328, Plates CLXVI, CLXVII) illustrates El Bosque Red on Buff group vessels, referring to them as Red-Lip Ware. Stone (1966) follows Lothrop's terminology, but gives no chronological placement. Kennedy (1968: Plates LII, LIII, LVII, LIV) uses many different names for his "wares", all of which can be subsumed in the El Bosque Red on Buff group. They include: Red Buff

Drag and Jab, Red Buff Rocker Stamp, Red Buff Applique, Red Applique Dot, Cristo Red Buff Zoned Punctate, Red Buff Punctate, Cristo Coarse Punctate, Cristo Red Punctate, Red Buff Reed Punctate, Cristo Red Buff Zoned, Red Buff Combed, Red Line on Buff, Guayabo Incised and Unclassified. Aguilar (1972: 71) calls this group Guapiles de Borde Rojo, mistakenly assigning it to the AD 800-1000 period. It actually predates the architecture at the Guayabo site, and was later distributed throughout the site as part of the fill.

El Bosque Red Group (TG6)

Paste - P3 Surface Finish - SF5

Form - This group is mostly made up of ollas with 45° angle rims (R14, R15); there are some flat pans (R13), composite silhouette bowls (R16, R17, R24), tecomates expanded on the exterior (R20), and everted rim ollas (R18). Supports include ringstands (SX1) and hollow conical tripods (S8). A small loop handle between the lip and vessel shoulder (H2) is occasionally seen on decorated varieties.

Decoration - El Bosque Red is mostly undecorated; some use of painted vertical lines around the collar (D28), applique pellets (D23) and zoomorphic adornos (D23) is seen. Pattern burnishing (D26) is a frequent decoration of smaller vessels in this group. Commonly, the collar zone (which corresponds to the buff band in El Bosque Red on Buff) is slipped but polished poorly or not at all; rims and bodies are well polished. This contrast in texture was probably conceived as a decorative technique. Areas left rough (or roughened) around handles or adornos sometimes are colored with maroon or purple paint. Use of

white painted lines (D43) and resist (D36) is rare.

Remarks - Its more limited range of forms suggests that El Bosque Red found mostly culinary use. Forms other than ollas, however, display more decoration. As an all over red slip is characteristic of types slightly later in the sequence, El Bosque Red may grade into them. Its decorative modes also suggest this. Kennedy (1968: Plate L) refers to this group variously as Plain Red, Dark Red, and Cristo Red.

El Bosque Orange-Purple Type (TG7)

Paste - P3 Surface Finish - SF6

Form - Frequent forms are: ollas (R15), composite silhouette bowls (R17), straight rim tecomates (R19), and solid leg tripods (R21).

Rectangular, flat bottom pans or trays are known for this type. Solid tripods, oval in cross section, are frequently observed (S3, S13).

Some ollas have two rounded tabs projecting from the body which may be handles.

Decoration - Frequently, zones of unpolished purple pigment are placed between zones of polished orange slip. These zones are often divided by applique ridges (D25). Ollas commonly display painted purple geometric bands on polished orange slip. Channeling or fluting (D31) is also seen, as are groups of vertical black lines on the interior or exterior of tripod bowls.

Remarks - This type is similar in many ways to Crespo and Molino of the Pavas complex in the Central highlands (Aguilar 1975).

Variations observed between the two types are probably a function of space rather than time. Kennedy (1968: Plates LII, LVI) calls this group Cristo Incised, Cristo Red Finger Grooved, and Cristo Fine Red.

Ticaban Tripod Group (TG8)

Paste - P3 Surface Finish - SF4, SF5

Form - These vessels are basically olla or bag-shaped containers (variants of R15, R18, R23, R35) on tall supports (S1, S2, S3, S7) which may be solid or hollow cylinders, solid loops, or double solid cylinders, sometimes tapering or with stylized feet (paws) at the bottom.

Decoration - Almost all examples of this group have some kind of zoomorphic moulded effigy (unslipped) (D23) mounted on upper part of each support. Roller dentate stamping (D22) on slightly raised circumferential applique bands is common, as are vertical ridges in a spiral or helical form. Vertical painted lines (D28) are less common.

Remarks - This group grades into the Africa Tripod Group. The use of such vessels is problematic; most have carbon deposits from being placed over a fire. As they are almost always found with other kinds of bowls or ollas in grave offerings, they may have contained the funeral chicha or some other beverage. Apparently, examples with solid supports are earlier than hollow legged varieties, although this is still unclear. Vessels of this group frequently show shell stamping (D21) while those of the Africa Tripod Group never do. Long solid supports with an oval cross section also characterize Pavas complex



Fig. 30 El Bosque Red on Buff.

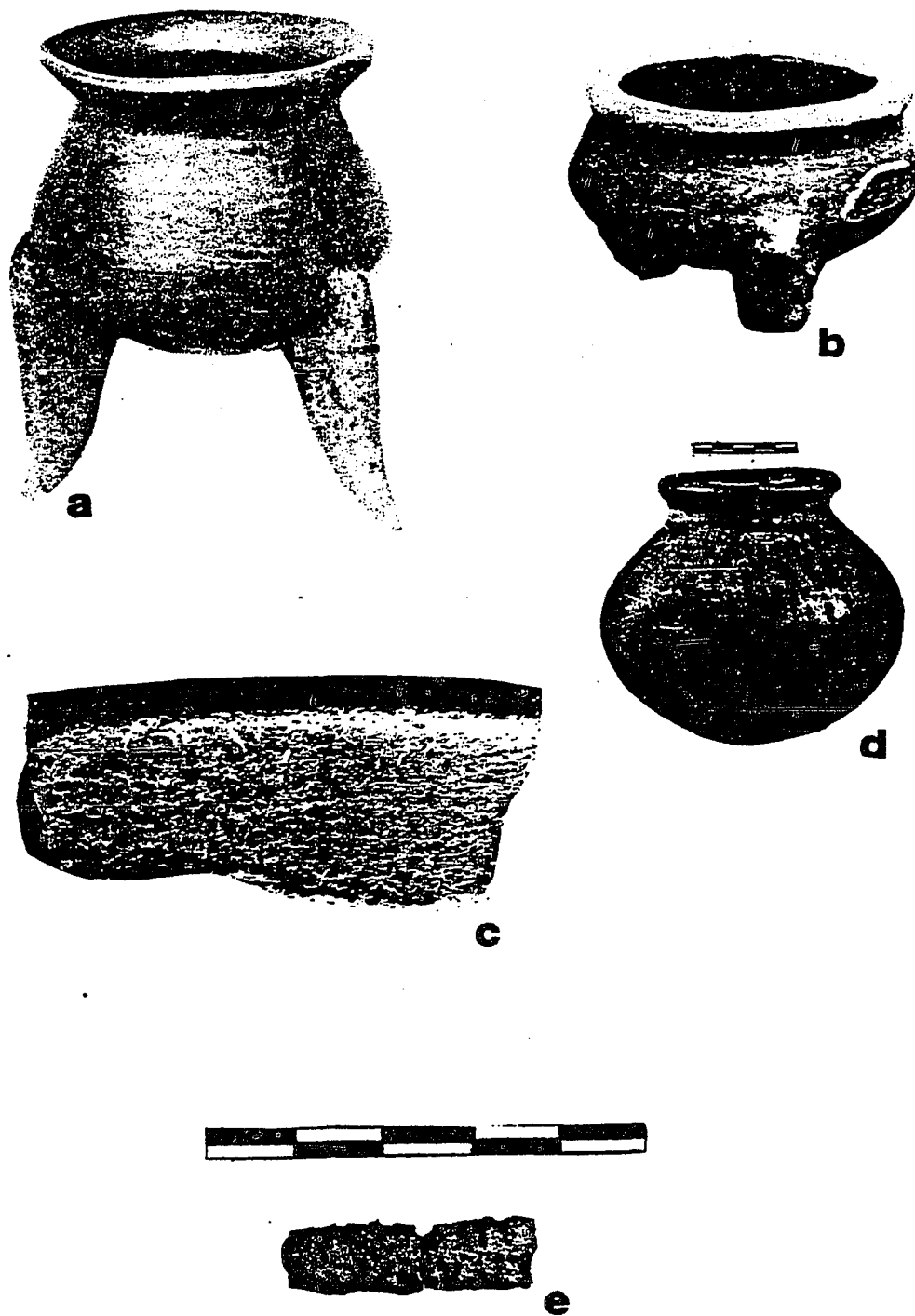


Fig. 31 a-d - El Bosque Red; e - carbonized maize cob of the South American race Pollo, found in the lower levels of Pit 7-5 at Severo Ledesma.

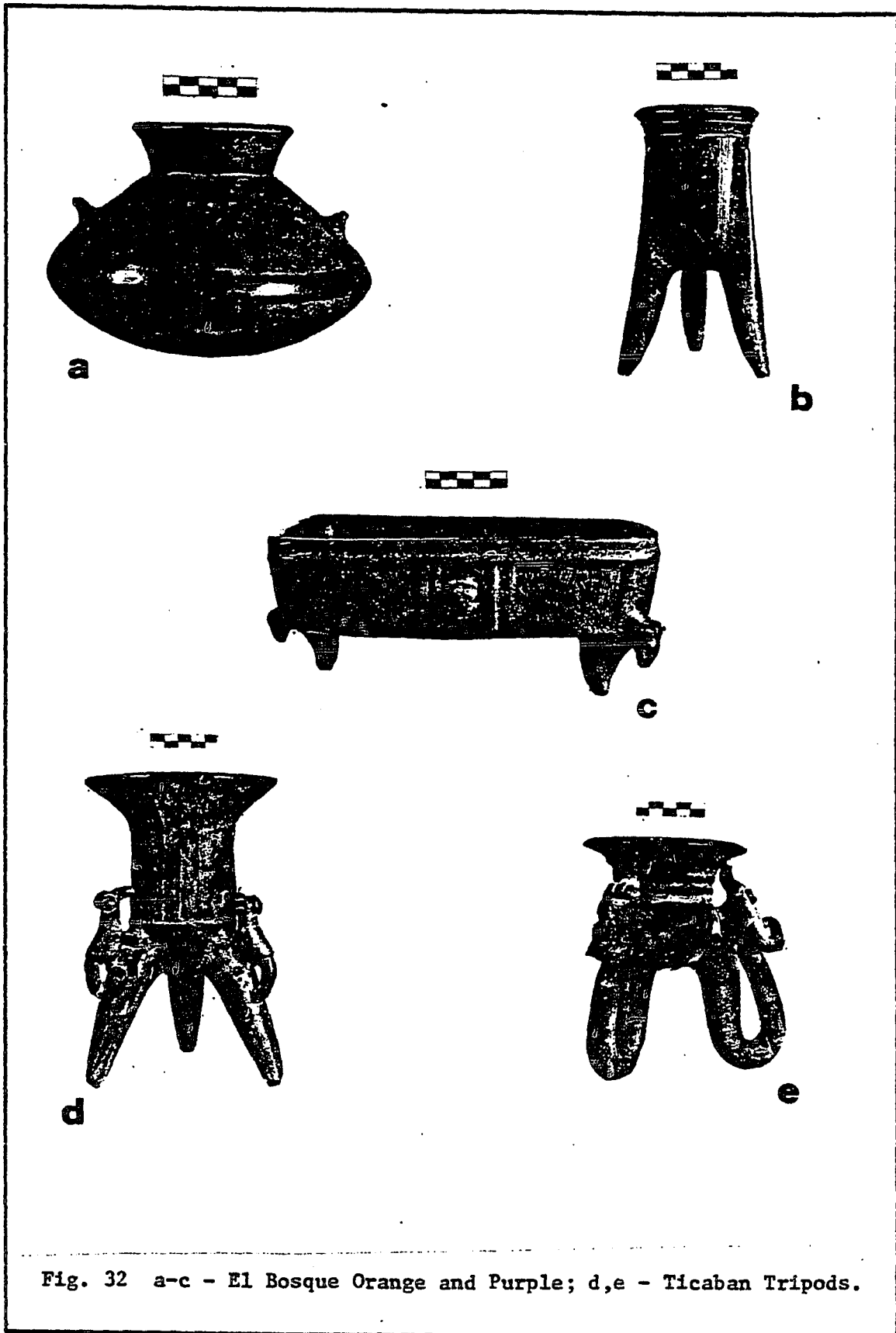


Fig. 32 a-c - El Bosque Orange and Purple; d,e - Ticaban Tripods.

ceramics (Aguilar 1975) in the Central valley.

Comparative Data: El Bosque Ceramics

Stylistically, the pottery of the Zoned Bichrome II period (especially the El Bosque complex) has close affinities with neighboring ceramic complexes dating to a similar time period. Most noteworthy are the Aguas Buenas complex of Greater Chiriqui (Haberland 1955, 1959, 1962; Willey 1971: 283, Fig. 5-32), La Concepcion or Scarified Ware complex (Holmes 1888; MacCurdy 1911; Willey 1971: 284, Fig. 5-33), and the recently defined Pavas ceramic complex in the Costa Rica central highlands (Aguilar 1974, 1975 and personal communication). Certain ceramic types of the Zoned Bichrome period in Greater Nicoya also show close correlations at the modal level (Coe and Baudez 1961; Baudez 1967: see Catalina Phase Material; Stone 1972: 98; Healy 1974, 1976).

Looking further afield, we may compare the Zoned Bichrome II pottery with that of Momil, a site in the northern Colombian lowlands (Reichel-Dolmatoff and Reichel-Dolmatoff 1956). Numerous ceramic modes in the two complexes show a striking similarity, especially the custom of leaving a buff, unslipped panel around the exterior collar of a vessel in which decorative techniques were applied and the use of roller dentate stamping. For many years there were no radiocarbon dates for Momil and although some archeologists had considered the site to be as early as 1000 BC (Ford 1969), recent radiocarbon determinations have placed even the lowest levels of Momil I as no earlier than 200 BC (Reichel-Dolmatoff 1974: 185).

This new time placement tends to support the hypothesis of cultural continuity between Momil and contemporary aboriginal occupations in eastern lowland Costa Rica. The question that must be addressed is why certain ceramic modes (like zoned slip, carinated bowls, rouletted and rocker dentate shell stamping, among others) should persist all the way from Colonial Formative times until several centuries after Christ in regions characterized by a tropical rain forest environment such as parts of Amazonia, Colombia and eastern Central America. An hypothesis for this persistence will be offered in the final chapter.

With the exception of salient basal flanges (often scalloped or nicked), ceramic complexes to the north of Costa Rica show little in common with Zoned Bichrome II pottery (Healy 1976; Baudez 1976; Baudez and Becquelin 1976). Diagnostic modes of the El Bosque complex like flat bottomed pans, carinated bowls, zoned red slip, and rocker dentate stamping, all occur considerably earlier in northern Central America and Mexico, at the latest by the Middle Formative (1000-500 BC) (MacNeish, Peterson and Flannery 1970: Fig. 153).

Lithics of the Zoned Bichrome II Period

Flaked Stone

Every site that had an El Bosque component (3-MT, 4-IT, 5-ZT, 7-SL, 9-FG, 17-CATIE, 18-LM, 20-CB, 21-MOPT, 23-LF, 41-FP) yielded a small amount of flakes made of cryptocrystalline stone (flint, chert, quartz, agate) and, in a very few cases, small cores. No chipped stone projectile points were found securely associated with El Bosque pottery;

in fact, not a single recognizable pressure flaked stone tool was encountered, with the exception of small drills. These tools were found in the La Montana cemetery, which was in use during both the Zoned Bichrome II and Transitional Periods; the drills will be described in greater detail in the next chapter. In all Zoned Bichrome II sites some flakes and cores of volcanic stone (andesite, basalt) and slate were found.

Double-bitted axes and slate "spear points"

Definitely associated with Zoned Bichrome II sites are double-bitted waisted axes (Fig. 34) which are usually made of a fine dark grey shale which oxidizes to a light greyish green, although many axes are also made of andesitic volcanic rock. Both flaking and grinding techniques were usually employed. These lithics are actually unsuitable for flaking, as the artifacts themselves attest; all flake scars take the form of pronounced step fractures and the narrower waist of the axes was clearly achieved by pecking or battering. Most examples are broken and/or show heavy use.

Thomas Lynch (personal communication) has indicated to the author that similar axes were used in Peru to clear and cultivate agricultural plots. This would seem to be the most logical interpretation of function in the case of the eastern Costa Rican axes as well. Their lack of sharpness or hardness would seem to preclude their use in activities other than clearing of scrub vegetation and weeding. Their sheer numbers (thousands have been found throughout the Turrialba valley) and wide distribution argue against their use as weapons.

Healy (1974: 453) comments on slate axes associated with Early Polychrome (AD 300-800) ceramics in Rivas, Managua.

More likely candidates for the weapon category are the chipped slate objects found much less frequently in Zoned Bichrome II sites. These pointed tools have been shaped with an eye toward producing sharp edges; although frequently found broken, they never show the ground or abraded edges so common in the axes described previously. Lateral tangs observed on many examples appear to have been used in some kind of hafting process.

Occasionally, a variant of the double-bitted slate axe is encountered in which purposeful points have been produced by grinding and chipping along the blades, creating an effect not unlike the Maya eccentric flints. Most probably, these were used as weapons.

Ground Stone

Most recognizable lithic implements of the Zoned Bichrome II Period are made of ground volcanic stone (usually vesicular andesitic or basaltic rock). Presumably, shaping was accomplished with other stones and perishable tools, used with a quartz sand abrasive.

Metates (Stone Grinding Tables)

This ubiquitous artifact type was imbued with considerable ceremonial importance during Zoned Bichrome II times, and consequently assumed several different forms. The excavation of dwelling sites as well as tombs of differential social/sexual status has indicated that

the quotidian metate type during this period was most often a roughly oval stone slab, usually with stubby cylindrical tripod feet (5-10 cm), frequently worn down to a trough-like shape although usually without a raised border carved along the perimeter (Fig.33b). This kind of metate was found in two tombs at site 7.1-SL; other fragments were collected around the habitational feature at the same site, and broken pieces as well as unfinished pieces of this type were frequently incorporated into the stone perimeter walls of tombs at the site. In only one instance (Tomb 1-7.1-SL) was such a metate found associated with jade; in that case, two broken, rather formless fragments of jade were found (Fig.127A).

When encountered in finished form these metates invariably show heavy wear. The mano or muller was apparently used in a long push-pull motion and slightly rocked; usually a section of the edge has been worn away as a result of the stroke. This corresponds well with the shape of the manos themselves, as will be seen shortly.

Another type of metate found in Zoned Bichrome II sites may be either rectangular or round. It is always tripod, with cylindrical or slightly squared feet which range from approximately 10 cm to 50 cm or more in length. Judging from the shape of these supports on metates found both in the Turrialba valley and the Linea Vieja, the isolation of each support was first achieved by drilling holes into a block of solid stone at points which corresponded to the four corners of each support, each of which was roughly square in section. These holes were then linked by other cuts and the final shape of the leg was either squarish or roundish, depending on the extent of the final grinding.

A salient characteristic of this type of metate is a carefully carved raised edge around the entire perimeter. Occasionally, the plate or table itself is remarkably thin (less than 3 cm), rendering the metate virtually useless for long-term daily food preparation tasks. Not surprisingly, this kind of metate shows a different wear pattern than the ovoid variety discussed above. In most cases, a small section at the center of the table, not exceeding 20 cm in diameter is worn down. This part is not only smoothed, but forms a small depression as if hammer-like blows as well as rubbing strokes were employed. The raised edges are seldom if ever worn away.

As it is this type of metate which is most often associated with carved jade artifacts of the Zoned Bichrome II period, a ceremonial role of some sort is suggested. It might be that metates of this type were utilized in the preparation of substances other than daily comestibles. The virtual lack of wear on certain metates of this type suggests a similar interpretation. Whether this implies the ritual preparation of drugs (Snarskis 1976: 344) or merely ceremonial food-stuffs is as yet uncertain. This type of metate was excavated by Stirling (1969) at the Linea Vieja site of Mercocha, in conjunction with ceramics of the El Bosque complex as well as the La Selva Complex. It probably continues into the Transitional Period to judge by the examples recovered from the cemetery at the 18-LM site in Turrialba. Almost always, the lateral edges of this kind of metate are notched, or even carved into small stylized representations of human faces, symbolizing the shrunken trophy heads taken by warriors in battle, a custom which continued into historic times.

Related to the previously described type of metate are other, more elaborately carved varieties. One of them displays a backbone-like ridge of carved projections along the inferior surface of the plate or table; these probably represent the scutes of the alligator or caiman, the most frequently portrayed animal in Costa Rican pre-columbian iconography. Some examples of this kind retain remnants of white pigment applied to selected parts.

The so-called altares, or ceremonial metates-cum-seats, were apparently first manufactured during the Zoned Bichrome II Period. Although no complete examples were excavated by the author, several fragments were found in stratigraphic pits and in tomb fill at sites on the Línea Vieja and in Turrialba.

Many of the largest and most ornate of these flying-panel metates (Fig. 49) were looted from tombs near Azul, on the outskirts of Turrialba. It appears from a comparison of style and motifs that the earlier examples of this type were smaller and more stylized, the larger, more complex model, having been made early in the Transitional Period.

Manos (Mullers)

The standard mano during the Zoned Bichrome II Period was loaf- or bar of soap-shaped (Fig. 33). Both its convex surfaces generally show wear, one usually more than the other; some examples are worn almost glassy smooth. Its shape suggests that this mano was slightly rocked during each stroke. The La Montana Middle Formative manos, it

will be remembered, were used with a non-rocking motion, a flat, scrubbing stroke which produced sharply beveled or ground edges on the tool; this suggests that different substances were being ground in the two periods.

Some manos of this type are simple loaf shapes with only a slight roughening around the edge between the two grinding surfaces. Others display a very distinct groove as if for hafting or grasping, in the same place. This was the most common type found in the El Bosque complex cemetery at the 7.1-SL site in Guacimo. Not infrequently these tools also show evidence of having been used with a pounding stroke on the ends; battering and spalling occur only there.

Less often found in sites of this period are loaf-shaped manos which have been carefully squared off at the ends and sides. It is thought that this shape was more typical of the Transitional Period; the 7-SL site El Bosque occupation apparently continued into that period, as the ceramics also suggest.

A distinctive kind of mano dating to this period is the stirrup-shaped type (Fig. 33). No whole examples were found, but fragments were fairly numerous in the Zoned Bichrome II components of the 7-SL, 20-CB and 5-ZT sites. Although most stirrup manos of this period are large and plain, some have small zoomorphic effigies carved on the upper corners. The tool was probably grasped in both hands and used in a rocking motion.

Pestles

Characteristic of the Zoned Bichrome II Period are ground stone pestles with emphatically flared heads; the handles of such tools are frequently decorated with small carved zoomorphic effigies, mostly mammals or birds (Fig.33). Interestingly, the small worn-down area in the center of the "ceremonial", rimmed metates corresponds well with the size of the pestles. The pestles themselves are often carved from rock of a noticeably reddish or greenish hue, as well as the usual andesitic grey; perhaps only certain colors of stone were used in the ritual grinding of this or that special substance. Pestles of this type were found frequently in the 7.1-SL cemetery, and fragments were common in the fill throughout the site. To judge from the number of pestles with the flared flange broken away, these tools were commonly used with a strong pounding stroke.

Occasionally, larger and cruder undecorated pestles were found.

Mace heads (Mazas)

These ground stone artifacts (usually about the size of a small apple) are most frequently made of volcanics, the same andesitic rock used for most metates and manos. A bi-conical perforation is typical. Apparently these objects were mounted on sticks as a kind of club head; many have been carved with knobby projections left on the surface. These "functional" examples have not been found in twos or threes to date, which makes it unlikely they were tied on cords and used as "bolas". Finely carved and polished examples of quartz and calcite,

usually decorated with zoomorphic effigies, are known from sites of this period in the Central valley and Guanacaste (Hartman 1907), frequently associated with high quality jade pendants. These may well have been representative of politico-religious power, somewhat like European kings' maces and bishops' mitres were.

Lapidary art in jade

The Zoned Bichrome II Period and the early part of the Transitional Period represent the apogee of lapidary art in precolumbian Costa Rica. As was the case in most Mesoamerican cultures, jade and other greenish stones were highly valued and often worked into jewelry. Easby's 1968 book on Costa Rican jade is still the best reference. Her suggested rough chronology for jade working in Costa Rica has been confirmed by the author's research to date; jade, indeed lapidary work of any kind, seems to diminish rather sharply around AD 800-900 in the Atlantic watershed. No sources of raw material have been found; it is conceivable that they were virtually exhausted, an hypothesis that is supported by the abrupt cessation of jade working.

Jade beads from eastern Costa Rica may be disk-shaped, cylindrical, rectangular, barrel-shaped, spool-shaped, triangular (tooth-shaped) or rarely round. Pendants are usually carved into zoomorphic and/or anthropomorphic effigies; the most typical is the so-called "axe-god", wherein the effigy figure is perched on, or incorporated into, a celt-like blade. Most effigies are avian or human-avian, but frogs, alligators, monkeys and rarely, felines, also occur. Some pieces show a human figure bearing a staff and crowned with tiny avian motifs. The

polished quartz and calcite mace heads mentioned above may have been used in this fashion. Costa Rican jade work is notably three-dimensional, almost sculptural; in this regard it resembles Olmec carved jade much more than the low-relief jade plaques executed by Mayan lapidaries from Preclassic times forward. The similarity can be noted as well in the raw material; Olmec and Costa Rican jades are often blue-green, while Mayan jade is usually a lighter apple green. Nevertheless, no classic Gulf Coast Olmec jades are known from Costa Rica which have not been reworked to some degree, giving little support for a direct Olmec presence in the country (Anatole Pohorilencko, personal communication). Discussion of this topic is fruitless for the time being, in view of the lack of scientifically excavated examples.

Costa Rica lapidaries during the Zoned Bichrome II Period probably used perishable tools of wood, bone and hide (with various grades of quartz abrasive) to work jade (Easby 1968). Bi-conical perforations characterize both beads and pendants. Jade tubes up to 20 cm long, longitudinally perforated, are known; tubes of the softer tiza or green stone may reach 40 cm or more. The practice of dividing and reworking jade pendants was common, probably so that a portion could be buried and a portion kept by survivors.

Jade beads and pendants were found at the sites of 7-SL, 18-LM, and 20-CB (El Bosque component) (Fig. 14-53). Associated pottery was either of the El Bosque complex or the La Selva complex, which carries on into the Transitional Period. In most cases, jade articles were associated with the ceremonial rimmed matates described previously, usually being found below them. In some cases, other ritual paraphernalia such as

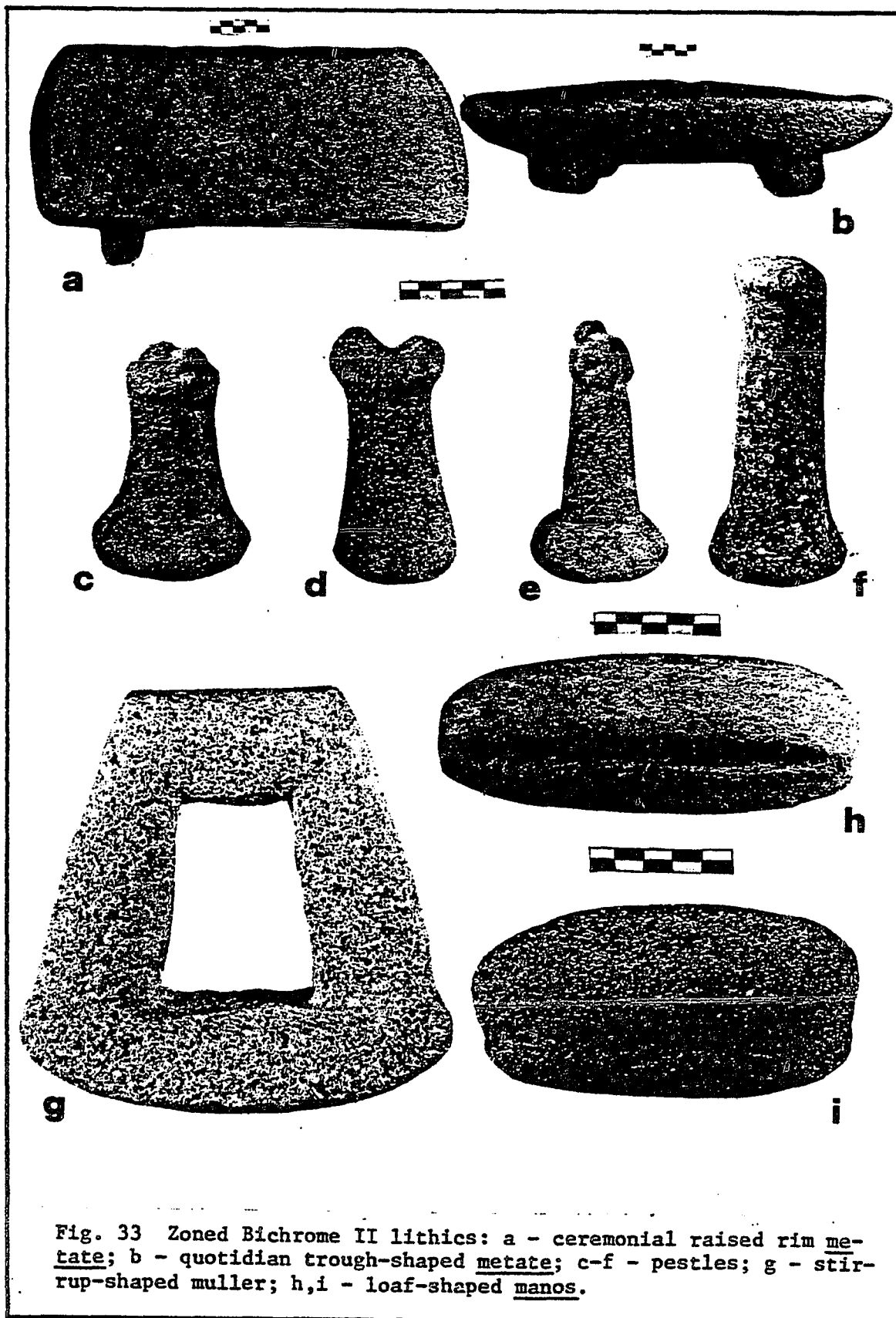


Fig. 33 Zoned Bichrome II lithics: a - ceremonial raised rim metate; b - quotidian trough-shaped metate; c-f - pestles; g - stirrup-shaped muller; h,i - loaf-shaped manos.

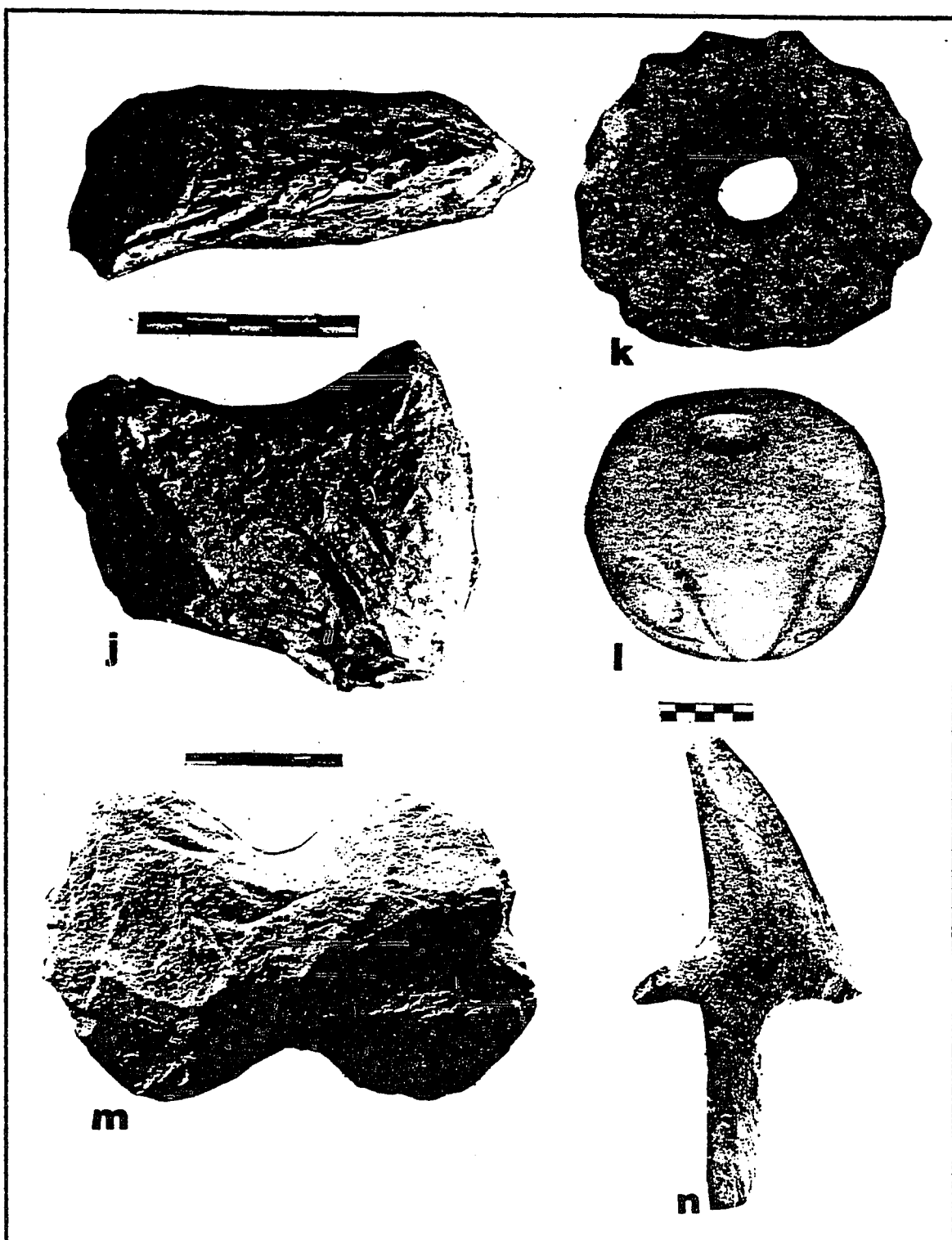


Fig. 34 Zoned Bichrom II lithics: j,m - double-bitted, waisted axes; k - rough volcanic mace head; l - polished quartz mace head; n - chipped and polished "spear point".

ocarinas, stamps and highly polished axes were also associated. It can be said that worked jade is most often associated with high or special status interments.

Settlement Patterns of the Zoned Bichrome II Period

As a systematic site survey has not yet been carried out in the Atlantic watershed of Costa Rica, little can be said at this point about what has been called macro-settlement pattern. The quantity and extension of Zoned Bichrome II ceramic and lithic debris is remarkable in certain localities; it forms a virtually uninterrupted band more than 2 km long between the sites of 20-CB, 21-MOPT and 7-SL, for example. Within this band are at least five cemeteries measuring approximately 20,000 m² each, if one can judge by looting activities. Yet, to date, only one barely noticeable living mound has been discovered. To produce cemeteries of this size and the amounts of refuse observed, many hundreds of people must have lived for hundreds of years in the vicinity, although apparently not in nucleated villages like those which developed after AD 1000 on the Atlantic watershed. For now, it can only be said that settlements of this period were sedentary, dispersed, and agricultural, with little emphasis on architecture; village plan may have been roughly linear.

House Form

Data on house form are still very incomplete, the best example being located only very recently (January 1978). This is a structure located at the 7-SL site, whose only surface indication was a very

slight earth mound, less than 1 m in height. Test trenches revealed lines of river cobbles (20-50 cm) which are thought to correspond with former walls made of perishable materials.

When clearing operations were completed, the Severo Ledesma house (7.1-Mound 1) was seen to be rectangular, with a probable roofed area of 15 x 20 m. It was divided into long rectangular "rooms" of about 15 x 6-7 m, two of which were reasonably clear of stones inside. The center compartment was packed with cobbles, many of which had fallen from the adjacent walls. Beneath the dislodged stones, however, there appears to be a floor paved with smaller, flat cobbles. This center section may have been a patio or activity area; excavation of it is still going on at the site.

Outside the walls on the shorter sides of the rectangular house are bank-like concentrations of cobbles, sloping down from the wall itself. At regularly spaced intervals in this feature are sinkholes left by the disappearance of large (20-30 cm in diameter) standing timbers; the stones packed in around them originally have slipped into the hole and are now on edge. Several other similar sinkholes have been located inside the house, but others appear to have been obliterated. A looter's trench crosses the center, stone-filled compartment perpendicularly.

The entrance to the house appears to be at the lower left in Fig. 28. No obvious passageways between the rooms have been discerned. Sections of the smaller cobbled floor observed in the center compartment appear as "islands" in different parts of the empty rooms - this

may represent the living floor of the house. No hard packed earth surfaces were observed as the house was cleared, nor have any hearths been found. They may have been outside the house or in the as yet unfinished center section. Although several fragments of broken metates, manos and volcanic cores were found scattered throughout the inside of the house, there were no obvious concentrations of tools or waste which might indicate specialized activity areas.

A burial or cache of two El Bosque vessels was unearthed beneath what has been called the doorway or entrance to the house. Very recently a second deposit consisting of a broken metate and two polished greenstone celts was found at 65 cm below the surface in the upper right hand compartment as seen in Fig.28 . Tentatively, it has been hypothesized that the cobble floor which probably covered most of the house interior was taken up and reused to construct burial features within the house itself, perhaps when it was abandoned. It was very interesting to note the relationship between the floor plan of this house feature and the layout of El Bosque complex tombs in a cemetery 75-100 m to the west: many of the tombs are likewise laid out in adjoining rectangles or corridors, but in miniature, usually 2-5 x 1.5 m.

Another house foundation dating to the Zoned Bichrome II Period was partially uncovered at the 9-FG site near Turrialba in 1975. Exposure of the feature was not completed because the owner of the farm denied permission to continue uprooting newly planted sugar cane. At this site, the stone lines were composed of smaller cobbles, several pairs of which were found embedded on their edges, parallel to each other along the axis of the stone line. It is thought that these

braced wooden poles used in the house construction. In one of the lines, a circle 35 cm in diameter was formed by several cobbles, perhaps to brace a larger timber, as was observed in the house at the 7.1-SL site.

Unfortunately, no corners were exposed, so the shape of the house at 9-FG remains uncertain. The dimensions of the scatter of rounded pebbles which indicated the feature in the plowed field was approximately 20 x 30 m, in reasonable agreement with the size of the house feature at 7.1-SL. Exposure of the stone alignments revealed drifts of the rounded pebbles along and between the lines; it is suggested that these pebbles were a kind of temper in the "daub" component of a potential wattle and daub construction that was built over the stone foundations. Such a technique is still to be observed in the mud walls of colonial-type houses standing today in the form of pebbles or broken bits of roof tiles which were embedded in the soft adobe matrix enclosing upright cane poles, presumably as a strengthening filler. Two other similarly sized concentrations of pebbles were observed in the plowed field at 9-FG, 50-75 m apart; these were not excavated, but give the only scant clue as to the distribution of houses in a Zoned Bichrome II settlement. The presence of the flint source at the site may mean that the 9-FG settlement was primarily a workshop, and thus not "typical"; the quantity of ceramic debris and some metate fragments argue against this interpretation, however.

The most striking difference between the house features at 9-FG and 7.1-SL is the nature of the stone lines; superficial, poorly defined and close together (about 1 m) in the case of the former, and deep,

wall-like and much farther apart in the latter. The different distances between the lines might be explained by either a functional or a temporal difference. The ceramics surface collected at 9-FG seem somewhat earlier. Likewise, the height (or depth) of the walls at 7.1 could be explained by a possible later role as a funerary feature often characterized by sub-surface walls. As sterile subsoil begins only 30-40 cm below the feature at 9-FG, it can be said with certainty that it is not a tomb.

Funerary Features

It might well be said that the real architecture of the Zoned Bichrome II and Transitional Periods is underground. Extensive cemeteries, most of them covering 5 to 20 acres, are typical, the tombs themselves being fairly elaborate constructions of rounded river cobbles. The basalt and andesite cobbles, some of which weigh more than 100 kg, were usually carried from river beds anywhere from 50 m to several kilometers distant.

Three forms of tomb construction have been observed for the Zoned Bichrome II Period. The first (Fig 130) is a rectangle, usually 2-3 m long and 1-2 m wide. The cobbles forming the rectangle are sometimes laid flat, in two or more layers; other times they are stuck in vertically around the tomb outline, again in a double row but side by side, not on top of each other. Since no bones have yet been found for this period, it is not known if this has to do with a variable like the age or sex of the individual; there is no marked difference in the grave goods. Frequently, these kinds of tombs are found in clusters, in

which adjacent units share a common wall along the long axis.

The second form of tomb, found in El Bosque complex cemeteries, is ellipsoidal, usually 2-2.5 m long and 1-1.5 m wide. It is also delimited by a double row of river cobbles (and often broken metate fragments) placed on end. These kinds of tombs have not been observed in clusters joined side by side, but rather seem to have poorly defined ovoid niches or pockets of smaller stones attached around their perimeters; grave goods are sometimes found in these pockets, outside the main tomb. Occasionally, a single line of stones leads from the extremity of such a tomb to that of another similar feature.

The third variety of tomb known for this period takes the form of a long corridor (Fig. 127), from 3-12 m in length and 1-1.5 m wide. The cobbles lining it are usually placed flat in many layers which extend almost to the floor of the tomb 1.5-2 m below. They do not form a near, well-built wall like those which characterize tombs of the Stone Cist Period, but instead spill over into the center, perhaps intended as a protective fill. Grave goods may be found anywhere along the length of the tomb and at various depths. These tombs also occur in series, sharing the long axis wall. In the Zoned Bichrome II component at the 20-CB site, an exceptionally long example of this tomb type displayed a technique of wall construction seen with much greater frequency in the Stone Cist Period. It consists of large, flat cobbles placed vertically and edge to edge along the whole length of the corridor, forming two walls which extend from the bottom of the tomb to about half its depth. On top of these vertical stones are built two other walls, but of smaller cobbles placed in 2 - 4 horizontal layers which

reach to within 20-50 cm of the present land surface. This technique (better executed) was observed at site 5-ZT near Turrialba, in early Stone Cist Period tombs.

As the tombs of the Zoned Bichrome II Period were located more than two years prior to the discovery of the first house feature of that period, the following working hypothesis was formulated at that time: The general shape and layout of tomb features which incorporated river cobbles in their construction would reflect prevailing house forms of the period in question. The hypothesis was based on the observed relationship between Stone Cist Period houses and tombs (both known then) and the Spanish chronicles, some of which describe the practice of constructing small houses over the underground tombs (de las Casas 1961 II: 58-59).

The discovery of the rectangular house feature at 7-SL in January 1978 gratifyingly confirmed the hypothesis; the 7-SL house represents the only house form known for the Zoned Bichrome II Period in Costa Rica, and perhaps all of Lower Central America. It remains to be seen if the 7.1-SL house feature is typical of the period, or if other varieties (perhaps smaller) existed. Also unclear for the moment is the extent to which houses (or the stones used in their construction) were reused as funerary features. The scattering of broken household and ceremonial articles over Zoned Bichrome II and Transitional Period graves has been observed at many eastern Costa Rican sites.

Subsistence of the Zoned Bichrome II Period

For the most part, the subsistence base of the Zoned Bichrome II

Period can be discussed only indirectly and tentatively. The acid soil and heavy rains of eastern Costa Rica have left only the most fragmentary of carbonized organic remains. It has long been said that the Atlantic watershed peoples had as staples root crops like manioc, ñame, tiquisque, and the protein-rich palm fruit pejibaye, all of which supposedly require the addition of water in their preparation, hence the raised rim around the edges of the stone grinding tables (Stone 1966). We have seen, however, that the raised rim metates were not those used in everyday food preparation, being instead reserved either for special occasions or for the processing of substances other than food. The ovoid quotidian metates are usually rimless, although trough-shaped. Other evidence which casts doubt on the rimmed metate-root crop deduction comes from the Stone Cist Period (AD 1000-1500): although yuca (manioc) is mentioned by almost all the Spanish chroniclers who visited Costa Rica, none of the archeological grinding stones of that period, ceremonial or everyday, is rimmed. It should be remembered, too, that the flat ceramic griddles (budares) which characterized the La Montana ceramic complex do not appear in the El Bosque complex of the Zoned Bichrome II Period.

The loaf- and stirrup-shaped mullers of this period suggest that the comestible they were used to process required a slightly rolling, crushing motion - more apt for seeds or grains than bulky tubers. The flared head stone pestles were definitely used with a hard, crushing blow, suggesting that a small, resistant material was being processed. Nevertheless, manioc and other root crops (standard tropical forest fare even today) probably were used, perhaps without much processing.

Yuca eaten today in eastern Costa Rica is sometimes out of the ground, skinned and into the pot in less than 15 minutes. The precise use to which crushing implements were put cannot be determined facily; one broken fragment of a stirrup muller found at the 7-SL site had red ochre embedded in the crushing surface, having apparently been used to prepare the pigment of the characteristic red slip of EL Bosque pottery.

The only concrete evidence of subsistence practices in the Zoned Bichrome II Period recovered to date is a carbonized maize cob fragment 27 mm in length from level 8 (140-160 cm) in pit 7-5 at 7-SL. Other charcoal from this and the three preceding levels was subsequently dated to 1605 ± 165 radiocarbon years: AD 345 (I-7514) (Fig.31e). The cob was submitted for analysis to Dr. Walton C. Galinat of the University of Massachusetts, who identified it as an 8-rowed member of the South American race Pollo. Pollo has been cited by Roberts and others (1957) as the most primitive race of maize in Colombia. The oldest maize cobs recovered in the region of Ayacucho, Peru, also show Pollo-like characteristics (Galinat 1972), and archeological Pollo dated at 1820 ± 130 radiocarbon years: AD 130 (Wagner and Zucchi 1966: 37) has been found at the site of La Betania in Venezuela. It has been suggested that Pollo is ancestral to the race Confite Morocho from highland Peru (Roberts and others 1957; Galinat 1972), with the latter race perhaps deriving from Tripsacum introgression into a Pollo-like com. The trait of Confite Morocho for slender elongate internodes in the rachis also occurs in other South American races such as Coroico and Piricinco, but is absent in the indigenous maize of Mexico, including the oldest cobs from Tehuacan (W.C. Galinat, personal communication).

The appearance of maize cultivation in the Atlantic watershed region of Costa Rica has heretofore been linked to Mesoamerican influence in the late prehistoric period (Stone 1956). Although noting that the ethnohistoric tribes of eastern Costa Rica probably knew maize (their word for it is related to the Chibchan, not the Mexican term), Stone (1956: 192), observing their diet, vocabulary and myths, hypothesizes that "the introduction of maize can be dated from the advent of the first Mexicans in this region". The ancient Pollo corn cob from 7-SL contradicts this hypothesis on two counts: (1) cultivated maize was first present in eastern lowland Costa Rica at the latest during the first few centuries after Christ; and (2) Pollo is related to South American and not Mexican races. Another race of maize currently found in Costa Rica, Clavillo, is also regarded as an ancient introduction from South America, resembling the Colombian race Clavo (Wellhausen and others 1957: 115). In fact, botanists have determined that the majority of maize races throughout Central America and especially in Guatemala are derived from South American antecedents (Wellhausen and others 1957: 126). In light of this, it seems incongruous that the occurrence of archeological maize in the Intermediate Area should still be considered as indicative of Mesoamerican influence (Coe 1962: 170-171; Willey 1971: 350, 490-491; Stone 1972: 9).

Although most hypotheses point to southern Mexico-Guatemala as the area of earliest maize cultivation (Mangelsdorf, MacNeish and Willey 1964: 438-439, 442; Leon 1968: 146-147), the possibility of multiple centers of domestication in both Middle and South America cannot be ruled out (Mangelsdorf and Reeves 1959: 420-423), and a later route of

diffusion for agricultural maize, sometime during the first or second millenium BC, may have carried it up through the Andes and into the Caribbean area (Sanders and Marino 1970: 85-86). Indeed, some authorities suggest that the arrival of superior maize races from South America may have accelerated the development of civilization in Mesoamerica (Mangelsdorf, MacNeish and Willey 1964: 439).

The only other carbonized floral material from 7-SL that could be even tentatively identified included grass stems, palm charcoal, and "dicotyledonous charcoal, diffuse and porous, with many rays; possibly Leguminosae" (C. Earle Smith, personal communication); all came from the lower levels of pit 7-5.

Lastly, a preoccupation with riverine fauna in El Bosque ceramics should be pointed out: adornos in the form of turtles, crabs, alligators, lizards, frogs, snakes and even the manatee, are frequent. This is not surprising in a region where rivers and streams abound, yet many of these motifs do not continue into later periods. The dentate shell stamping seen in Middle Formative and Zoned Bichrome I and II pottery (which also fails to persist in succeeding ceramic styles) was apparently done with the edge of a sea shell, although no shells have been recognized due to poor preservation. This decorative mode suggests a history of marine or estuary associations, even though it is found (associated with Zoned Bichrome II and earlier ceramics) throughout the Atlantic watershed and into the Central valley. If shells were brought inland, was there a seasonal coastal exploitation pattern? The answer to this must await further research.

Summary and Chronology

The Zoned Bichrome II Period is characterized by predominantly red on buff pottery (El Bosque complex), whose forms include tripod tecomates with an expanded exterior lip, large ollas with both expanded and non-expanded lips, composite silhouette bowls (often with a basal flange), flat bottomed pans, dishes with conical supports, and long legged tripod jars with both solid and hollow supports which are usually adorned with zoomorphic effigies. Figurines, ocarinas, whistles, and pottery stamps are also typical.

Lithic artifacts include infrequent flakes and cores of flint, chert or a similar stone, chipped and ground double-bitted axes, bi-conically perforated mace heads of volcanic rock as well as polished quartz, and carved beads and pendants of jade and other green stones. Rectangular and circular rimmed tripod metates, many with carved figures along the legs and lower surface, are thought to be ceremonial artifacts. Ovoid short-tripod grindstones and loaf-shaped manos (mullers) were used for day to day food processing.

Settlements were dispersed, but sedentary and agricultural, apparently with large multi-family rectangular houses. Tombs were rectangular, ovoid or corridor-shaped, probably reflecting the prevailing house shape; ceramic, ground stone and jade grave goods are typical.

Subsistence was probably varied, incorporating maize, manioc, other root and tree crops, as well as riverine protein and limited hunting. Riverine and marine fauna appear frequently as decorative

motifs on El Bosque pottery.

A markedly stratified and ritual-oriented society is indicated by a comparison of funeral offerings, yet monumental or "public" architecture is virtually absent. Persistence of so-called "Preclassic" or "Formative" traits into what are Protoclassic and Classic time periods in Mesoamerica may be a function of the lower optimum population levels associated with efficient human ecology in tropical rain forests.

Radiocarbon dates associated with Zoned Bichrome II (El Bosque Complex) ceramics

The first date in parentheses is based on the Libby half-life of 5568 years, while the second has been calibrated using the Suess curve to give calendar years.

1. 1800 ± 60 C14 years: (AD 150) (AD 200) UCLA 2113-H.

Site 20-CB (La Cabana), Tomb 1: charcoal dispersed in the fill of corridor-shaped tomb complex containing broken and strewn (but complete) El Bosque pottery, tiny bits of broken jade beads, rimmed, rectangular metate fragments and stirrup-shaped mullers.

2. 1605 ± 165 C14 years: (AD 345) (AD375?) I-7514.

Dispersed charcoal from levels 5-8 (80-160 cm) in stratigraphic pit 5-7 at 7-SL (Severo Ledesma). The upper levels of the pit yielded Transitional Period pottery.

3. 1525 ± 185 C14 years: (AD 425) (AD 450?) I-7721.

Dispersed charcoal from level 3 (40-60 cm) of shallow stratigraphic pit 41-1 at 41-FP (Finca Patricia). This was a single component El Bosque site.

4. 1211 ± 60 C14 years: (AD 740) (AD 775-850) UCLA 2113-F.

Dispersed charcoal fragments from Tomb 2 at site 20-CB (La Cabana), a long corridor-shaped tomb strewn with broken El Bosque pottery and jade but no whole vessels. Transitional Period (Madera Complex) sherds appeared in the fill of this tomb; it may have been looted or contaminated in prehistoric times.

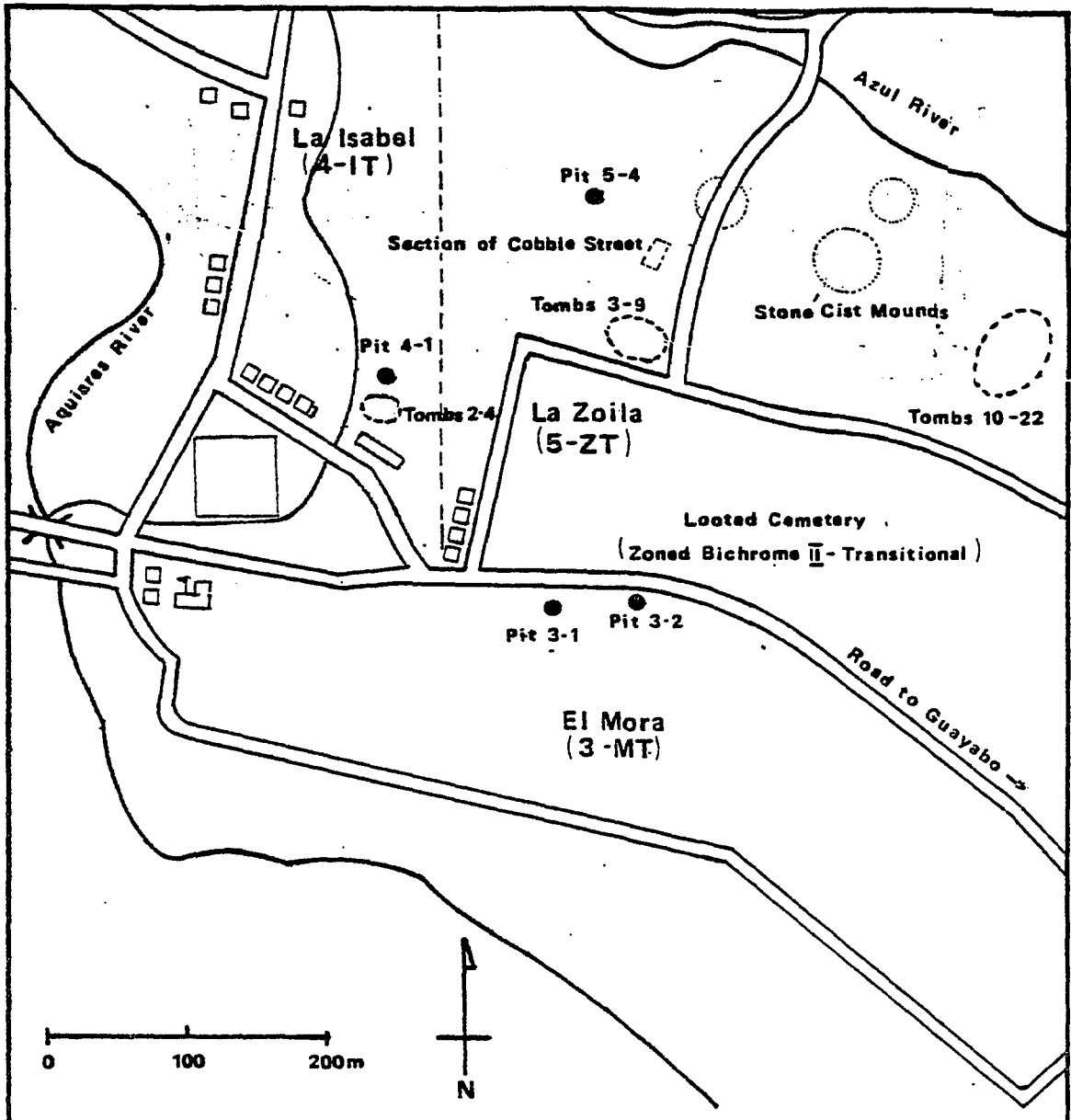
CHAPTER 8: THE TRANSITIONAL PERIOD (AD 500-1000)

Sites and Setting

Of the fifteen hundred years from the time of Christ to the Spanish Conquest, the Transitional Period (AD 500-1000) represents the span of time least well understood in eastern central Costa Rica. In terms of the author's investigations, this lack of insight is simply due to the paucity of sites discovered and worked, in all probability a function of faulty sampling strategy. That sites of this period are fairly plentiful is evident from a perusal of the radiocarbon dates published by Kennedy (1968: 106) from the Reventazon river valley: virtually all of them fall between AD 400-1000. Kennedy, on the other hand, had difficulty in finding and dating sites of the Zoned Bichrome II Period, which the author found to be numerous and large.

The location of the La Montana site (18-IM) near Turrialba has been described in Chapter 6. The extensive cemetery at La Montana was probably in use during the last half of the Zoned Bichrome II Period through the first two or three hundred years of the Transitional Period. Although some El Bosque Red on Buff pottery was found in the fill of the cemetery, neither it or any other ceramic groups of the El Bosque complex were found as grave goods; these were invariably types and groups of the La Selva complex, more typical of the early Transitional Period.

The lower levels of two stratigraphic pits at the Finca Numancia



EI MORA (3 - MT), LA ISABEL (4 - IT),
LA ZOILA (5 - ZT) SITE COMPLEX

Location of Excavations

Fig. 35

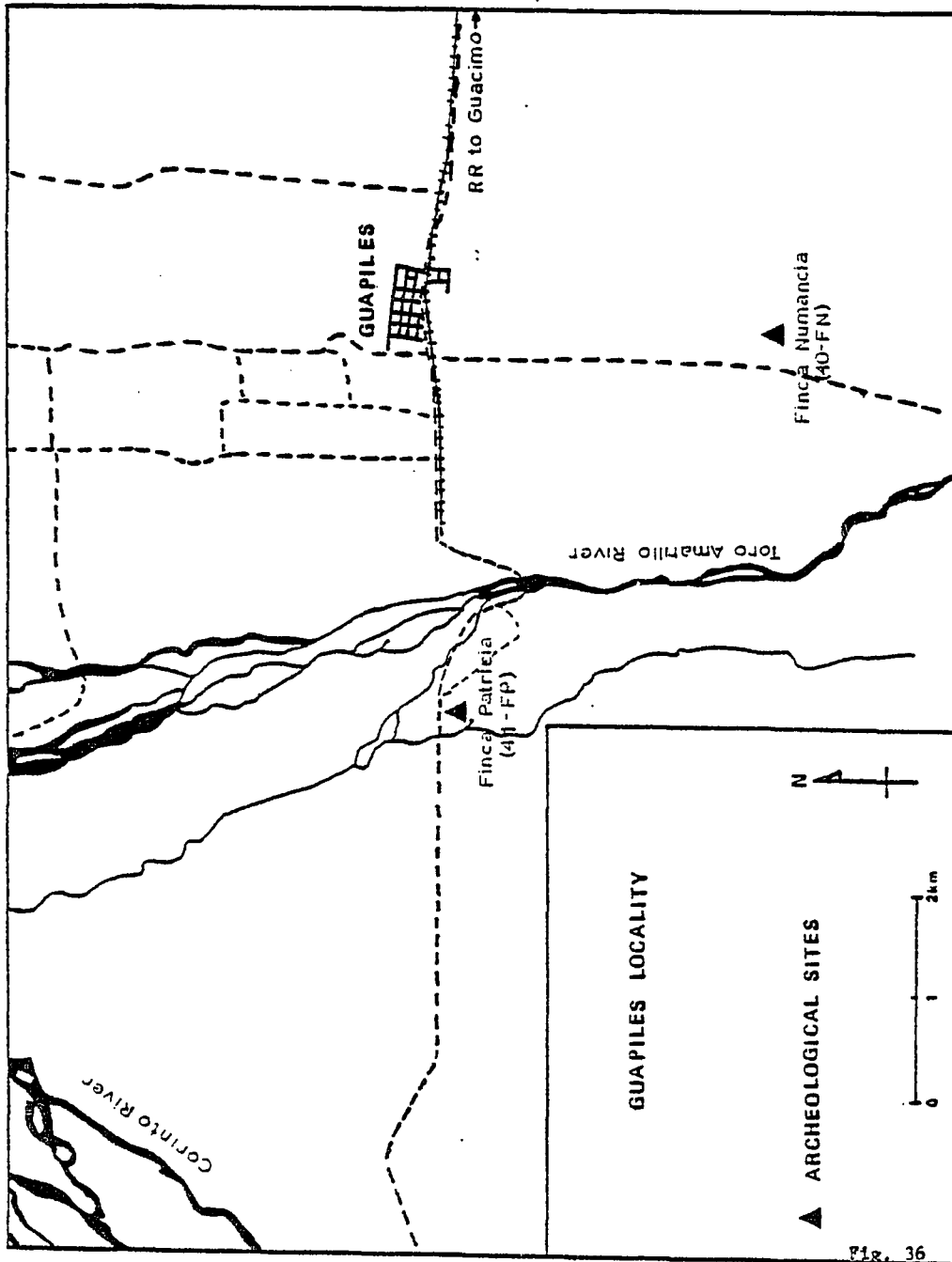


Fig. 36

site (40-FN) near Guapiles also produced evidence of a Transitional (La Selva) component. The pits were dug in hilly pasture land with many springs and small creeks. Like the 20-CB site, 40-FN is located on the first fairly flat plain at the eastern foot of the hills leading to the Turrialba and Irazu volcanoes.

At Severo Ledesma (7-SL), the uppermost levels of pit 7-5 yielded late Transitional sherds (Madera Complex). This pit was excavated in 1973 and is located 100-300 m from the Zoned Bichrome II features at 7.1-SL described in Chapter 7.

Test pits and limited tomb excavations at the Turrialba sites of La Isabel (4-IT) and La Zoila (5-ZT) also produced Transitional materials. These sites have also been described in Chapter 7.

Excavations and Stratigraphy

As was noted in Chapter 6, the 18-LM site contained a large cemetery which had been much looted in the surrounding cane and coffee fields but was untouched (except by plowing) in the section of CATIE experimental agricultural plots where we conducted our excavations. Permission was given to dig in a belt of unplanted land of some 15 x 80 m between the experimental plots and a coffee field. When work began in 1976, we only knew that the 18-LM tombs incorporated rounded and rather flat river cobbles which had been left on the surface by looters in adjacent fields; the actual shape and layout of the mortuary features were unknown. The cobbles themselves weigh from 10 to 100 kg and were almost certainly brought from the bed of the Reventazon river,

more than 1 km away.

First, two 10 x 1 m trenches were opened in order to ascertain the depth of the tomb features. Lines of cobbles were discovered at depths from 20 to 40 cm; they were laid flat in rows one to three layers deep. The CATIE foreman at the site said that many similar cobbles, perhaps hundreds, had been removed from the site when the land was originally cleared and plowed, which suggests that the rows may have been more in the nature of walls. Several rows were followed and exposed in an irregularly shaped excavation called Sector 1. Sometimes the space between the rows was completely filled by a concentration of similar cobbles (Fig.135). Interestingly, the burials themselves (indicated by grave goods only; no bones or teeth were preserved in the acid soil) did not usually lie beneath these concentrations, but rather in the spaces left open between the rows, 1-1.5 m wide in Sector 1. Most of the rows continued into the experimental plots, so their length could not be calculated; it was at least 5 to 10 m.

Upon completion of Sector 1, another area of tomb features was exposed immediately to the west (Sector 2) and a 2 x 2 m stratigraphic pit was excavated 20 m to the east, in an effort to determine the extent of the cemetery. It was in this pit that the La Montana Middle Formative sherds described in Chapter 6 were first noticed.

When the topsoil was peeled back in Sector 2, a different kind of mortuary feature was revealed. Instead of parallel rows of flat cobbles, a sort of street or rectangular platform had been constructed,

half of rounded flat cobbles and half of lajas, the distinctive volcanic flagstone-like rock which can be found exfoliating from basalt dikes in many Costa Rican localities. To one side of the "street" lay an amorphous concentration of cobbles.

The use of lajas in tomb construction is a trait found almost exclusively in the Stone Cist Period when they were often used as "lids" on the cist tombs constructed of rounded cobbles. Their inclusion in the Sector 2 feature suggests that it is indeed transitional between the Zoned Bichrome II corridor-like tombs (where lajas never occur) and the succeeding Stone Cist Period. Further evidence of this was a Sector 1-type cobble line to the northeast which was interrupted and partially removed where the laja portion of the Sector 2 feature overlapped it suggesting (Fig. 136) a later construction date for Sector 2.

When the laja-covered portion of Sector 2 was removed, three separate groups of grave goods were exposed. They included vessels of the Africa Tripod Group which differed in style from those found in Sector 1. Below the interrupted cobble line were found a ceramic tripod vessel and a large round platter of the style found in Sector 1; they had been disturbed and broken, the platter cut in half, and the tripod fragments scattered over a 1 m area, apparently as a result of the later excavation of the laja-covered tomb feature.

The other end of the rectangular platform, that constructed of cobbles, terminated in a carefully laid straight line of stones of uniform size. Just beyond this line lay a heap of fragmented tall

tripod vessels apparently broken intentionally. They were of the same style as those in the laja-covered portion of Sector 2 (Fig. 136B). This interesting discovery suggests that a ceremony involving the ritual breaking of ceramic vessels was carried out at the conclusion of the funeral, something that would be quite in keeping with the roisterous chicha-drinking feasts which accompanied funerals in both prehistoric and historic times. Further, the deposit of broken vessels indicates that ceremonies were carried out upon the street-like cobble and laja feature itself, which in turn suggests that the feature was visible and above ground; the same thing probably holds true for the parallel cobble lines. The 18-LM cemetery, then, may have consisted of tomb constructions which were partially visible (and probably recognizable individually) like those of modern western cemeteries. As scaled down house-like crypts and other quasi-architectural features are frequently included in modern cemeteries, the 18-LM tombs may have been covered by pseudo-house structures, a custom observed by the Spanish in Atlantic Costa Rica some 1000 years later.

From December 1976 to March 1977, a second season's work was carried out at 18-LM. With an eye toward exposing living features in the Middle Formative stratum which lay below the Transitional cemetery, a larger (13 x 22 m) excavation was opened. The tomb features, again parallel cobble lines, were first exposed for drawing and photography (Figs. 137A, 139). It was noted that in this sector of the cemetery the lines were farther apart, usually 2.5 m, and averaged 6-7 m in length. One side of a stone line was always straighter than the other, suggesting that perhaps individual tombs corresponded to only one line of

Stratigraphy at La Montaña (18-LM)

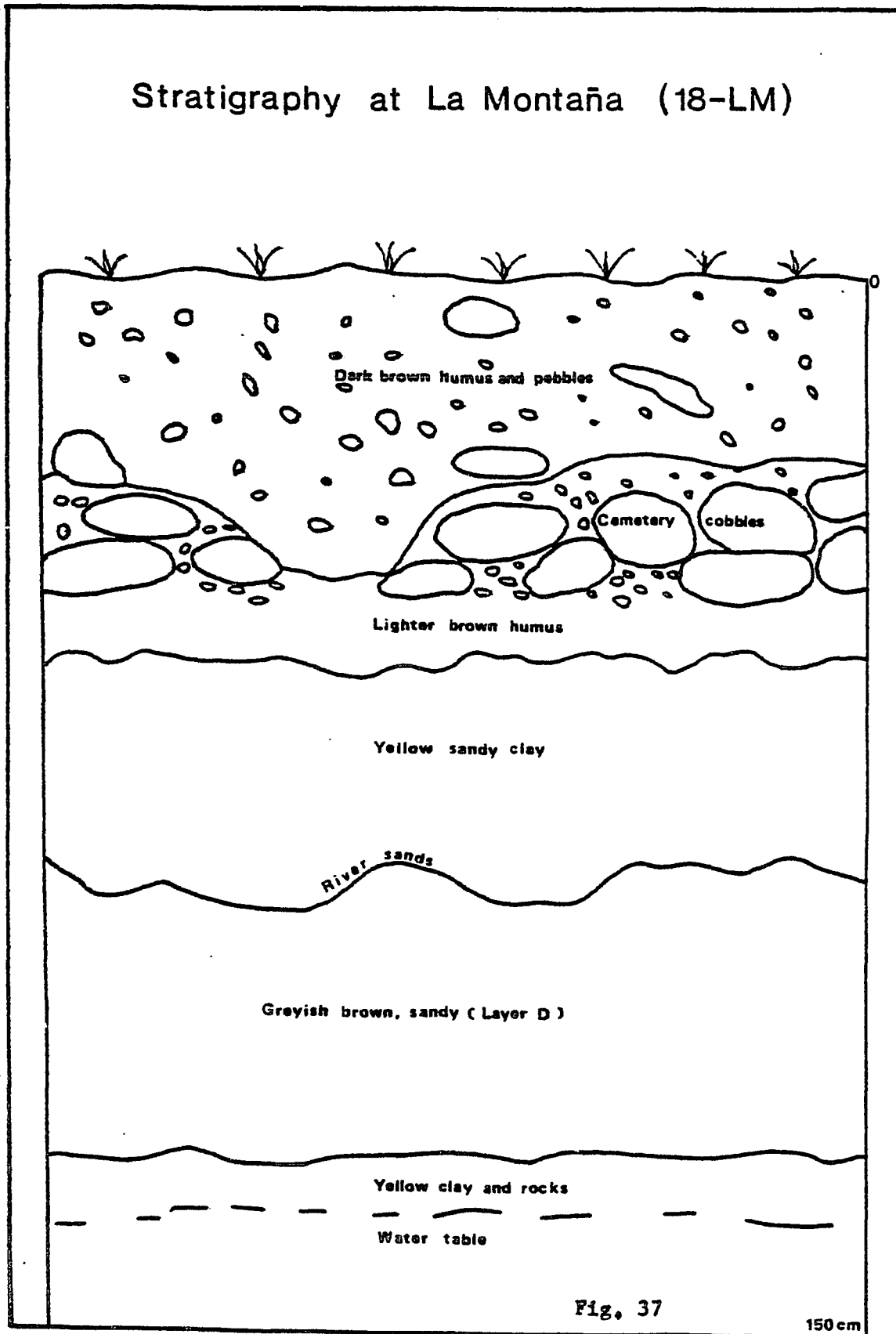


Fig. 37

150 cm

Stratigraphy of Pit 40-2 La Numancia

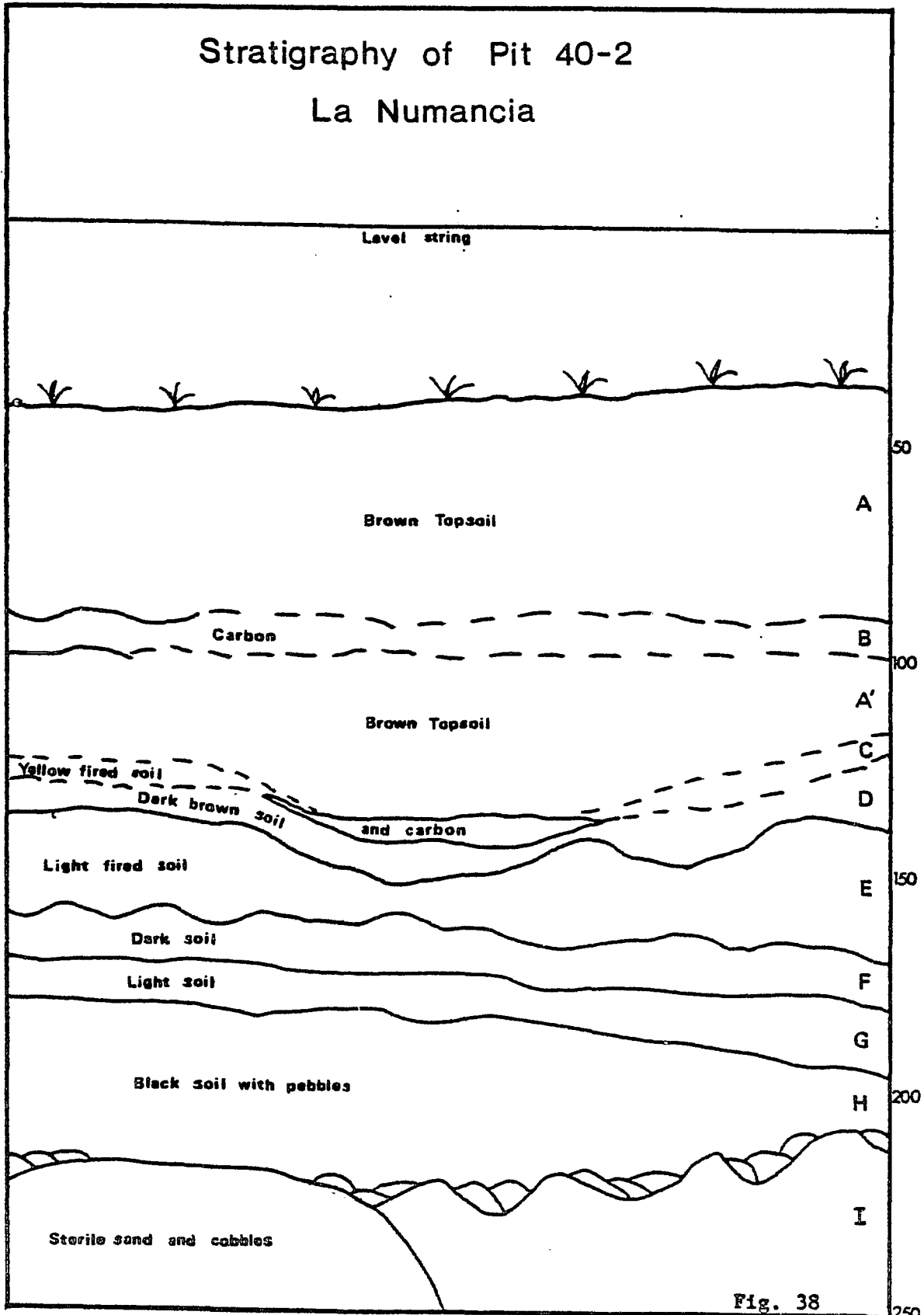


Fig. 38

250

stones; the body would have been placed on the straight side, the uneven length of different stones being accommodated in the earth fill. Seeing the line, the next tomb builder would know which side the body was on, and thus how far away he should build the next line. Because of the size of the excavation, a second file of stone lines was observed to the southeast. They were generally deeper, less long and invariably made of rounded river cobbles. The file of tomb lines to the northwest included several lines formed by jagged, unrounded field stones. In some places the two files of lines overlap slightly, like the black and white keys of a piano. Because of its more perturbed state and the presence of a few El Bosque-like vessels, the southeast file is tentatively thought to be older.

All the stone tomb lines exposed in the cemetery, whether in Sector 1, Sector 2 or the 1977 excavation, were oriented between 55° and 65° west of north, along the long axis. The only other stone line observed was a perpendicular one in the northwest part of the 1977 excavation, which was obviously a terminal or head line connecting a series of 7 x 2.5 m rectangular spaces. It was interesting to note how segments of this line deviated slightly when new perpendicular tomb lines were added to it, suggesting that several separate interments used the same line as a guide but did not build on to it at precisely the same angle.

As in Sectors 1 and 2, most grave goods appeared between or beneath the stone lines. The fill of the cemetery was thickly studded with water-rounded pebbles 1 to 10 cm in diameter. As these do not occur in the soil outside the limits of the cemetery, it must be

concluded that they, like the larger cobbles, were brought from river beds. It is likely that they were purposely introduced into the tomb fill to inhibit perturbations from above; the fill was notoriously difficult to excavate by hand and many trowels were broken. It was easy to distinguish the coarse tomb fill from the soft, sandy subsoil which lay adjacent and below (Figs. 136A, 136B).

As was discussed in Chapter 6, the La Montana site was flooded at a date prior to the construction of the Transitional cemetery. This flooding left occasional lenses of sand and river gravels; they were not encountered in Sectors 1 and 2, but did come to light in the final and largest excavation. The tomb builders seemed to avoid the lenses when possible; when they could not, grave goods were placed above the lenses, as little as 40-50 cm below the present surface, instead of the more usual 80-100 cm. A discussion of the artifacts in the cemetery can be found under funerary features in this chapter.

Finca Numancia (40-FN), near Guapiles, produced the best stratigraphy of all the sites excavated by the author. During the 1973 field season two 2 x 2 m pits were excavated in slight prominences adjacent to a small creek. It was discovered that, although predominantly natural features, the mounds had been increased in height by the addition of about 1 m of earth fill. Beneath the fill was a Transitional Period occupation, separated from the overlying Stone Cist materials by several nearly sterile levels. The stratigraphy in Pit 40-1 had been partially disturbed by the intrusion of two Stone Cist burials or caches, but Pit 40-2 showed a clear sequence of deposition. Zoned Bichrome II pottery was absent in the lowest levels of 40-2 allowing a

clear perception of several key ceramic modes and groups which had been suspected to be Transitional, but which were always mixed with Zoned Bichrome II material in other sites.

Unfortunately, work at Finca Numancia was cut short when the property changed owners and further excavations were forbidden. For this reason, adequate charcoal samples were not obtained, nor could we clarify the stratigraphy at the site by excavating additional pits in natural, visible layers instead of 20 cm levels. Nevertheless, the two components at 40-FN displayed as clear a stratigraphic relationship as that observed at 18-LM between the Transitional cemetery and the Middle Formative La Montana complex in Layer D.

As has been mentioned previously, the stratigraphy at the multi-component site complex of 3-MT, 4-IT, and 5-ZT, is considerably perturbed, at least as it was revealed in our test pits. The ceramics leave no doubt, however, that the locality was inhabited in all periods (Zoned Bichrome II, Transitional, Stone Cist) from around the time of Christ up to the protohistoric, perhaps continually. In addition to the heavy looting that has gone on at these sites for the last forty or fifty years, there were indications that the excavation of mortuary and other kinds of pits during prehistoric times had also served to re-deposit much artifactual material. Nevertheless, a general stratigraphy could be discerned in some pits. Although El Bosque sherds were dispersed through all pit levels as floaters, the deepest levels were usually El Bosque alone. A similar situation prevailed with Stone Cist Period pottery, generally confined to the uppermost levels except in late cemetery contexts. Transitional Period materials, as might be

expected, were found in greatest concentrations just above the bottom El Bosque levels. Under these circumstances, carbon samples were entirely untrustworthy, and they were usually not saved unless found inside vessels in an unmistakable burial context.

Still, some helpful data were gleaned from a stratigraphic pit at 5-ZT: a primarily Transitional level (120-140 cm deep) yielded several trade sherds from the Early Polychrome Period (AD 500-800) in northwest Costa Rica (Carrillo, Galo), helping to fix the associated Atlantic watershed ceramics in time. Early Polychrome trade pottery was encountered only very infrequently during the course of this study; imported polychromes from the late part of the Middle Polychrome Period of Greater Nicoya (AD 800-1200) outnumbered Early Polychrome sherds by more than 20 to 1.

At the La Isabel (4-IT) site, two tomb groups were excavated (Fig. 150,151). One was encountered during the excavation of a stratigraphic pit (4-1); this group proved to consist of a large, looted stone cist tomb from which a series of parallel stone walls radiated. Two complete and several fragmentary artifacts were found adjacent to the stone lines. It is thought that they represent tombs auxiliary to the larger one; the junctures of the lines with the sides of the stone cist tomb were carefully done and unperturbed, tending to refute the possibility that the cist tomb was intrusive into a series of earlier corridor-shaped tombs.

The second tomb group at 4-IT (tombs 2-4) also incorporated a large stone cist tomb that had been looted. Near it were several

smaller round cist tombs typical of the AD 1000-1500 period. Also adjacent were two rectangular tombs of a non-cist type; these were dug 30-40 cm deeper than the nearby cist tombs and both the grave goods and a C14 date from one of them suggest that they were earlier than the others, falling near the end of the Transitional Period.

Both tomb groups at 4-IT were excavated in a producing coffee field. Although the owners gave us permission to uproot several plants as the excavations progressed, we could not in good conscience expand the pit beyond the limits shown in the photographs; the finca had suffered heavy looting damage over the last thirty years. A series of stratigraphic pits at the site revealed multi-period cemetery fill, now considerably mixed.

Ceramic Complexes of the Transitional Period

The ceramic modes of the Transitional Period are a mixture of Zoned Bichrome II-related traits and those which reach their apogee in the succeeding Stone Cist Period. Two ceramic complexes have been tentatively defined: La Selva, which probably begins in the Zoned Bichrome II Period, perhaps in the third or fourth century AD (thus overlapping with the El Bosque complex) and dies out around AD 900; and Madera, which may begin as early as the seventh or eighth century AD and carries on into the Stone Cist Period, possibly as late as AD 1100. Although linked by certain key modes, these ceramic complexes are really quite dissimilar in appearance and probably represent significant cultural-spatial variation in the past. As it happened, the period of time associated with the Madera complex was one poorly represented in

the author's excavations, a fact readily evident in the seriation charts. This gap, like the one between Chaparron and El Bosque, must be clarified by future work.

Diagnostic Ceramic Modes, Types and Groups: La Selva Complex

Paste

The predominant paste (P5) in the La Selva complex is reddish-brown, sandy and granular, tending to crumble when not covered by slip. The color and sandy character of P5 distinguish it readily from the light buff El Bosque paste (P3) which usually has a fine, powdery matrix. The fine paste of the Santa Clara Figurine Group (P4) is also found in the La Selva complex.

One of the most distinctive pastes in the eastern Costa Rica ceramic sequence is P6, an extremely blocky-textured ceramic which characterizes the Turrialba Coarse Group. Less frequently observed are: P8, a less coarse version of P6; P9, an easily recognized paste incorporating white pumice chips and burnt organic material (P9 makes its first appearance in certain vessels of the Africa Tripod Group, but becomes much more popular during the Stone Cist Period); P7, the paste of Early Polychrome trade sherds; P10 and P11, both very fine grained, almost powdery pastes which are buff to light orange in color. While P10 has a very compact texture, P11 is noticeably vesicular, as if it incorporated some bits of organic material which burned out upon firing. Like P7, P11 is thought to represent pottery which was traded to the central Atlantic watershed, probably from sites nearer to the

coast and to the south. Recent surface collections from that sub-region have tended to confirm this hypothesis.

Surface Finish

La Selva pottery is most often finished with a red-orange to orange slip; sometimes zoned with purple, maroon, red or organic black pigments (SF7, SF9, SF10); red or reddish-brown slip (SF8, SF11) is also common. La Selva pottery is likely to have a more grainy or pebbly surface than El Bosque ceramics; this is especially noticeable in the Turrialba Coarse Group, where often only the vessel lip is slipped and polished, the rest of the body being covered by a dirty cream or greyish wash (SF12) through which the large non-plastic grains protrude.

Form

Several rim/vessel forms diagnostic of the El Bosque complex do not appear in La Selva pottery; they include R12 - R17. While the olla shape continues, its rim form changes to collared, outcurving silhouettes (R26, R27, R30, R37) or everted lips folded to the horizontal (R28). Many different kinds of bowls and plates are found in La Selva pottery, some with expanded, flattened lips (R25, R31, R34, R35), and others without (R29, R33, R36, R38). The tacomate, both with slightly thickened lip (R9, R20) and without (R19), is seen more frequently in La Selva than in El Bosque, although not approaching its Middle Formative popularity.

An important stylistic difference between the El Bosque complex and the La Selva complex can be observed in the details of body breaks and rim angles. El Bosque ceramics usually have sharp, precisely finished angles at inflection points in vessel shape; there is a distinctive cleanliness of line and sense of angularity. In La Selva pottery this angularity is blurred and lines are softened. Lips are usually rounded instead of squared, and many vessels are slightly asymmetrical. Where El Bosque composite silhouette bowls had a definite body angle at the basal inflection point (F1), La Selva bowls are curved with a bead of clay rather carelessly applied around the vessel exterior at the shoulder or basal inflection (F3), forming a kind of "pseudo-angle". The same technique is used on La Selva ollas, and the bead or ridge itself (F6) is a major diagnostic mode of the La Selva complex. Lothrop (1926: 332) also recognized the importance of this ridge as a diagnostic trait, identifying it with his Curridabat Ware, Type A.

The rudimentary ringstands of the El Bosque complex (SX1) change to annular bases up to 5 cm (SX3, SX4) in La Selva. Other La Selva supports are invariably tripod and usually hollow, often with vertical cut-out slits (S10) or rows of small circular holes. Stylized feet and toes, with a strip of clay laid across them like a band at the ankle (S11), are diagnostic of La Selva and El Bosque pottery. Other diagnostic support forms are egg-shaped (S16), mammiform (S17, S20) and shouldered conical (S18, S23), all of which find their counterpart in the northwest Costa Rican sequence in the AD 300-800 period. Very long hollow tripod supports (S4, S5, S9) which were decorated with modeled

zoomorphic effigies and attached to small jar-like vessels of sometimes only half their size (floreros), are characteristic of La Selva.

Small handles composed of zoomorphic effigies, attached between lip and vessel body (H4) are common on La Selva ollas. Large strap handles make their first appearance in this complex (H5).

Decoration

A key decorative mode of the El Bosque complex, dentate shell stamping, does not appear in La Selva pottery. Combing is also absent, probably having been done with the same shell tools. Although zoomorphic adornos continue in La Selva ceramics, they are not in the same rounded plump "Disney-like" style of El Bosque; La Selva adornos are rougher edged and often unpolished. They are frequently decorated with reed stamping (D34), punctation (DX1) and cylindrical tool impressions or nicks (D39), and are usually painted while El Bosque adornos are almost always unpainted. Triangular tool impression. (D21) occurs more frequently in La Selva ceramics. While applique pellets (D23) are frequent in El Bosque pottery, they are usually applied in zones or circumferentially; La Selva types like Guacimo Red on Buff and La Selva Sandy Applique display pellets in triangles or arches around the vessel collar, sometimes enclosed by broad incised lines (DX3). Also, La Selva applique pellets are sometimes smoothed into the vessel surface, giving them an embossed look (D44).

Purple or maroon paint over orange or red-orange slip is very common in La Selva ceramics. Often zones that were painted purple

were left unpolished (DX4), a technique also seen in El Bosque. In general, however, there is a much more linear use of paint in La Selva pottery as opposed to the color zoning more usual in El Bosque. Where El Bosque vessels, even open bowls, are very seldom decorated on the interior, La Selva bowls and plates are frequently painted with purple bands on the interior and the exterior (D40). A common motif is the cross (see Lothrop 1926: Plate CLXXIV), also a popular design in the contemporaneous Early Polychrome pottery of Greater Nicoya. Finger painted vertical lines around the collar (D28) and wider maroon bands (D42, D45), often coinciding with a flange or bead around the vessel (F6), are key decorative modes of the La Selva complex.

The triangular representation of the human face (D24), typical of El Bosque pottery, changes to a more stylized version (D48) composed of punctuation and D38.

Types and Groups

Most, if not all, of the following groups probably began in the Zoned Bichrome II Period but reached their maximum popularity at different times during the Transitional Period. Many of them have been found in association (at 40-FN and 7-SL) with groups of the later Madera ceramic complex whereas the El Bosque groups never have been.

Roxana Shiny Maroon and Orange Group (TG9)

Paste - P3, P5

Surface Finish - SF7

Form - Some of the characteristic forms for El Bosque Red on Buff

continue in this group (like R12, R16), but here the vessels are smaller and with much thinner walls. The forms most diagnostic for this group are: hemispherical bowls (R29), often with an exterior bead or flange; they are usually tripod with small looped solid supports (S12), or solid conical (S18) supports. Finely modeled small annular bases also are seen (SX2); large open bowls with expanded and everted rims (R31); hollow egg-shaped supports with round or triangular holes (S16) are invariably found on this form. More rarely, the same kind of support appears on small composite silhouette bowls (R16).

Decoration - If the vessel is slipped on lip and interior in a glossy crackled maroon, the vestigial buff panel about the collar is usually filled with a light coat of smeared orange paint, haphazardly applied. This is easily distinguished from the precisely slipped zones of E1 Bosque Red on Buff. Another variety of this group is slipped in orange with painted motifs in the form of thick maroon lines, zones and zoomorphic stylized motifs on vessel interior. The "paint" is in fact the same glossy crackled maroon slip mentioned above, applied on a polished orange slip. This decorative technique is so distinctive that, like the buff panel about the collar which appears on several types of this period, it was not made into a separate decorative mode; instead, its presence defines the Roxana Shiny Maroon and Orange group and its frequency may be observed by consulting the seriation chart for types and groups. Lothrop (1926: Plate CLXXIVh) illustrates an example of this kind of decoration. Significantly, he too (1926:337) thought that it should be placed intermediate between his "Red Lip Ware" (E1 Bosque Red on Buff) and "Curridabat Ware" (La Selva Sandy Applique),

precisely the position it occupies in this seriation.

Also present on many vessels of this type are painted multiple brush lines in black or white which usually extend vertically to the exterior bottom of the vessel, often crossing there. A similar technique characterizes the Charco Black on Red type of Guanacaste, an Early Polychrome period type (Baudez 1967). Rarely, resist decoration executed in white paint is observed.

Remarks - This type is considered to be later, on the whole, than El Bosque complex ceramics because of its use of linear painted decorations, multiple brush and resist, all techniques which are found more often in the Transitional Period. Zoning, rather than linear patterns, characterizes El Bosque pottery.

Guacimo Red on Buff Group (TG10)

Paste - P5 Surface Finish - SF8

Form - Vessels in this group are basically similar to those of El Bosque Red on Buff, although some forms drop out while new ones are added. Typical forms include R15, R17, R18, R19, R20, R21, R24, R25, R29, R32.

Decoration - Almost all the modes appearing in the El Bosque Red on Buff Group continue here; additional new decorative modes include arches or triangles formed by applique pellets (DX3), painted vertical lines more than 2 cm wide (DX42), and horizontal painted bands (D45), all in the buff panel around the vessel collar.

Although not included as a decorative mode (its frequency would have tended to distort the seriation charts for decoration), the presence of slip which passes or overlaps the rim or body angles of a vessel is highly diagnostic for Guacimo Red on Buff. This practice very rarely appears on El Bosque Red on Buff, the more smoothly polished slip reaching quite precisely to inflection points on the vessel and no further. For example, on many sherds of Guacimo Red on Buff, the lighter red slip often reaches more than one centimeter into the buff panel, overlapping the exterior inflection point on the lip.

Remarks - It is not known with certainty whether the differences observed between El Bosque Red on Buff and Guacimo Red on Buff are a function of temporal or spatial variations, or both. Since Guacimo Red on Buff shares modes of paste, surface finish, form and decoration with other ceramic groups which definitely continue well into the Transitional Period, it is assumed to be later for at least part of its existence. There was certainly a time span in which the two groups were being manufactured simultaneously.

Santa Clara Figurine Group (TG11)

Paste - P4 Surface Finish - unslipped and smoothed

Form - This group encompasses all the figurines, ocarinas, rattles and some of the pottery stamps associated with both the Zoned Bichrome II Period and the Transitional Period. The variety of motifs characteristic of the group is too great to list completely; included are warriors carrying trophy heads and axes; females with infants, or carrying baskets supported on the head or by a tumpline; figures playing flutes;

groups of figures decapitating or opening the chest of a prone, bound figure; many styles of complicated headdresses and capes, apparently of feathers; figures wearing masks in the form of alligators, birds and felines; many zoomorphic figurines and rattles in the form of gourds. Virtually all figurines have tiny pebbles or clay balls inside as rattles.

Decoration - White, black and yellow post-fired paints adorn many of the artifacts of this group; the majority are found without painted decoration, but this is probably due to weathering.

Remarks - The little figurines, rattles and ocarinas of this group are often called toys for children and the like. A funeral offering from the cemetery at the La Montana site (extending from Zoned Bichrome II (AD 1-500) to Transitional (AD 500-1000) revealed that that facile description is far from the truth. Of more than fifty groups of grave furniture excavated from the cemetery, Tomb 5x was the only one with ocarinas and figurine rattles of the Santa Clara Group. Obviously the resting place of a special personage, the tomb also contained a necklace of greenstone disk bead and several jade pendants, two beautifully made ceramic effigy heads, polished axes of fine black basalt in several sizes, as well as ceramic vessels different in shape and decoration from the rest of the tombs excavated at the cemetery. It is thought that the tomb contained the remains of a person who held a special rank, most probably in connection with the rituals practiced at funeral feasts where, even in historical times, the playing of flutes, drums and rattles was a necessary part of the rite, just as special people were assigned to wrap and otherwise treat the body (Bozzolli

1975: 73-93).

Zoila Red Group (TG12)

Paste - P5 Surface Finish - SF8

Form - The majority of the vessels in this group seem to be bowls or dishes with everted, flattened lips (R25), almost always with hollow tripod supports (S23) or annular bases (SX2). Ollas occur also, but even these usually display the characteristic flattened or beveled lip. Small tecomates (R19) with tripod (S21, S23) or annular supports (SX2) are known, as well as an extensive variety of zoomorphic effigy vessels, which include representations of tapirs, peccaries, toucans, rapacious birds and felines. S18 and S23 are especially diagnostic support forms for this group, as they are for some varieties of the Guinea Incised Type from Guanacaste (Baudez 1967: 73).

Decoration - The most frequently observed mode of decoration in this group is D37, broad line incising or engraving appearing in 2 or 3 separate panels around the exterior of the vessel, or around modeled adornos. Motifs are usually geometric and simple; triangles with hatching are common and probably represent the alligator or crocodile. Generally, designs executed in broad line engraving are the simplest; the zoomorphic effigy vessels in this group are usually decorated with finer line incising, frequently in curvilinear or circular motifs. As a rule these vessels also show resist painted decoration.

Another distinctive decorative mode of the Zoila Red Group is the presence of very stylized modeled heads or tails, usually zoomorphic.

These projecting appendages do not show eyes or other details and are commonly surrounded by an unsmoothed but slipped zone which was often painted maroon or purple. The roughened surface probably permitted better adherence of the pigment.

Remarks - The Zoila Red Group encompasses at least three potential types; broad line engraved, fine line incised and resist decorated, and undecorated red. As the design panels on the engraved/incised examples are not fully circumferential (as they are on later engraved/incised types), many sherds cannot be assigned with confidence to discrete decorative types (see Lothrop 1926: Fig. 211b).

Although this group overlaps in time with the ceramic types of the El Bosque complex, its range of variation in form and decoration is strikingly different. Some of the vessels with fine-line incising and organic black paint recall the Rosales Zoned Engraved type of Guanacaste (Baudez 1967). The broader line engraved examples, however, are much like Guinea Incised (Baudez 1967: 73) in terms of vessel form, support form and decorative motifs.

Turrialba Coarse Type (TG13)

Paste - P6 Surface Finish - SF12 (lips are often slipped in
reddish brown and well polished)

Form - Like its distinctive paste, the forms of this type are highly diagnostic and easily recognized. It appears to have been a culinary type, as all rim forms known are from large ollas, either with slightly outcurving rims with a lobular expansion which is slipped and highly polished (R27), or with a high, collar-like rim which bends outward into

a tapered lip (R30). Less frequently seen are ollas with a simple outcurving rim and tapered lip (R26).

In way of a support, many of these ollas have a large, solid conical or truncated-conical projection in the center of the exterior base (S6), suggesting that they were slightly embedded in the ground to hold them erect. Strap handles (H5) also occur. No complete vessel of Turrialba Coarse is known.

Decoration - Maroon paint, either in zones (DX4) or in broad bands (D42, D45) is a common decorative mode. The most diagnostic mode of plastic decoration consists of an undulating applique strip (D47) applied along the lip of R27; this is seen only on Turrialba Coarse, and is sometimes nicked (D39) or punctated. A large (2-4 mm) and precisely round form of punctation, usually in circumferential rows, is also typical.

Remarks - Although found at Transitional Period sites on the Linea Vieja, this type appeared with much greater frequency in the Turrialba valley, especially at the 3-MT, 4-IT, 5-ZT site complex. Tentatively it can be suggested that it was manufactured in the Turrialba valley and traded to nearby localities. (The Linea Vieja is only 15-20 km away in a direct line; the circuitous route travelled today by train and automobile is more than 60 km.)

The rim profiles of Turrialba Coarse are found in the Early Polychrome pottery of Greater Nicoya (Lopez, Los Hermanos, Carillo), as well as Isla Palenque Maroon Slipped (thick variety) of the contemporary Burica phase in Chiriqui, Panama (Linares 1968).

Kennedy (1968: Plates L, LI, LIII, LIV) refers to sherds of this type variously as Cristo Coarse Applique, Cristo Coarse Punctate, Coarse Tan and Coarse Tan Applique. Aguilar (1972: 68) refers to what appears to be the same group as Angostura Beige. In this case it is believed that the more general modifier "Turrialba" is more appropriate heuristically, as the group was almost certainly manufactured in that locality; the name is subject to future revision, however.

Africa Tripod Group (TG14)

Paste - P5, P9 Surface Finish - SF11

Form - Blending into the Ticaban Tripod Group, these vessels have smaller cups, generally a vase-like shape (hence their colloquial name floreros) with a globular basal section and a horn-shaped or truncated conical upper half (R22, R23). Supports are almost always hollow, at least in the upper half; unlike the Ticaban group, Africa supports curve gracefully outward at the bottom and the tip of the support is solid in order to better bear the vessel weight. Clay pellets, as rattles inside the hollow section, are frequent. Invariably, anthropomorphic or zoomorphic modeled adornos appear perched on the juncture between support and body.

Decoration - Other than the modeled adornos, these vessels have little additional decoration. On some, white paint has been applied on and around the unslipped adornos (DX4). Occasionally, a strip of clay molded around the juncture between the globular base and horn-shaped mouth bears cylindrical tool impressions (D39), herringbone incising (DX5), or broader circumferential incision/engraving (D37). Depending

on the kind of modeled figurine resting on the upper part of the support, thin molded strips representing legs (D33) may be attached to the medial section of the support.

Remarks - Certain varieties of this group, similar in paste and surface finish to ceramics of the El Bosque complex, have been found in tombs adjacent to others containing vessels of the El Bosque Red on Buff group, suggesting contemporaneity. Similar long-legged tripods, often displaying the same decorative modes, are found in Guanacaste during the period AD 300-700 (F.W. Lange, personal communication). Other varieties of the group apparently continue as late as AD 800-900 to judge by certain decorative modes they possess which also appear on La Selva Brown and even the earliest varieties of the Tayutic Brown Incised/Engraved Group. A very few members of the Africa Tripod Group display P9, a distinctive paste most frequently found in pottery of the Stone Cist Period. Others have anthropomorphic adornos painted in unpolished purple, much like the smaller long-legged vessels also of the AD 1000-1500 period.

La Selva Sandy Applique Group (TG15)

Paste - P5

Surface Finish - SF10 (SF9)

Form - This group is very large, encompassing many diverse forms.

Ollas usually have everted lips (R28); shallow dishes (R34, R35) commonly show long hollow tripod supports (S10). Restricted (R9) and unrestricted bowls (R25, R29, R33) may have annular bases (SX2, SX3, SX4) or other kinds of effigy tripod supports (S24, S26, S27, S31).

Ollas frequently display small zoomorphic effigy handles (H4) between

the vessel lip and body. Small double vessels with a basket handle (H11) joining them are also seen. Very common to this group is a bead or strip of clay applied as a flange along the medial-basal inflection of ollas.

Decoration - Several diagnostic decorative modes for this group involve the application of maroon or purple paint (before firing) on an orange-slipped surface (D28, DX4-maroon, D40, D42, D45). White lines (D43) are less frequent. Modes of plastic decoration include applique pellets (D23), reed stamping (D34), tool-impressed triangles (D21), tool impressed fillets (D39), a wavy line of jabs made with a pointed tool (D41), arches or triangles formed on the vessel collar by broad incised parallel lines enclosing large round punctation or applique pellets (DX3), and elongated applique "coffee bean" shapes (D38).

Remarks - La Selva Sandy Applique Group almost certainly begins in the Zoned Bichrome II Period, as it sometimes displays certain decorative modes very diagnostic of the El Bosque complex like red or maroon vertical lines around the vessel collar. At the same time, its paste, surface finish and form modes are very different from those of El Bosque pottery, recalling instead the Pavas complex of the Central valley. This suggests that significant spatial, as well as temporal, variables may come into play when the relationship between the La Selva and the El Bosque complexes is analyzed. On the one hand, it is clear that La Selva pottery with its sandy paste, red-orange slip and purple paint leads into the major utilitarian ceramic group of the Stone Cist Period, La Cabana Coarse; equally clear is the stylistic link between the red on buff pottery of the El Bosque complex and the earlier Chaparron

complex in which orange slip and purple paint are unknown. What is unclear as yet is when and where La Selva Sandy Applique (as opposed to the finely finished El Bosque Orange and Purple) begins to be manufactured. Stirling (1969) illustrates both El Bosque and La Selva pottery from his Marcocha site, dated to AD 144; precise data on association and grave lots are lacking, however. The author has never found El Bosque and La Selva pottery in the same tomb, and only once in the same cemetery, at 21-MOPT, where El Bosque Red on Buff and Africa Tripod vessels were found in separate tombs. For the time being, the Africa Tripod Group, the Santa Clara Figurine Group, and the Roxana Shiny Maroon and Orange Group are the most likely links between the El Bosque and La Selva ceramic complexes.

As was the case for certain modes in El Bosque pottery, there seems to exist a lag in the eastern Costa Rican sequence when La Selva modes are compared to other archeological ceramics in Central America. Coe and Flannery (1967: 24, Fig. 8) show orange slipped, red on orange and streaky brown pottery (all La Selva traits) as early as 500 BC in coastal Guatemala. Cooke (1976: Fig. 3) illustrates everted lip bowls, medial flanges and angular based cups, with applique pellets (La Selva traits) from the AD 150-500 period in Central Panama.

A better temporal correspondence can be found in Early Polychrome ceramics of northwest Costa Rica (Baudez 1967: Planches 28-33; Lange 1971, 1976), at the modal level. Rims with thickened lips, everted to the horizontal are common and several bichrome and polychrome types display an orange or red-orange slip. Baudez and Bacquelin (1976: Fig. 3B) illustrate a shallow dish with long hollow tripod supports

from the Yojoa phase at Los Naranjos, Honduras. Kennedy (1968: Plate LVIs) presents one sherd of La Selva Sandy Applique calling it Cristo Incised. To judge by his photographs, however, Kennedy includes in Cristo Incised pottery from three different periods; as a result, sherds in the same taxon may be up to 1000 years apart in time, a problem observed in several of Kennedy's "wares". Aguilar (1976: Fig. 2E, H, M, N, Q) also illustrates several modes of this group as part of his Curridabat phase, contemporary with La Selva. Other examples of "Curridabat Ware" can be found in Lothrop (1926: Plates CLXXI-CLXXIV, Fig. 222).

Anita Fine Purple Group (TG16)

Paste - P10

Surface Finish - SF9 (SF11)

Form - This infrequently observed group is most often represented by wide mouth tripod bowls (R38, R43); supports are usually hollow and conical (S25) or in the form of small human figures. Some earlier, incised varieties of this group have mammiform supports (S20, S17) and horizontal everted rims (R39). Annular bases (SX2) (unslipped) are also seen.

Decoration - Like Zoila Red and La Selva Brown, this group is formed of both plain and incised/excised (DX5) vessels. The earlier incised varieties appear to overlap with the fine line engraved resist decorated varieties of Zoila Red, the distinguishing factors being the purple slip and finer, more compact paste of Anita Fine Purple. The large, hollow, conical supports, unslipped (S25), frequently display broad line incising (D37) and amorphous zoomorphic adornos. Lothrop

(1926: Plate CLXII a, c, d; Plate CLXIII) illustrates several examples of the incised version of this group, calling it Maroon Incised Ware.

Remarks - Sherds of this group were found as infrequently as those of the imported Nicoya polychromes in the author's excavations. It is suggested that Anita Fine Purple is also a trade group but from the southeastern instead of the northwestern corner of Costa Rica. Surface collections from two sites, Getsamani (22-GL) near Port Limon, and Finca Volio (24-VO) on the Sixaola River near Panama, yielded much greater amounts of Anita Fine Purple sherds than were encountered at sites in the central coastal plain; almost none were found in the Turrialba valley. At 22-GL the predominant paste was P11, a powder-fine fabric pocked with what looked like broken air bubbles (perhaps organic temper burnt away). This distinctive paste was observed only very infrequently at sites on the Linea Vieja.

Given the spatial focus of this group, a relationship with Isla Palenque Maroon Slipped thin variety (Linares 1968: 19-23, Figs. 11, 12) is likely. This was the predominant ceramic type of Linares' Burica Phase (AD 500-800) from the Gulf of Chiriqui, Panama. The temporal correlation with the La Selva complex is appropriate, and as further evidence, the rim/vessel shape modes of Isla Palenque Maroon Slipped, thick variety, include all the diagnostic shapes for a major La Selva culinary group, Turrialba Coarse.

La Selva Polished Orange-Purple Group (TG17)

Paste - P5 (P10) Surface Finish - SF9

Form - The range of vessel forms for this group is poorly known as it

was infrequently found in the stratigraphic pits and never in a tomb. A thinner version of R29 (simple curved bowl) was observed, as well as R19 (small tecomate with unexpanded lip) and R37 (small olla with sharply curved, tapered lip). Supports appear to include annular bases (SX2, SX3) and mammiform varieties (S20). A thinner, tripod (S21) version of R24 is also typical.

Decoration - D40 (maroon or purple paint applied before firing in zones or linear patterns) predominates; also seen are La Selva-style adornos (D39). Multiple brushed white lines, often with toothed motifs (D49) are typical. Some resist decoration is seen (D36).

Remarks - The group is as yet poorly defined. It usually has thinner vessel walls and a better polish than La Selva Sandy Applique and was thus separated, perhaps unnecessarily. Its characteristic surface finish grades into the incised/excised varieties of Anita Fine Purple but also resembles that of Lajas-Yacuare and Tuis Negative at times. What would ordinarily be the earliest varieties of both the Tuis Negative and Mercedes White Line groups have been included in La Selva Polished Orange-Purple because they share a very diagnostic decorative mode: thick purple lines painted in geometric patterns on the vessel interior and exterior (D40), usually combined with thinner multiple white lines (D49). The stylistic evolution of the use of white lines in central and eastern Costa Rica pottery is informative and important, but loses its diagnostic value when squeezed into type or group categories. It first appears as single geometric line motifs in the Santa Clara Figurine Group; continues in a similar fashion (combined with unpolished purple zones) in La Selva Sandy Applique; assumes multiple

brushed, "toothed" motifs in La Selva Polished Orange Purple; loses the teeth on the multiple brushed motifs in Mercedes White Line, where it also begins to appear in crosshatched motifs; finally, the cross-hatched designs continue into the ollas of the La Cabana Fine Slipped and Parismina groups, but on the interior of the vessel lip as well as the exterior body, a placement not seen before. A better classification device in these cases would be the modal series (Rouse and Crucent 1963:23).

La Selva Brown Group (TG18)

Paste - P5 (P9) Surface Finish - SF11

Form - As constituted here, this group displays a wide variety of forms including small tecomates (R19), everted rim bowls (R25), large plates or platters with a direct, blunted lip (R32) and small bowls or dishes with flat beveled lips (R33, R36). If they were not set apart as a special funerary group, most vessels of the Africa Tripod Group would correspond to La Selva Brown.

Decoration - As in the Zoila Red Group, many La Selva Brown vessels were decorated by incising/excising (D37,DX5) that was not continuous around the vessel circumference, but instead occurs in separated panels. A separate incised type has not yet been established. Tool impressed fillets, adornos and pellets (D39) are also diagnostic of this group - it is in many ways simply a brown-slipped version of Zoila Red. A small stylized human face composed of reed stamping and a tool impressed pellet (D48) replaces the triangular human head (D24) of El Bosque pottery.

Remarks - This group encompasses at least two or three different types, and, although resembling Zoila Red in many ways, is probably later as a whole. Three factors point to a later temporal span - the change from red to brown slip in incised varieties, the occasional use of P9, predominantly a Stone Cist Period paste, and the addition of new rim/vessel forms, especially R33 and R36.

Incised motifs like hatched triangles and a linked fret pattern (which also appear in Zoila Red and the Greater Nicoya type Guinea Incised) separated the earlier La Selva Brown incised pottery from succeeding types like Tayutic, which display very different motifs, vessel and support forms and plastic decorative modes. Aguilar's types Jicotea Inciso and Chitaria Inciso (1972: 42-48) may fall into this group but further study and a larger sample is needed.

Lajas-Yacuare Group (TG19)

Paste - P8 (P6) Surface Finish - SF14

Form - Simple bowls with beveled or tapered lips (R38, R45); small ollas (R37). Small highly polished napkin-ring ceramic ear spools are also known. Pedestal bases (SX4) occur, often with cut-out rectangles.

Decoration - Few decorative modes have been noted other than smoothed applique pellets (D44), often surrounded by splotches of red or maroon paint (DX4). Resist painting in organic black (D36) also appears, apparently in simple vertical lines on the vessel interior. An unslipped zone is often left around the exterior collar, in which stylized human faces (D48) may appear.

Remarks - This group is basically a smaller, thinner-walled different shaped version of Turrialba Coarse, also with a somewhat finer paste. It is thought to overlap with the Tuis Negative Type. Aguilar (1972: 54-58) describes two types, Yacuare and Lajas Bicromo, which have been combined for the time being in this group, preserving Aguilar's nomenclature. Much more data are needed to properly define this pottery, although its Transitional placement is secure. Because Aguilar dug in mixed stratigraphy, he suggests that it and other Transitional types, like Turrialba Coarse - his Angostura Beige - carried on into the Stone Cist Period. Almost certainly, this was not the case.

Trade Pottery

Sherds from ceramics which were traded into the Atlantic watershed region of Costa Rica from other regions were found with increasing frequency in later time periods. Thus, while no trade sherds at all were found associated with El Bosque complex pottery, only a very few (8-10) came to light in La Selva contexts. Most of these were observed in stratigraphic pits at the 5-ZT site near Turrialba, in the middle levels, where sherds of Turrialba Coarse, Lajas-Yacuare, La Selva Sandy Applique and La Selva Brown predominated.

The trade types found at 5-ZT were Cortes Black on Red (TG20), Carrillo Polychrome (TG21) and Galo Polychrome (TG22), all of which correspond to the Early Polychrome Period (AD 500-800) in Guanacaste (Baudez 1967: 116, 117-121, 130-133), thus providing support for the chronological placement of the La Selva complex.

Diagnostic Ceramic Modes, Types and Groups: Madera Complex

Although as yet poorly defined, the Madera ceramic complex has been separated from La Selva because its two major constituents, Tuis Negative and Mercedes White Line are usually found together and also persist (in modified form) into the Stone Cist Period (AD 1000-1500).

Paste

While some sherds of this complex show the sandy texture of P5, the majority are either P8 or P9, a distinctive lightweight paste characterized by white and black pumice fragments and perhaps charred organic material.

Surface Finish

A brownish-red to orange slip, rather carelessly stick-polished. Where non-plastics protrude from the surface a pebbly texture is typical (SF14).

Form

Most vessels in the Madera Complex are thin walled open bowls, always with tripod supports. A composite silhouette shape R24, seen in a coarser version in the El Bosque complex, represents perhaps one of the earliest forms of Madera pottery. More common are R39, a tripod bowl with a horizontally everted unexpanded lip, and R45, a similar bowl without the folded lip, but with three tabular handles (H7) in its place. A distinctive chimney-shaped vessel (R40) appears in this complex.

Supports include small rather elongate conical shapes, slightly shouldered (S21), and hollow conical forms (S25, S27, S28) as well as annular bases (SX2).

Decoration

The decorative motif which links Madera to La Selva pottery is panels of thin lines painted in white with a multiple brush (D43), forming triangles with a "toothed" design on the upper side. The same design appears in resist or negative black on the interior of tripod dishes, and occasionally on the incised varieties of Zoila Red and La Selva Brown. Thin engraved lines (DX5) usually in simple geometric forms (often crosshatched triangles) around the exterior vessel collar are also seen.

Types and Groups

As no obviously culinary or utilitarian ceramics have been found in direct association with the groups of the Madera Complex, it is assumed that the later varieties of La Selva Sandy Applique (Fig.152) and Turrialba Coarse were in use. It should be remembered that the time span of roughly AD 800-1100 is one poorly represented by sites in this dissertation; further work may very well clear the picture.

Mila Red-Orange Engraved Type (TG23)

Paste - P8

Surface Finish - SF14

Form - The only form recorded for this type to date is an open shallow

bowl (R44) with a tapered lip, with either stylized anthropomorphic tripod supports (unslipped - no mode designation but akin to S25) or an annular base (SX2, SX3).

Decoration - Fine line engraving (DX5) in a panel around the red-slipped exterior vessel collar, generally in vertical diagonal or diagonally crosshatched motifs. The red slipped interior is frequently decorated in curvilinear resist patterns with a resist technique which occasionally leaves a palpable relief where the organic black was applied.

Remarks - In some ways (decorative motif), this type resembles the incised varieties of Anita Fine Purple, but paste and surface finish are radically different, suggesting spatial but not great chronological variation, as indeed would seem to be the case; to date, the type is only known from the Turrialba valley. This type, although executed on a red slip, breaks away from the engraved varieties of the Zoila Red group, in that it displays in the engraved panel groups of fairly parallel lines separated by a toothed or crosshatched motif. These vertical line groups are uncommon in Zoila Red (hatched triangles are more typical), but diagnostic for the later brown incised/engraved group, Tayutic.

Tuis Negative Type (TG24)

Paste - P9 (P8) Surface Finish - SF14

Form - This type has a limited range of forms - only open tripod bowls occur with either a thin everted lip folded to or past the horizontal

(R39) or a tapered lip (R45) with three tab-like handles (H7) at the position as the folded lip of R39. The hollow supports of R39 almost always take the form of a very stylized human figure with slits cut out for eyes and a tool-impressed pellet for the mouth. The spatulate extremity of this support is usually impressed with two or three grooves to represent toes (S27). The supports for R45 are either hollow and conical with cut-out vertical slits (S28) or less frequently, annular bases (SX2) (see Lothrop 1926: Fig. 211a).

Decoration - As is also the case with the Mercedes White Line Group, the Tuis Negative Type overlaps with the La Selva Polished Orange-Purple Group in that the earliest Tuis-like vessel shapes frequently have the surface finish (SF9, SF10) and decoration (D40, D43 - thick purple bands and thinner white lines) of La Selva groups like TG15 and TG17. This is a good example of the value of seriating modes independently of types or groups. A strictly taxonomic typological system would produce a plethora of types and probably sow confusion in this case.

The typical Tuis decoration is organic black resist (negative paint) (D36), applied in curvilinear patterns; all the designs illustrated in Lothrop's (1926) Plate CLXI are from vessels of the Tuis Negative Type. Lothrop calls this pottery Lost-Color Ware, after Holmes (1888), and correctly places the major focus of this decorative technique in Colombia and Ecuador. The author has been shown pottery from the central highlands of Colombia which is remarkably similar to Tuis (Karen Olsen Bruhns, personal communication).

Remarks - Curvilinear designs in negative paint are also found on some of the incised varieties of the Zoila Red Group and the Anita Fine Purple Group. Often the motif consists of a band of parallel lines with a short perpendicular "toothed" pattern along one side. This design probably represents a stylized alligator and appears on black painted red pottery (Charco) of the Early Polychrome Period (AD 500-800) in northwest Costa Rica as well as on the La Selva Polished Orange-Purple Mercedes-like varieties.

The same motif, incised, appears on examples of the Zoila Red, La Selva Brown and early Tayutic incised groups. In other words, this mode of decorative motif links several different types or groups throughout the Transitional Period, culminating in Tuis Negative, which persists into the Stone Cist Period (AD 1000-1500).

Although more popular in the Transitional Period, the technique of negative painting in organic black continues in the Stone Cist Period where it usually appears in angular geometric motifs (very similar to those of the Irazu Yellow Line Group) on large flared cylindrical tripod vessels (Lothrop's Large Jars - see grave lots from the La Cabana component of 20-CB).

Mercedes White Line Group (TG25)

Paste - P8, P9 (P13) Surface Finish - SF14 (SF9)

Form - The most diagnostic form for the group is flat globular vessels with a narrower chimney-like collar (R40). This form invariably displays two small bow-shaped handles (H10) at the collar, and small solid

conical supports, usually thin and tapered (S21) with pronounced circular polishing strokes surrounding them, left when it was attached to the body.

Mercedes White Line persists well into the Stone Cist Period, its chimney-like collar turning into a small olla rim (R51); the style of its diagnostic handle also changes (H13, H15, H16). For the time being, these latest multiple white-lined varieties have been included in the totals of the La Cabana Fine Slipped Group, but a better sample will undoubtedly produce several types from the Mercedes Group in the future.

Decoration - The diagnostic decorative mode for this group is multiple brush painting executed in white (D49). This mode is closely related to, and probably grows out of, D43 which is not always with multiple brush and also appears in combination with other La Selva modes which never appear in Mercedes proper. Both D43 and D49 are related to the mode (unclassified here because of non-appearance in the stratigraphic pits) of multiple brush-painted black lines which appear occasionally on El Bosque Red and Roxana Shiny Maroon on Orange (see Lothrop 1926: Plate CLXa); these lines often continue vertically to the underside of the vessel. A similar mode defines Charco Black on Red (Baudez 1967: 83), a Zoned Bichrome II type in Guanacaste.

Absent in the author's sample was a kind of pottery which apparently combines the typical Mercedes vessel form (R40) with the black line style of multiple brush decoration (Lothrop 1926: Plate CLXb, c, e, f); this hybrid of styles represents an important link between El Bosque,

La Selva and Madera, and again shows the importance of following a modal chain or series rather than attempting to set up taxonomic types.

Remarks -- Both Mercedes White Line and Tuis Negative, important ceramic groups in the Atlantic watershed, are poorly represented in the author's sample. The resulting gap and lack of clarity in the ceramic sequence is easily visible in the seriation charts. This is a sampling problem which will be focused on in the future.

Comparative Data: Transitional Period Ceramics

Although it was in the Transitional Period (coeval in part with the Early Polychrome Period of the Greater Nicoya sub-area) that the ceramic complexes of the various archeological regions of Costa Rica began their marked stylistic differentiation, leading to an emphasis on polychrome painted decoration in the northwest and southwest and plastic decoration to the east, many close comparisons and associations can still be discerned at the modal level.

As far north as Los Naranjos, Honduras, Baudez and Becquelin (1976: Fig. 3a, b, c, d, e) illustrate typical Transitional rim forms like R25, R38 and tripod support forms S10, S14, S23 and SX3 in their Yojoa phase (AD 550-950). In Greater Nicoya, the modal associations abound; long-legged tripods similar to those of the Africa Tripod Group are found in Guanacaste during the Early Polychrome Period (AD 300-800 as reformulated by Lange, Healy and others); these vessels incorporate R23 or R30 as well as varieties of S4 (Baudez 1967: Planche 48F) or S15. They are frequently decorated with a key marker mode for La Selva, D39,

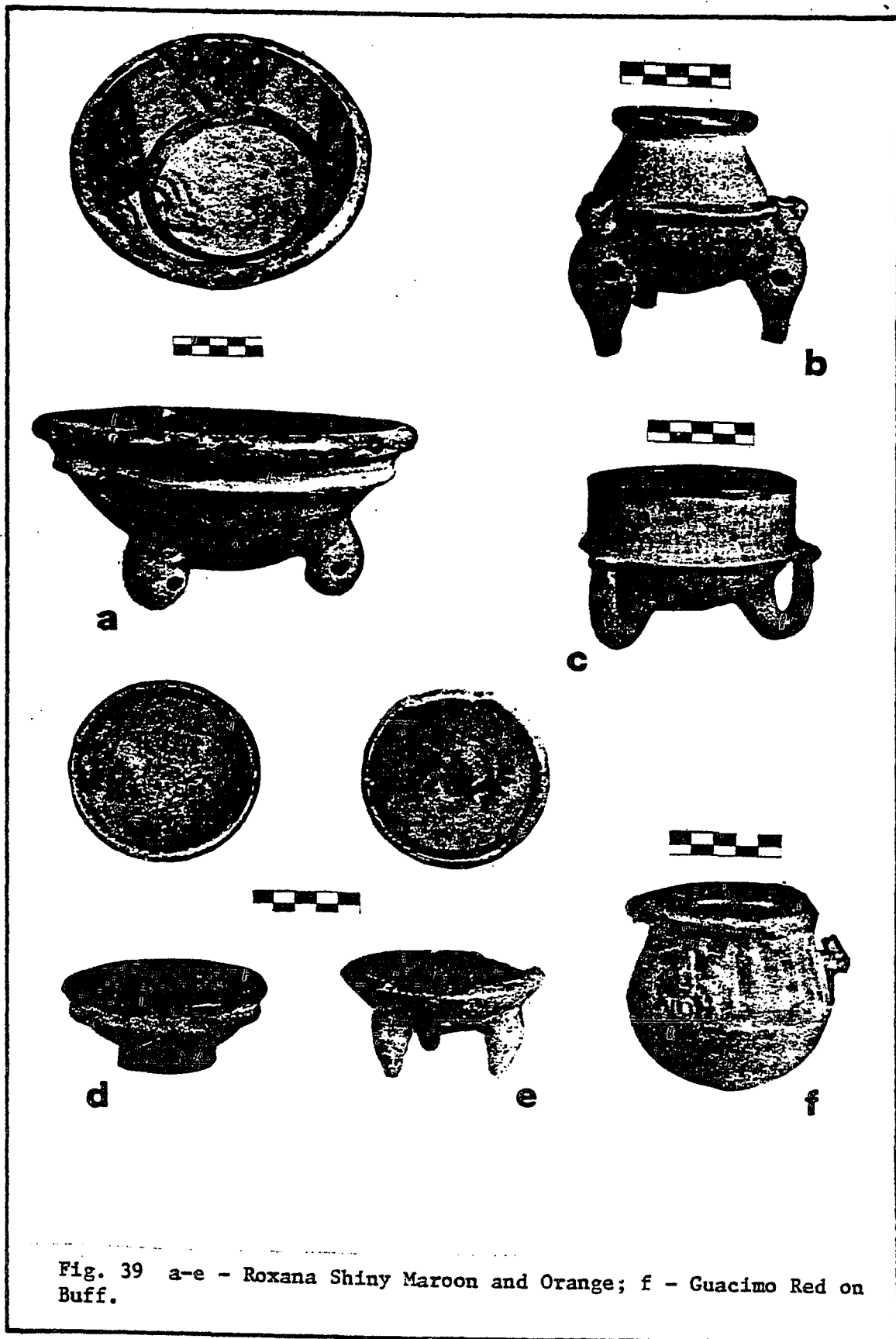


Fig. 39 a-e - Roxana Shiny Maroon and Orange; f - Guacimo Red on Buff.



Fig. 40 Santa Clara Figurine Group; a,b,c,e - figurines; d - ocarina; f - rattle; g - nasal snuffer.

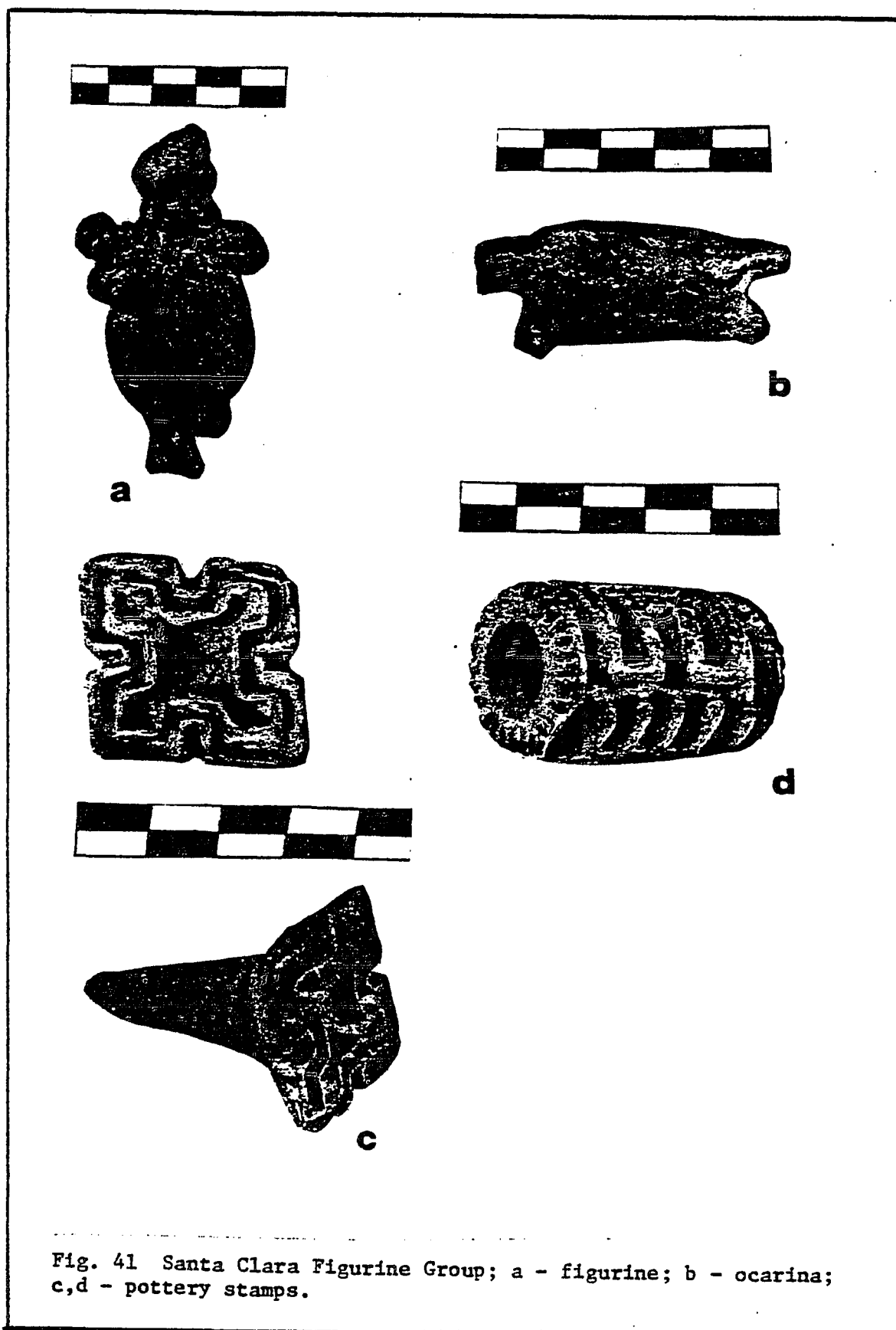


Fig. 41 Santa Clara Figurine Group; a - figurine; b - ocarina; c,d - pottery stamps.

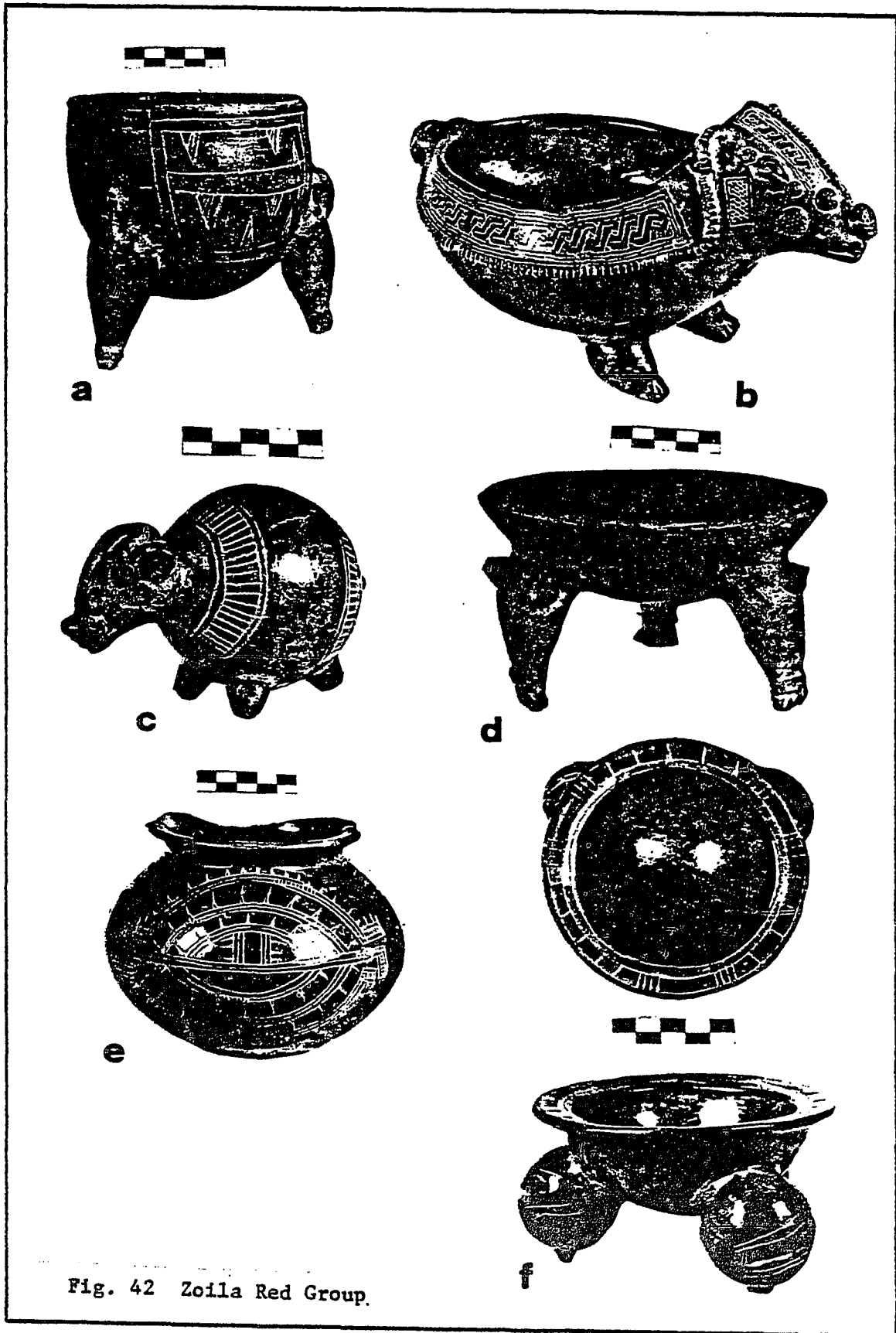


Fig. 42 Zoila Red Group.

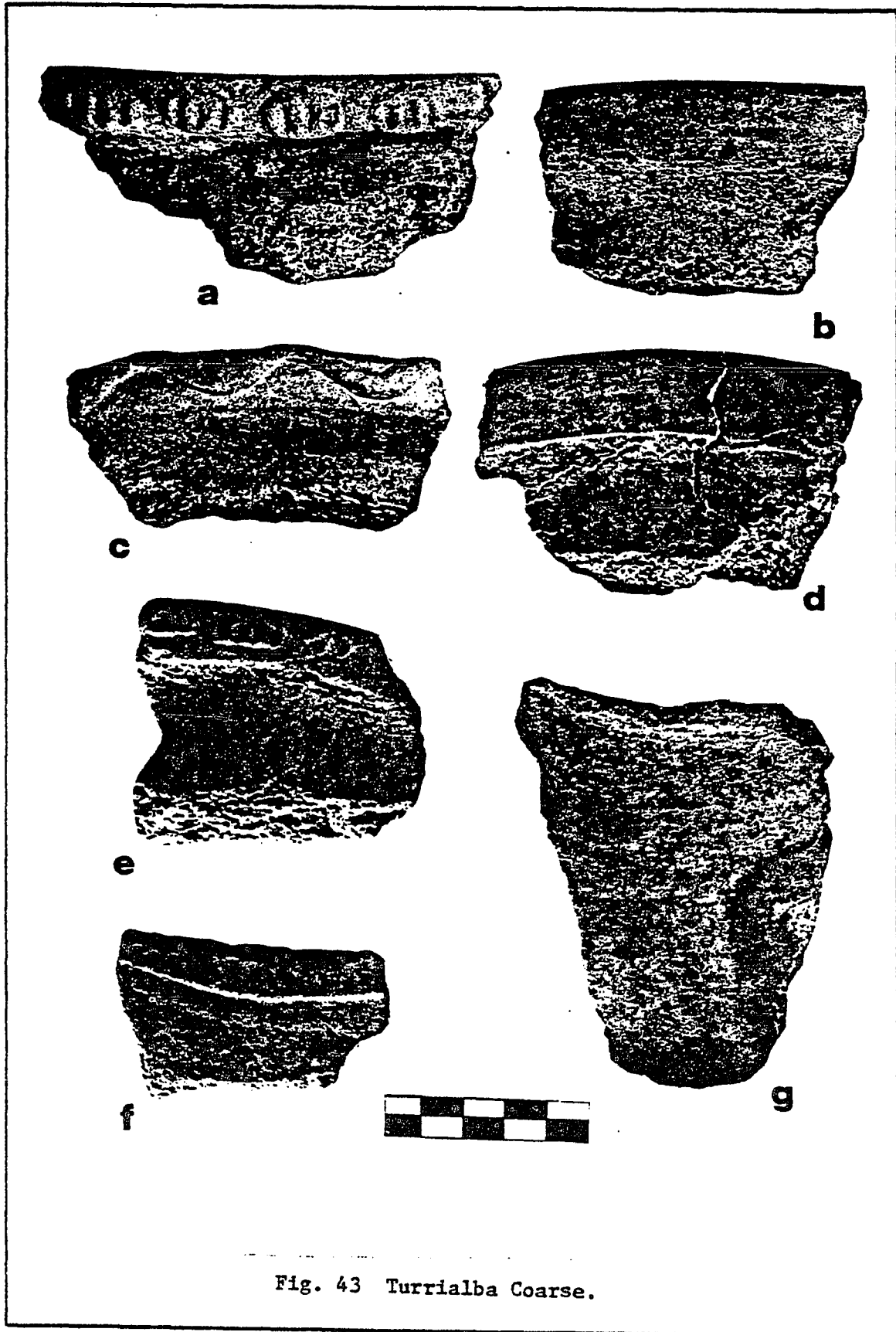


Fig. 43 Turrialba Coarse.

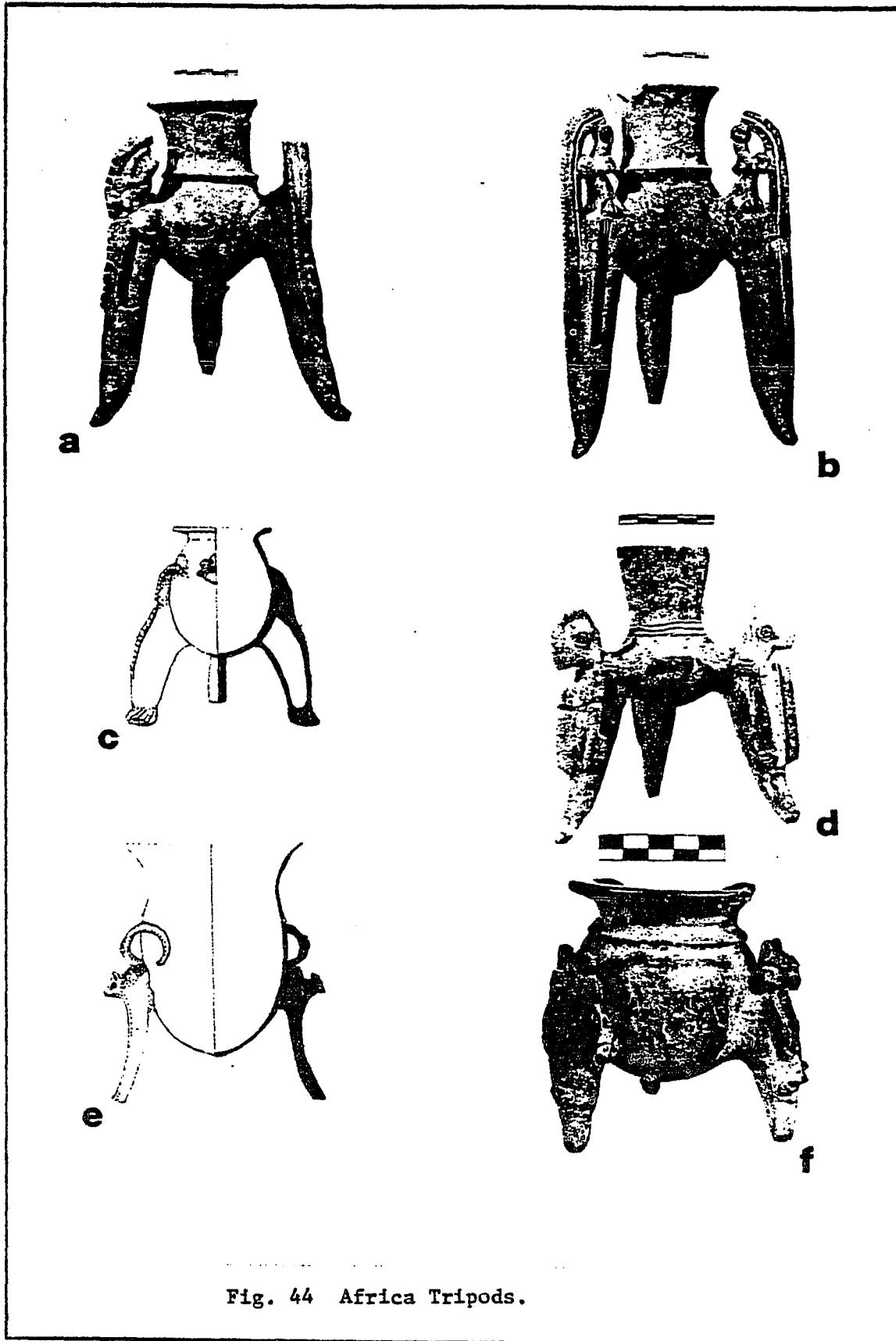


Fig. 44 Africa Tripods.

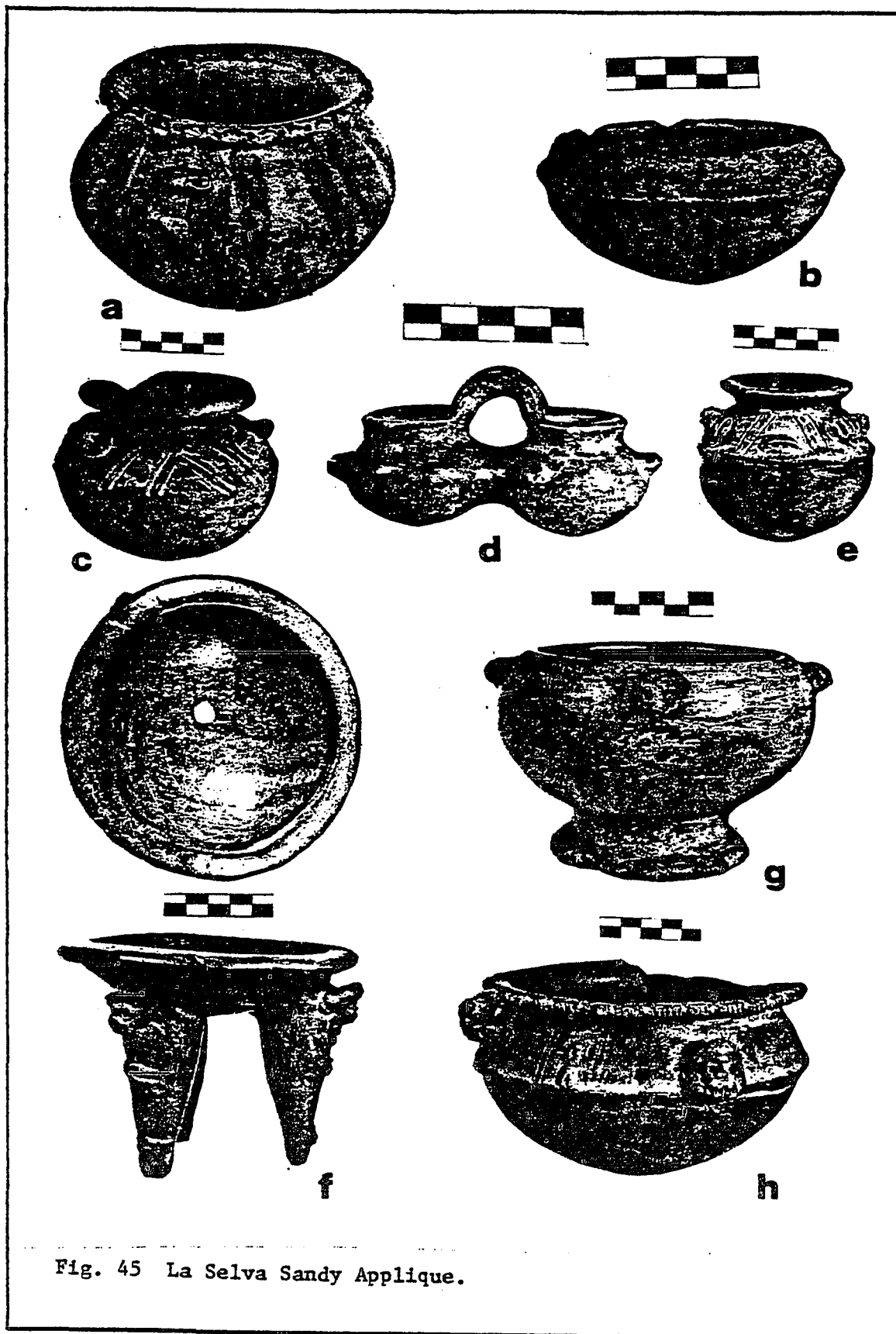
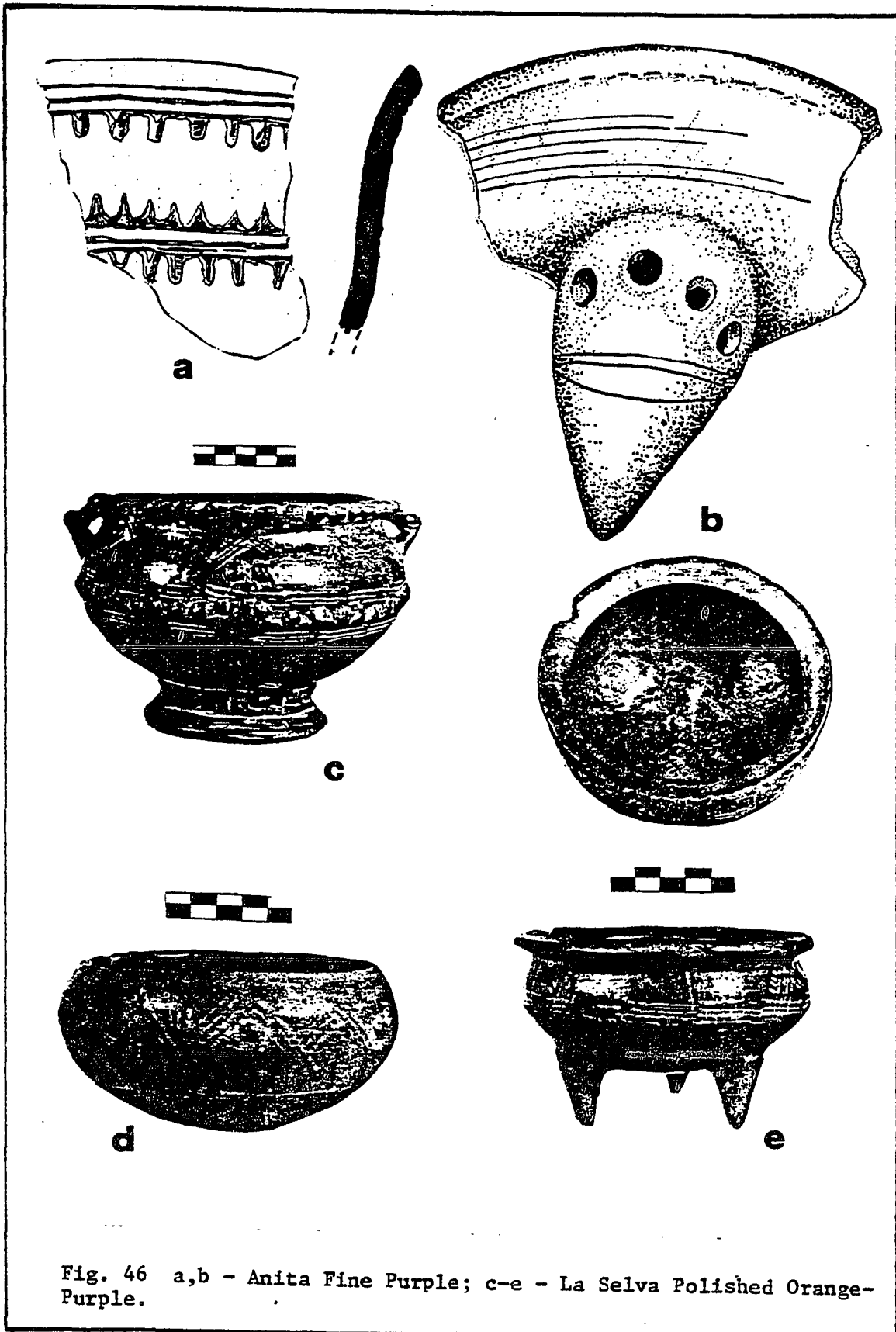


Fig. 45 La Selva Sandy Applique.



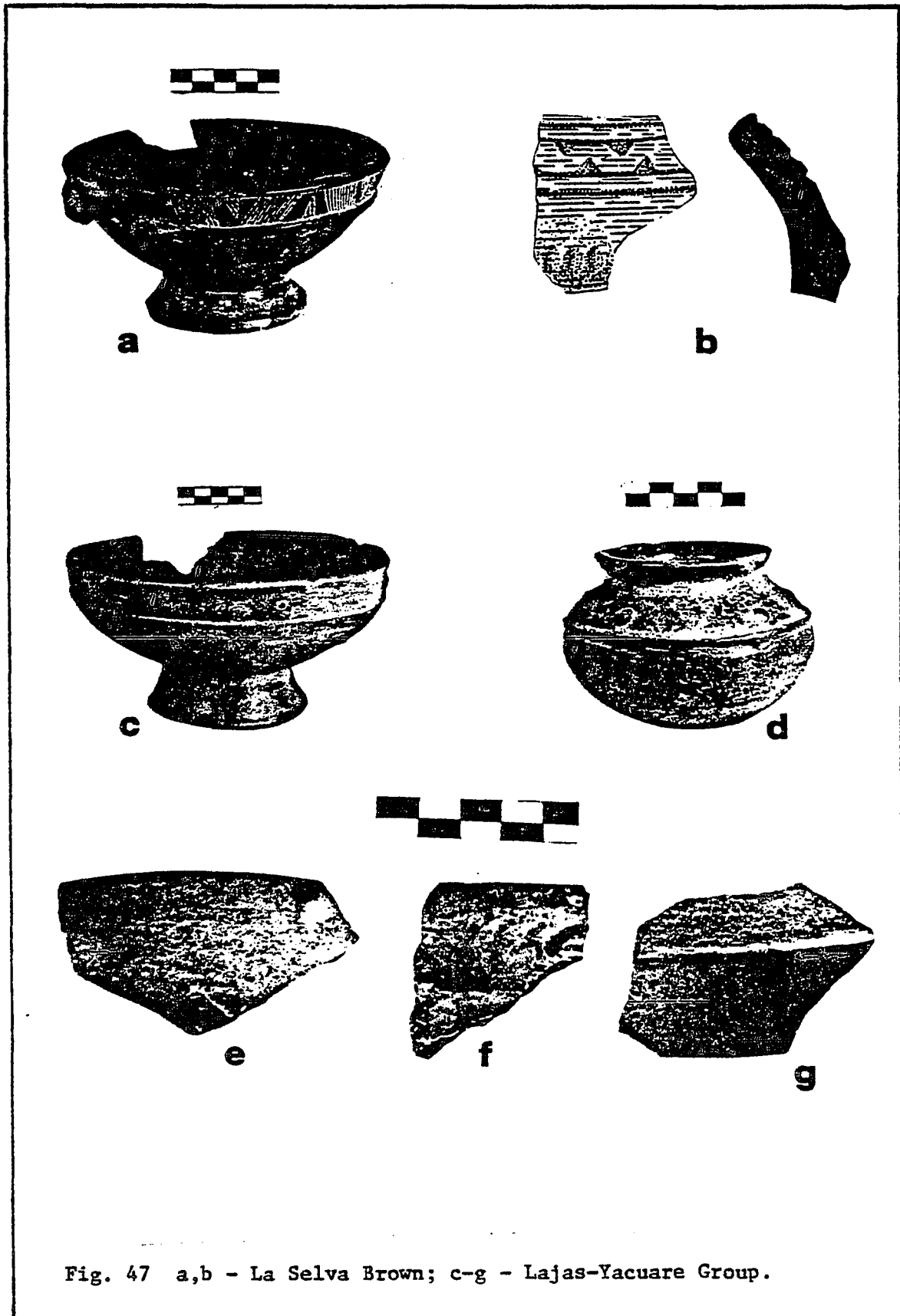


Fig. 47 a,b - La Selva Brown; c-g - Lajas-Yacuare Group.

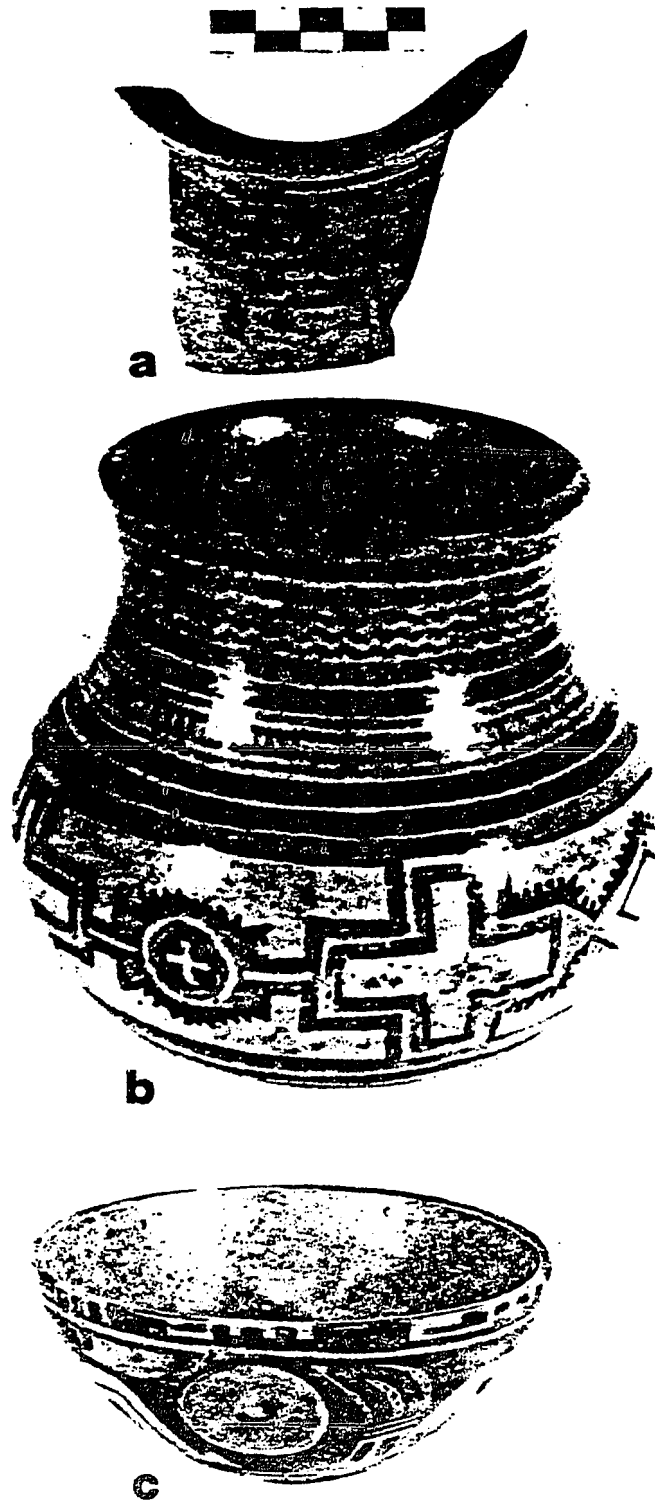


Fig. 48 a - Cortes Black on Red; b - Carrillo Polychrome; c - Galo Polychrome.

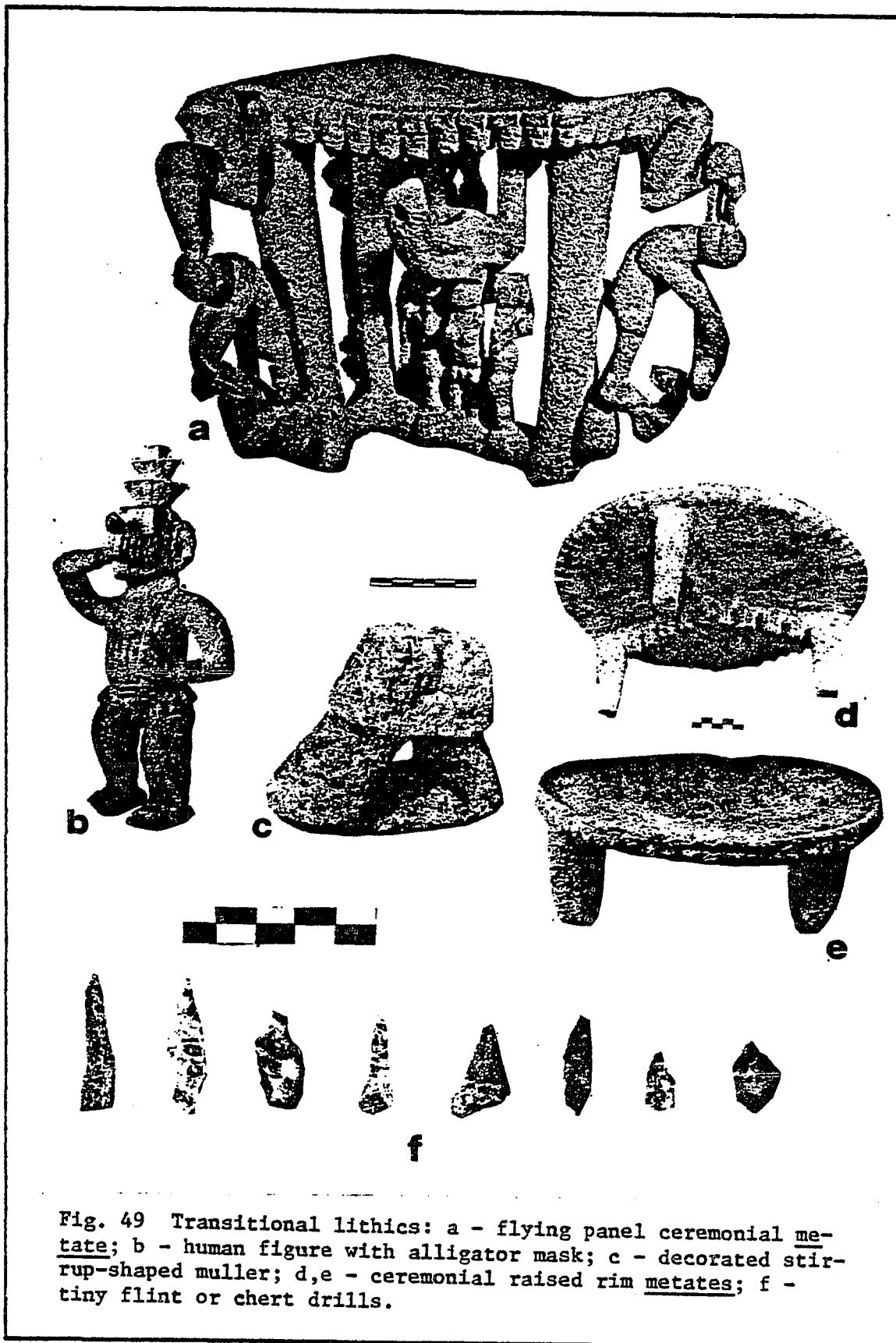
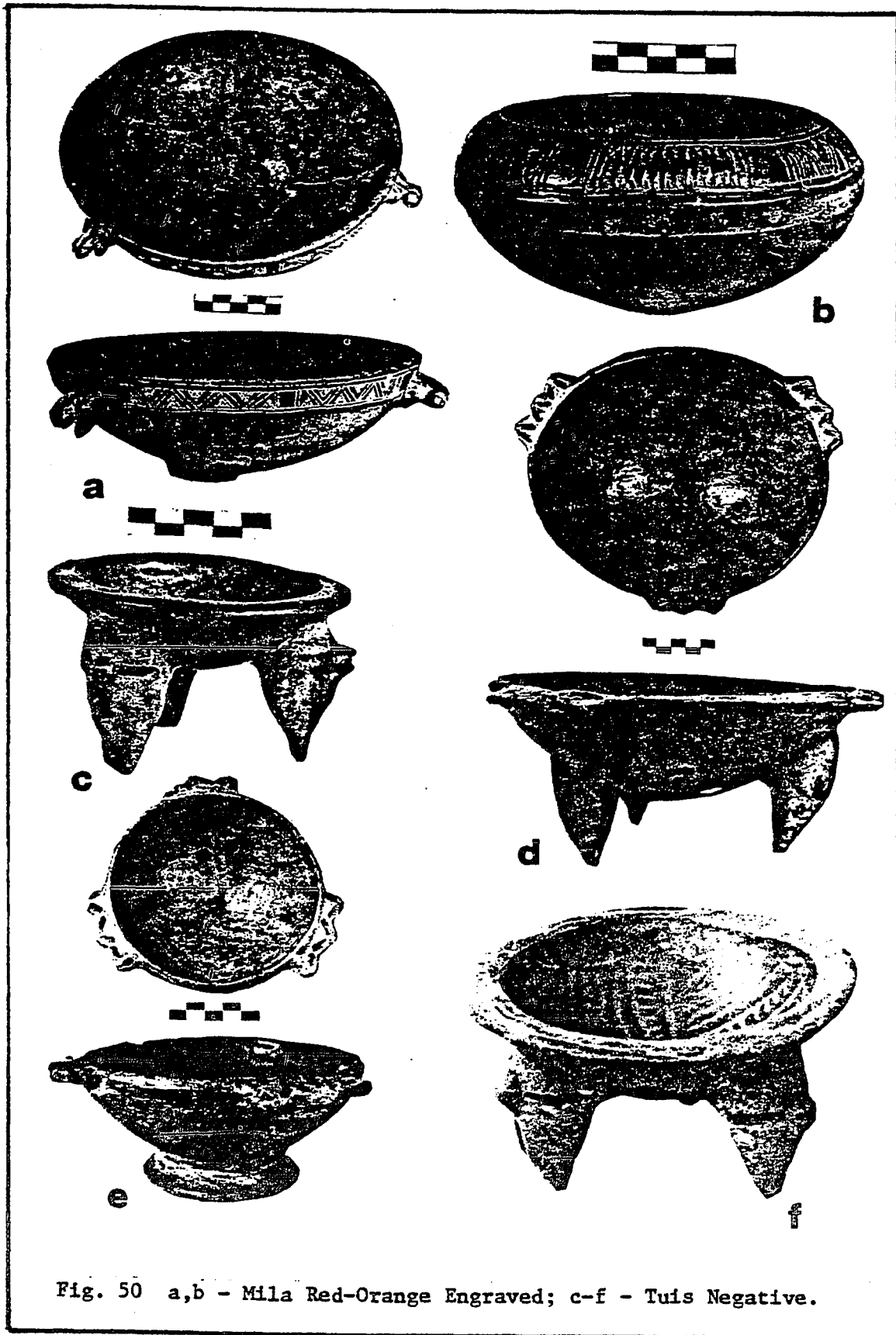


Fig. 49 Transitional lithics: a - flying panel ceremonial metate; b - human figure with alligator mask; c - decorated stirrup-shaped muller; d, e - ceremonial raised rim metates; f - tiny flint or chert drills.



a nicked or tool-impressed fillet. Other vessel forms which appear both in the Atlantic watershed and Greater Nicoya during this period include: simple blunt lipped bowls (R29) with small looped (S12) or conical effigy (S15) supports (Healy 1976: Fig. 3A, B, H; Baudez 1967: Planche 8VI), composite silhouette vessels with shouldered supports (S23 - see Fig. 149) (Baudez 1967: Planche 9X); deep dishes with everted lobular lips (R31) (Baudez 1967: Planche 8 III, Planche 11 III). Other shared rim/vessel forms are R25 (Baudez 1967: Planche 8 III 6, 7), R27 (Baudez 1967: Planche 9 VIII 5; Healy 1976: Fig. 30), and R36 (Baudez 1967: Planche 12 VI 3).

The concept of portraying feet and toes on effigy vessels with deep vertical jabbing marks set off from the rest of the leg by a horizontal fillet of clay (S11) (Lange 1976: Fig. 14E; Baudez 1967: Planche 48G) is a shared mode, as is the placement of a row of round holes down the side of hollow supports (S15) (Baudez 1967: Planche 30A). Strap handles (H5, H8) constitute another modal correlation (Baudez 1967: Planche 32E, F).

Besides D39, several other decorative modes in the two regions make a contemporary appearance. These include tool impressed triangles (D21) (Lange 1976: Fig. 15G; Baudez 1967: Planche 32), multiple brushed lines (D43, D49) (Lange 1976: Fig. 14F) and applique "coffee-bean" pellets (D38) (Baudez 1967: Planche 30G).

Turning to the south, we again find modal links. The presence of the diagnostic rim forms (R27, R30) of Turrialba Coarse in the culinary pottery of the Boruca Phase (AD 500-800) in Greater Chiriqui, has been

mentioned previously, as has the similarity between Isla Palenque Maroon Slipped (fine variety) and the Anita Fine Purple Group. Haberland (1976: Fig. 2E) illustrates an incised vessel which resembles in form and decoration the incised varieties of Zoila Red, as well as one which could be the Chiriqui analogue of Mercedes White Line (1976: Fig. 2D). The long legged tripods also appear in Gran Chiriqui during this period (1976: Fig. 2C).

In Central Panama, the Transitional modes of deep, everted lip dishes (R31, R25), high annular bases (SX3, SX4) and thick loop handles (H8) all appear contemporaneously (Cooke 1976: Fig. 3).

The numerous modal and occasionally typological correlations which can be made between Atlantic watershed ceramics and those of neighbouring regions assist greatly in cross-dating the Transitional Period, as yet poorly represented by radiocarbon dates.

Lithics of the Transitional Period

Flaked Stone

The most characteristic flaked stone artifact for this period is one which began in the Zoned Bichrome II Period, the waisted double-bitted axe. Hundreds of fragments of these axes, made of volcanic cobble spalls or of slate, were found in the fill of the La Montana cemetery. The axes are found with much less frequency on the lowlands of the coastal plain, for reasons unknown. The mode of their manufacture has been described in the previous chapter. One example was found at La

Montana which incorporated its own stone handle in the style of modern steel hatchets.

Small Drills

Also dispersed in the La Montana cemetery fill were small drills of chert (to 5 cm) apparently made to be held in the fingers, as some were provided with a tab for grasping, like a thumb screw (Fig.49f). Several showed signs of wear at the tip and sides, suggesting use on fairly hard materials like wood.

Ground and Polished Stone

All the ground stone tool types described in Zoned Bichrome II lithics seem to carry over into the Transitional Period, at least in association with the La Selva complex. These include the round and rectangular tripod raised edge metates, the petaloid polished celts or axes, and the carved mace heads and jades. To judge by present evidence, there was a slight change in the muller or mano; it went from a round-edged, grooved "bar of soap" shape to one which, although basically similar, was beveled flat on all its edges instead of pecked into grooves. This may imply a different holding position for the tool.

The large, simple stirrup mullers of the Zoned Bichrome II seem to become slightly smaller and more ornate in this period if we can judge by those examples found in the La Montana cemetery (Fig.49c).

Settlement Patterns of the Transitional Period

As in the case of the Zoned Bichrome TT Period, inter-site spatial relationships for this period are virtually unknown. It can only be said that sites were probably fairly large but still dispersed. The paucity of sites excavated for this crucial period prohibit knowing, for the time being, if the agglomeration process which produced the nucleated sites of the Stone Cist Period began during Transitional times, as it probably did.

House Forms

No houses are known as yet for this period (unless the 7-SL feature dates later than expected), but again, if the correlation between tomb shapes and house forms continued into the Transitional, the structures probably remained rectangular, at least during the first part of the period.

Funerary Features

The rectangular linear or corridor shape of Transitional tombs at La Montana was described in the excavations section of this chapter. Grave goods in these tombs were found at different depths: the heavily adorned ollas of the La Selva Sandy Applique group were almost always found at 20-50 cm from the ground surface, while the large plate-Africa Tripod combinations were deeper, at about 80-90 cm. Sometimes plates were found without tripods and vice versa.

Grave goods were generally found dispersed over a 2 m length

along the stone lines which marked the tombs. Not infrequently, the tomb floor slanted down toward the southeast, as if it were dug in the form of a walk-in ramp before being filled with the earth and pebble mixture (coyolillo) which is diagnostic for tombs of this period.

One metate was found standing on edge (probably leaning against the wall of the hole dug for burial), while the other was sitting upright. Burials were apparently direct and extended, facing toward the northwest, if we can judge by the placement of a jade and greenstone necklace. Found in association with the axes, ceramic effigy heads, figurines and ocarinas illustrated in Figs. 146 ff, the necklace was still mostly articulated, with the larger, major pendant on one side (northwest) and a tear drop-shaped bead placed as a clasp at the back (southeast). No teeth or bones were preserved but many of the soft greenstone disk beads were stuck together in groups of 10 or 15 showing that the necklace had been worn when buried. Extrapolating for the rest of the burials, it is hypothesized that they were laid extended, on the back and facing to the northwest with the grave goods dispersed along the length of the body. The long-legged tripods and large plates (and sometimes other kinds of vessels) were probably laid immediately adjacent to the body, with most ollas deposited higher up in the tomb fill. It is likely that all vessels contained comestibles or other offerings when buried.

The street-like tomb feature observed in Sector 2 at La Montana, half lajas and half cobbles, presages architectural and funerary features of the Stone Cist Period, when cobble-paved causeways and laja-covered tombs became the norm.

Subsistence

Very little identifiable carbonized plant materials have been recovered for this period. In a long-legged tripod vessel from the La Montana cemetery were found a tiny charred corn cob and fragments of the corn plant stem (Fig. 143). The corn has not yet been identified as to race, but it is comparable in size to the 7-SL example described in the previous chapter, if perhaps somewhat thinner in diameter. This evidence reinforces the hypothesis that the floreros or long-legged tripods were used to drink the funeral chicha, perhaps made of maize at that time. The carbonized fragments are not considered to represent actual remnants of the brew, but were probably symbolic of the ingredients. An alternative interpretation would be that the tripods served as incense or offering receptacles in which certain materials were burned during ritual activities, like funerals. The non-appearance of similar plant remains in the rest of the tripod vessels can probably be ascribed to complete combustion or lack of preservation. Some other vessels did contain unrecognizable charcoal fragments, and one contained the charcoal remains of a fruit pit, unable to be identified as to species (Dr. Richard I. Ford, personal communication). Many but not all tripods have external carbon deposits from heating over a fire, which could support either interpretation of their function.

As for other subsistence possibilities, it can only be said for now that subsistence procurement followed a pattern similar to that hypothesized for Zoned Bichrome II, that is, a varied exploitation of tree, root and grain crops, probably complimented by forest, riverine and possibly marine animal protein. There is some suggestion that

agriculture was more intensive during this period in the Turrialba valley if the hypothesis that the double-bitted waisted axes are agricultural implements is correct. They are found by the thousands throughout the valley during Zoned Bichrome II and Transitional times.

Summary and Chronology

The Transitional Period (AD 500-1000) ceramics incorporate modes diagnostic of both the Zoned Bichrome II and Stone Cist Periods. Although the El Bosque style of red slip zoned on buff continues into this period, it begins to display more linear painted decoration and a sandier paste. Vessels with long, hollow tripod effigy supports and hollow mammiform egg-shaped or shouldered conical supports are typical of the Transitional Period. Finger-width purple bands in simple geometric patterns on orange slip (sometimes combined with thinner white lines), incising or excising in non-continuous panels on the vessel exterior, negative paint in organic black, and applique pellets or adornos (usually slipped but unpolished) are all typical modes of decoration during the first part of the period (La Selva Complex). In the latter part of the period, modes like multiple brushed white lines, and a distinctive pumice-tampered paste (Madera Complex) lead into the succeeding period.

House and tomb shapes were probably rectangular in the early part of the Transitional Period, changing to round or oval in the latter part. Subsistence data is virtually lacking, although maize was used. As a whole the Transitional Period is still poorly understood, due to the limited number of sites excavated to date,

especially those occupied during the latter half of the period.

Radiocarbon Dates Associated with Ceramics of the Transitional Period

The first date in parentheses is based on the Libby half-life of 5568 years, while the second has been calibrated using the Suess curve to give calendar years.

1. 1730 ± 60 C14 years: (AD 220) (AD250) UCLA 2113-C.

Charcoal from inside a vessel placed as a burial offering in excavation unit 8 of the La Montana Transitional cemetery (La Selva complex).

2. 1310 ± 60 C14 years: (AD 640) (AD 650) UCLA 2113-E.

Charcoal from inside a vessel placed as a burial offering in excavation unit 7 of the La Montana Transitional cemetery (La Selva complex).

3. 1010 ± 90 C14 years: (AD 940) (AD 970) I-8913.

Charcoal from inside a vessel (a late variety of La Selva Slipped Orange-Purple) placed as a grave offering in Tomb 3b at Site 4-IT. The tomb also contained a small brown incised vessel of a style more often seen in the Stone Cist Period (Tayutic Brown Incised) (Madera Complex).

4. 840 ± 195 C14 years: (AD 1110) (AD 1140) I-8914.

Charcoal dispersed in a lens (Feature 4) containing fragments of Tuis Negative and Mercedes White Line pottery. The lens lay outside a looted Stone Cist tomb, and between walls of

stone running perpendicular to it, in the style of accessory
tombs (4-IT-1) (Madera complex).

CHAPTER 9: THE STONE CIST PERIOD (AD 1000-1500)

Sites and Setting

Five sites were found which contained Stone Cist components; of these, four are included here. Ceramic data from the small cemetery at the Chaparron site were not quantified because, although including many trade sherds of Middle and Late Polychrome Period types like Mora, Birmania, Papagayo, Vallejo and Mombacho, the ceramics associated with the cemetery were mostly plastic-decorated types somewhat different in style than those which characterize the central Atlantic watershed. The San Carlos sub-region is still virtually unknown archeologically and will be treated separately in future investigations.

The sites of Finca Numancia (40-FN) and La Isabel-La Zoila (4-IT/5-ZT) have been described in previous chapters, the former being found near Guapiles on the Linea Vieja and the latter near Turrialba. The site of La Cabana lies 1.5 km to the west of Guacimo, on the first lowland plain which occurs to the northeast of the Cordillera Central. Although material from earlier occupations can be found over much of this plain, the Stone Cist component is concentrated along the southwest bank of the Guacimo River. La Florencia (14-VF) is the name of a sugar cane finca some 2 km to the south of the La Montana site (18-LM) in the Turrialba valley. At that site a small concentration of Stone Cist tombs was found at the entrance of

a small valley in the foothills leading up to the Turrialba volcano. Cane fields prohibited the search for occupational features.

Najera (8-NJ) is a site more fully reported by Kennedy (1968: 235). Only one stone cist tomb with laja cover was excavated by the author at the site.

Excavations and Stratigraphy

La Isabel-La Zoila (4-IT/5-ZT) was the locus of six 2 x 2 m stratigraphic pits, but the perturbed condition of the several components at the site produced a rather unclear cultural stratigraphy, and the pits were not included in the seriation charts. The Stone Cist Period occupation at 5-ZT included several large circular mounds (the biggest was approximately 35 m in diameter and 4 m high), none of which could be cleared because of surrounding coffee plants. A portion of a cobble-paved causeway 9 m wide which led to the largest mound was also uncovered 20-30 cm below the present ground surface.

Nineteen stone cist tombs were excavated in different parts of the La Zoila finca. These yielded La Cabana complex ceramic grave goods, a selection of which are illustrated in Appendix , along with several polished stone celt fragments. Although a Transitional (and probably Zoned Bichrome II) period cemetery also exists at La Zoila, adjacent to the Turrialba-Azul road, it has been extensively potted and was not judged worth of excavation.

One stratigraphic pit was dug into the center of the largest mound reaching a depth of 3 m. The sherd sample was mixed, with the

majority of the Stone Cist Period types appearing near the top and Transitional and Zoned Bichrome II pottery making up the lower levels. A charcoal sample was taken from the very base of the mound in order to ascertain if it represented accumulated midden or architectural fill. The latter interpretation proved to be the right one, as the date given was 680 ± 140 C14 years: AD 1270. This date is well into the Stone Cist Period and probably represents the beginning of the mound construction; the sherds from earlier periods were simply included in the fill. Work at 5-ZT took place in 1975, before the La Cabana site had been excavated, and the construction techniques of the Stone Cist Period circular mounds were still unknown. It has been since determined that the majority of the Stone Cist Period mounds were made of earth fill retained by circular walls of river cobbles. Naturally, stratigraphic pits in such mounds are fruitless and destructive. None has been carried out since the nature of the stone cist mounds became clear.

The Finca Numancia site (40-FN), as fate would have it, was the exceptional case among the late mound sites: here the Stone Cist occupation (La Cabana component) was superimposed over a nicely differentiated La Selva component, forming, in the case of pit 40-2, the best cultural stratigraphy found during five years of fieldwork (40-FN was excavated during the first field season in 1973). Two pits of 2 x 2 m (40-1, 40-2) were dug at 40-FN on top of small (2-3 m) mounds in a hilly field covered with grass 2 m in height. That the mounds were at least in part man-made was evidenced by a partially exposed stone facing on the mound of 40-1. As in the case of 5-ZT, we

were not permitted to strip the mounds to determine the nature of their construction.

Excavation of the stratigraphic pits showed that one of the mounds (the 40-1 mound) had been pitted, perhaps for burials by the Stone Cist occupants, thus disturbing the stratigraphy in pit 40-1. Pit 40-2, dug in another mound, some 75-100 m to the north, showed an excellent stratigraphy: the first four or five 10 cm levels were dominated by Stone Cist Period pottery followed by several levels almost barren of pottery fragments; beginning with levels 11 and 12 (100-120 cm), a distinctly different pottery complex emerged, identified later as what is here called the La Selva complex. Included were sherds of Roxana Shiny Maroon on Orange, Guacimo Red on Buff, Zoila Red (incised), Anita Fine Purple, La Selva Sandy Applique, La Selva Brown (incised), Turrialba Coarse, and La Selva Polished Orange-Purple, which includes the earliest varieties of white-line-decorated pottery. Sherds of the El Bosque ceramic complex did not occur at 40-FN, a fact which was crucial in the formation of the La Selva complex. As El Bosque pottery is plentiful in the Guapiles locality, its non-appearance at 40-FN has been taken as a chronological difference, pending the procurement of more radiocarbon samples.

Excavations at La Florencia (14-VF) in the Turrialba valley were confined to a series of small stone cist tombs. Although unperturbed, several were barren of grave goods. The rest contained extremely fragile, highly eroded vessels and fragments, none of which could be securely identified as to type or group. Most of the tombs had carefully laid floors of flat stones and laja covers.

La Cabana (20-CB), a site near Guacimo, was the locus of the largest Stone Cist Period excavation carried out by the author. In early 1976 while excavating two Zoned Bichrome II tombs in the same pasture, a decision was made to test-strip a small section of a barely noticeable rise near the bank of the Guacimo River. As it happened, the test immediately uncovered a section of the circular retaining wall around what was later called Mound 1. As similar walls were known from the site of Guayabo (now a national park and the only partially restored archeological site in Costa Rica), La Cabana was hypothesized to be a Stone Cist Period occupation site or "ceremonial center". This proved to be the case, but La Cabana was also revealed to differ in architectural detail from Guayabo and the only other published site of this type in Costa Rica, Las Mercedes (Hartman 1901: Fig. 1). The key aspects of the La Cabana excavation in 1976 and 1977 are resumed below. (See Figs. 51, 52 and 54)

After coming down on the wall of Mound 1, it was followed along its length. It described a circle 19 m in diameter. Stones of approximately the same size and shape (30 x 40 cm) had been chosen to make up the wall, and it later proved to have at least seven layers of cobbles at its highest points; many stones had fallen or been dislodged from the wall. When the owner of La Cabana, Alfonso Madriz, was asked if he had noticed anything when the pasture was cleared some 8 to 10 years ago, he stated that the bulldozers used to deforest the land had disturbed the stones considerably in that section of the pasture, but the plow employed afterwards had tended to bounce over the stones. In any case, considerable damage was apparently done at

that time; indeed, the bite of the bulldozer blade into one part of the mound could be distinguished clearly when the grass cover was peeled away.

Along one arc of the stone circle, the stones were considerably larger; as it turned out this was the head of a stairway (5.5 m wide) leading down from Mound 1 into a depression, as yet uncleared, which appeared to be surrounded by a series of low ridges. At this point it was decided to investigate a lower, platform-like area to the south of Mound 1, and also abutting on the low area or depression. To this end, a trench 2 m wide was laid out south from the large mound, along the length of the indistinctly shaped platform. In this trench appeared an arc of a second stone wall which, when followed and exposed, outlined a second mound, lower than the first; it was called Mound 2. The perimeter of Mound 2 was not entirely circular; on the side adjacent to the depression, a curved porch-like area projected, not unlike the proscenium in an ancient theatre. From the center of this projection descended another stairway (3 m wide) into the depression.

As the area between Mounds 1 and 2 was cleared, a carefully laid cobble pavement was noticed about a meter below the uppermost stones of the circular retaining walls. Although covered in part with a jumble of stones which had fallen from the walls themselves, the pavement was still reasonably firm and level, except in three spots where looters had dug their pits. It continued up to the depression, and also in the opposite direction away from the mounds, where it was not followed.

The excavation then progressed to the depression itself and the ridges surrounding it. It soon became clear that the depression was virtually free of stones, while the ridges were thickly packed with them. The highest points on the ridges were 1 - 1.5 m above the floor of the depression when cleared. As the ridges were meticulously cleared stone by stone, the remnants of a double wall of cobbles along the tops of the ridges were revealed. Although the ridges were considerably higher than the depression, they had been higher still in the past. Some sections of the walls were preserved more or less where they had fallen and the approximate height of the wall could be calculated at about 1 m.

A surprising discovery was the presence of tiny stone cist tombs or caches along the tops of two of the three ridges which formed the enclosure around the empty depression, or as we began to call it, the plaza. The ceramic offerings in the stone cists were literally sticking out of the ground when the grass cover had been removed. Most of the vessels were extremely fragmented and some were missing the uppermost parts - they may well have been shaved off by the bulldozer or plow when the pasture was originally cleared. These little circular tombs (they will be so denominated for purposes of reference here - as usual, no skeletal material of any kind was present), only some 60 cm in diameter, were laid out along the space (4.5 m) between the two walls along the top of each ridge. Six of them were found in all, but it is probable that others had been scraped away.

Given the position of the grave goods relative to the fallen cobble walls, it looks like the double wall feature originally held a

dirt fill which covered the tombs to a depth of at least 1 m. There seems to be no other explanation for the exposure of the grave goods today - they had not been disturbed by looters. With time, as the walls collapsed and the fill eroded away, the ceramics were gradually exposed.

In accord with their obviously special location, the tiny tombs contained large tripod urns, of a kind usually found only in large, laja-covered stone cist tombs in late cemeteries (Fig. 60c). In one case, an urn was filled with other smaller vessels, including a rare example of a La Cabana complex ocarina. In some cases, a series of unmodified, but unusually round, small cobbles (to 15 cm) were found associated; a small laja was also found, pushed to the side of one of the tombs.

As the horizontal excavation proceeded to the northwest, other features came to light. Intersecting the western arm of the enclosure surrounding the empty plaza was a cobble-paved walkway or street, sloping like a ramp into the plaza itself. This feature, remarkably well preserved, continued almost all the way to the edge of the 15 m bluff abutting the Guacimo River. To the north of the paved street outside the plaza enclosure, was a house circle some 10 m in diameter. Although the cobble wall forming the foundation continued 45 cm into the ground, the feature was not raised like Mounds 1 and 2; it went unnoticed until the grass cover was stripped away. The Guayabo site in Turrialba (the portion of it which has been cleared) has more than ten such small house circles, dispersed through the site, away from the main mounds. Part of the circle at La Cabana (called Feature 9)

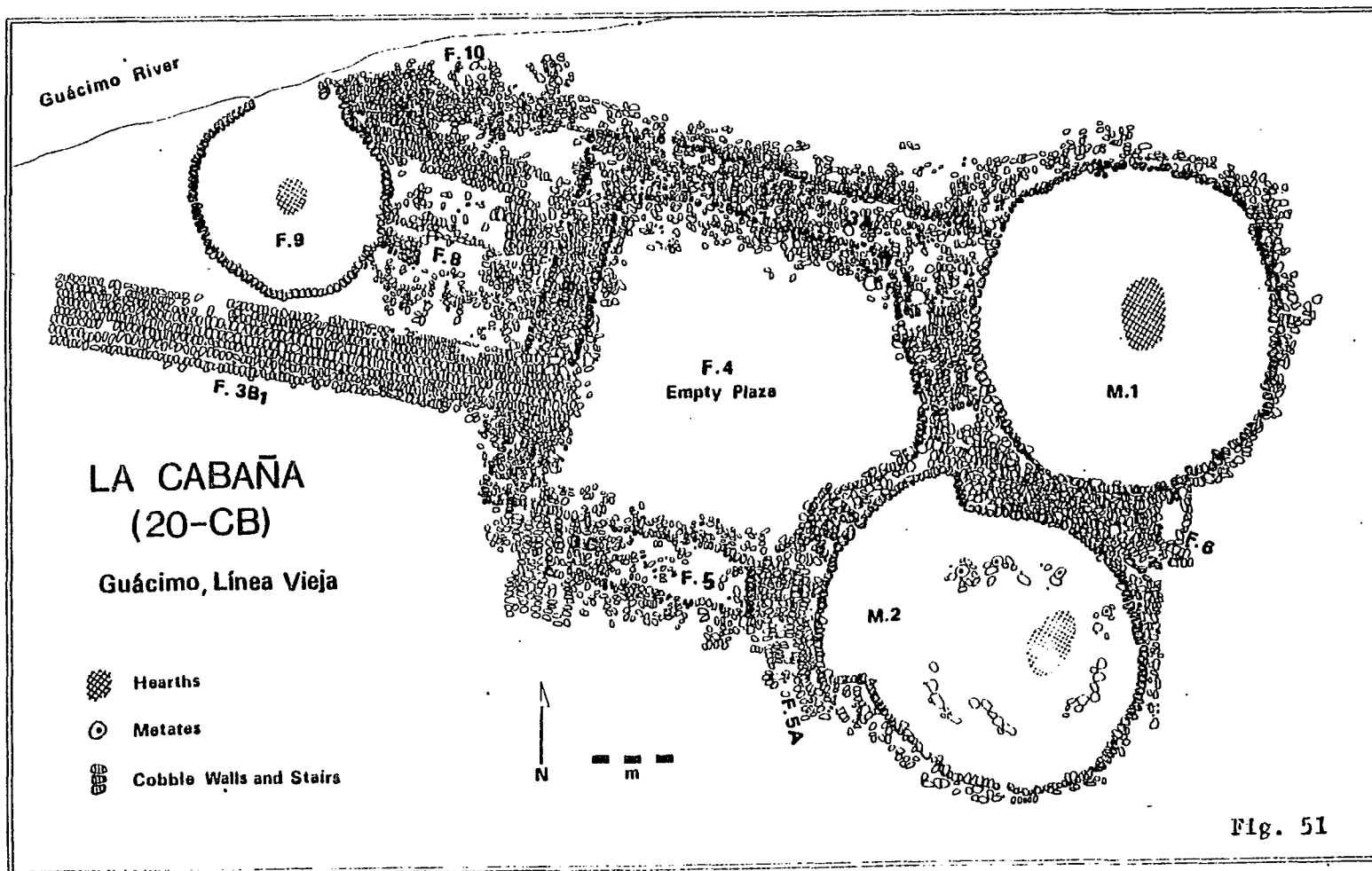
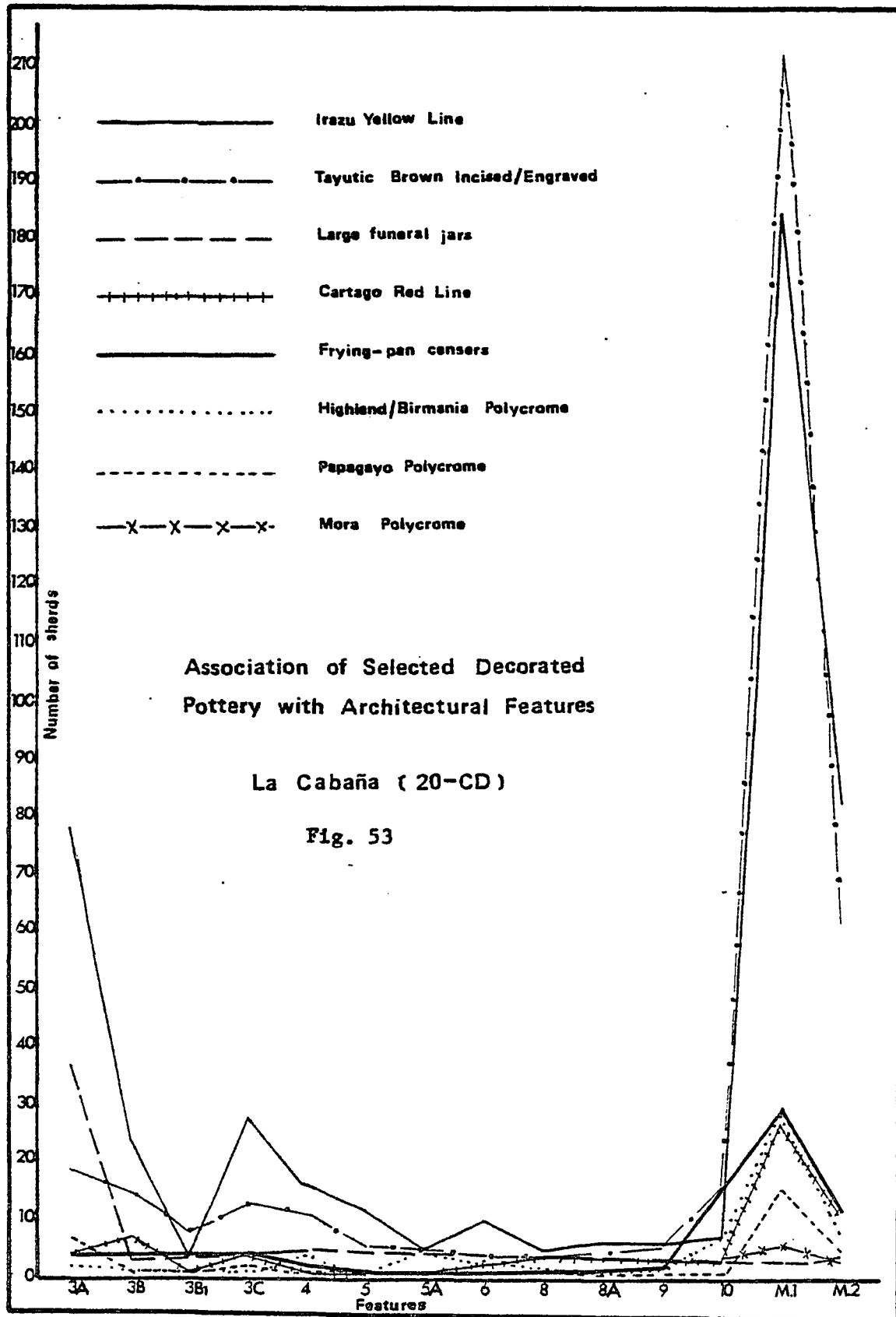


Fig. 51



Fig. 52 La Cabana, a Stone Cist Period architectural site.



had already fallen into the Guacimo River, due to bank erosion provoked by a bend in the river where it passes the site. It is probable that some 30-40 m of the site have already disappeared into the river. There are no stairs (constructed of cobbles) to the river, as are still preserved at Guayabo; they must have been there in the past, given the roundabout, difficult access to the river from the site today.

To the east of the house circle, and between the northern arm of the enclosure and the river, was found an amorphous group of stones which, though of no architectural significance, proved to be the locus of a series of ground stone figures and fragments, among them the anthropomorphic head seen in Fig. 61. This area was called Feature 10 and it brings to mind the "stone workshop" described by Hartman at Las Mercedes (1901: Plate 10).

This constituted the excavation carried out at the Stone Cist habitation component of 20-CB during 1976. In 1977 we returned to the site, in search of activity features on the mounds themselves. The surfaces of Mounds 1 and 2 and Feature 9 were scraped carefully with trowels and fairly large, centrally placed hearths were defined in each of the three features. The hearths were recognized by charcoal concentrations and soil fired to a bright orange, to a depth of about 20 cm. In addition to the central hearth, Mound 2 had four "food processing foci", consisting of large, fairly flat cobbles with noticeable grinding wear, one of which was surrounded by ashes. These were arranged in an arc along the northern edge of the mound, 2-3 m in from the retaining wall. Other lines of placed stones, without

metates or charcoal deposits, were located on the southern part of the mound.

Although a central hearth was also found on Mound 1, no metates or other stone features came to light. Since Mound 1 is higher and larger than Mound 2, a hierarchical division of labor or function seems to be implied. On the lower, but porch-equipped Mound 2, quotidian food processing activities apparently took place. Mound 1 had no such function, but was used as a living area (remnants of burnt cane poles indicate a perishable structure). Many interpretations of this configuration are possible, the most probable being a differential occupation of the two mounds on the basis of social rank or sex.

Later in the 1977 season, Mound 1 was trenched in a spoke-like fashion to sterile soil, in an effort to determine the methods used in its construction (Fig. 54). Interestingly, a layer of fired soil and burnt cane fragments was found at its base, along with a segment of a smaller stone circle which had stood on the spot prior to the construction of Mound 1. Judging by all appearances, a smaller, non-mound structure had existed previously on the site which was razed before the construction of Mound 1 began.

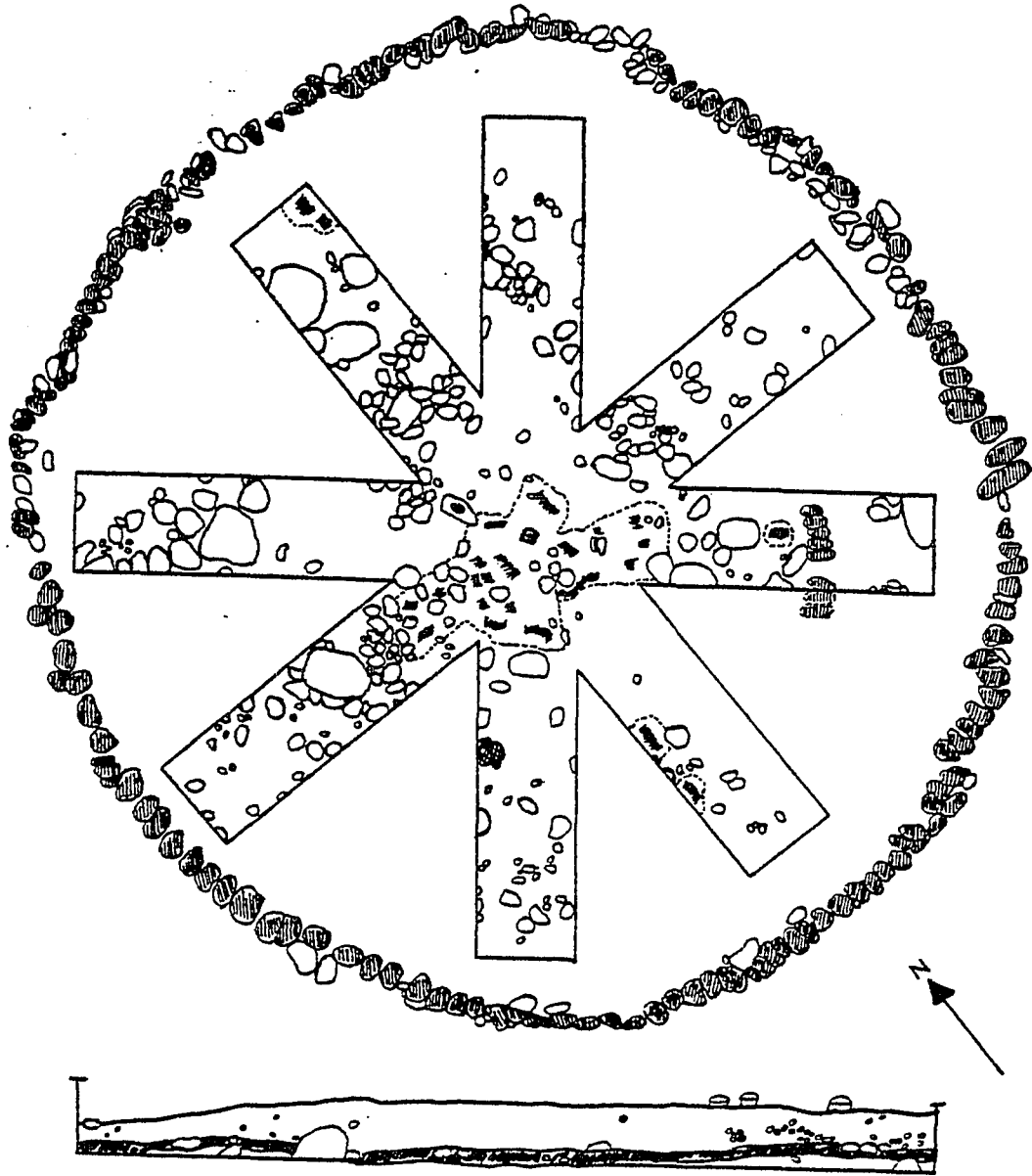
Feature 9, a house circle, was also found to have a central hearth, but no definite metates or other activity foci. Instead of a stairway, it had a small stone-paved ramp sloping up to the single doorway. Two abnormally round river cobbles, each about 25 cm in diameter were found on either side of the doorway; they appeared to be

unmodified. Food processing and other activities may have taken place in front of the house circle, which faced an open patio with several ambiguous stone lines and formations.

The construction of the cobble-paved street leading into the empty plaza was accomplished by first sinking two rows of large flat stones, set on edge, along the edges of the feature at the desired width. Flat cobbles were then laid in rows along the length of the street, the first two rows along the sides being placed partially on top of the border stones set on edge. Later, as the stones forming the bulk of the street gradually settled, the two rows nearest the edge were left tilted downward toward the center of the street. The stones placed on edge did not settle as much, probably having been packed in firmly during construction. This phenomenon may explain why the cobble-paved streets of Guayabo de Turrialba are today as much as 30 cm or more below their border walls: they probably rested on artificial fill which was more susceptible to compacting.

The excavations carried out at La Cabana during '1976-77 exposed perhaps a quarter to a third of the Stone Cist Period architecture at the site. More mounds and platforms continue to the west along the Guacimo River. Many more house circles may be present, as they do not show up in the tall grass-covered pasture as mounds. A cemetery of stone cist tombs (as many as 500) was discovered 200-250 m to the southeast of the architectural features at La Cabana. It had been almost entirely destroyed by looters; the data able to be gleaned from it are described in the section on funerary features.

Mound 1 La Cabaña (20-CB)



0 1 2m

- Charcoal, fired soil
- Tomb
- Cobble wall
- Metate
- ▨ Layer of charcoal, fired soil
- Cobbles
- Subsoil fragments
- Datum

Fig. 54

Diagnostic Ceramic Modes, Types and Groups of the Stone Cist Period
(La Cabana Complex)

The earliest varieties of some of the ceramic groups defined below intermesh with those of the Madera Complex, to judge by present evidence. Few sites dating to the first half of the Stone Cist Period have been excavated by the author, and the gap is evident in the seriation charts.

Paste

A paste which began to be used in the Transitional Period, P9, reaches its greatest popularity during Stone Cist times. It is frequently seen in the groups of the Madera Complex and is diagnostic for the Parismina Fine and Coarse Groups; bits of black and white pumice, along with occasional organic material make it exceptionally light in weight. P13 and P15, both sandy and fairly friable, are the dominant pastes for the La Cabana Complex. They contain a high percentage of non-plastic grains, and more white-colored sand particles than earlier sandy pastes like P5, which is finer and better knit. The pastes of the imported Nicoya polychromes are fine and sandy (P12) and very fine and powdery (pink-firing P14) respectively.

Surface Finish

The distinctive P9 has two common finishes in this period, a mostly scraped or wiped pocked surface (SF15 - Parismina Coarse) or a thickly applied red, orange or reddish-brown slip with very noticeable

stick polishing marks (SF17 - Parismina Fine, and also La Cabana Fine). SF16 is a thin reddish-brown or purple slip, often unpolished except on the vessel rim and lip, where it is also thicker. The inhabitants of the central Atlantic watershed and the Central valley during this period produced a streaky, yellowish-cream slip (decorated in red) with evident polishing striations (SF18) in a fruitless attempt to imitate the striking cream to chalk-white slip adorning much of the polychrome pottery (especially Papagayo) they imported from Greater Nicoya.

Forms

Culinary ollas have two main rim profiles, a tapered lip (often concave on the upper surface) angled at 40-70° (R51), not unlike the Middle Formative R5, and R51, a tapered lip everted to the horizontal with the space at the collar mostly filled by a coil of clay which was applied and then smoothed over, being visible only in the broken profile, Ollas of the Parismina Coarse group almost all have a tapered everted lip on a high collar (R46). Smaller Parismina and La Cabana ollas have varied rim forms (R47, R49, R54).

Most non-culinary vessels of this period are tripod dishes or bowls (R41, R42, R43, R44), with a wide variety of support forms (S29, S30, S33, S35, S38, S42), many of which are shaped like animal heads (S32, S34, S36, S39, S40, S41), apparently mostly felines or other mammals. Annular and pedestal bases are also frequent (SX2, SX3, SX4). A vessel form seen for the first time in this period is the frying pan-shaped censer (R50, H12, H18). Handles of all kinds are much more

numerous than in earlier periods. The chimney-shaped vessel (R40) of Mercedes White Line persists in this period.

Decoration

The tradition, first seen in El Bosque and La Selva, of purple paint in unpolished or roughened zones on an otherwise slipped and polished vessel continues in the La Cabana complex; white paint is often used in a similar fashion (DX4). Incising or engraving up to 1 mm in width (DX5) is common, appearing for the first time on the interior rim of tripod dishes (R42, R43). Thin white lines executed with a multiple brush (D49, D52) are typical of the Stone Cist Period, as are tear drop-shaped punctations, usually done on an applique fillet, which takes on a chain-like appearance. A band of jabs done with a multiple-pronged tool (D51), often on the lip of Parismina ollas, recalls the multi-point drag and jab of Middle Formative complexes. Punctated applique elements along the lower exterior lip of ollas (D57, D58) are very common and represent the transformation of D39 so often seen on Turrialba Coarse and La Selva Sandy Applique of the Transitional Period.

Resist negative painted decoration (D36) continues in Stone Cist times, but usually in diamond shapes, dots or other geometric motifs which echo those of the distinctive yellow line decoration (D61) which is seen only in this period. Impressive amounts of Nicoya Polychrome pottery (D53) were imported into the Atlantic and Central regions of Costa Rica during this period, and probably inspired unsuccessful local imitations, of which a finger-painted red on streaky cream or

yellow slip is the most obvious (D56).

Types and Groups

Most of the following ceramic units were first described by others (Lothrop 1926; Stone 1966; Kennedy 1968; Aguilar 1972). Lothrop's nomenclature was too general as a rule; he simply used descriptive modifiers like "Black Line Ware", "White Line Ware", sometimes (but not often) combining pottery that was centuries apart in the same "ware". Stone followed Lothrop's terminology, as did Kennedy for his later material. Whereas Kennedy subdivided his "wares" overmuch in the earlier part of his sequence, he occasionally combined pottery as much as 1000 years apart in his later ceramic units: this explains the lack of a perceptible "time slope" in his ceramic seriation chart (Kennedy 1968: 38). Mixed cultural stratigraphy in his pits probably played a part as well.

Aguilar's 1972 publication on the Stone Cist Period site of Guayabo included descriptions and very limited illustrations of a series of non-taxonomic ceramic units, predominantly from what are here called the Transitional and Stone Cist Periods. In a descriptive sense most of his pottery types do represent discrete prehistoric cultural components or time periods at the Guayabo site. His chronology, however, is flawed, simply because his stratigraphic excavations were conducted in a multi-component site where the stratigraphy was radically perturbed by large-scale mound fill and other architectural activities in the Stone Cist Period. Since many of Aguilar's classes function perfectly well as descriptive units, and since he was the

first to apply proper (geographical) names to viable, comprehensible types or groups, his usage has been followed in those cases where a reasonably correct temporal placement also obtains (the problems with Kennedy's classification and nomenclature have been discussed above). In many instances, Lothrop's original adjectives (White Line, Yellow Line, etc.) form part of the type or group name. Where the author's more extensive investigations have amplified or altered Aguilar's temporal and/or spatial framework, different group names are used. In these cases, some of Aguilar's original type names will be employed when the groups are split into two or more types, as the data base becomes stronger.

Cot Black Line Group (TG26)

Paste - P13

Surface Finish - SF17

Form - The only forms known to date are open dishes or bowls (R42, R43, R44), usually tripod (stylized versions of S40), with curved, tapered supports in the shape of animal heads.

Decoration - Diagnostic are two black lines running circumferentially on the interior rim; the paint fades easily and may be organic. Usually black-painted designs of a geometric style somewhat like that of Irazu Yellow Line appear on the vessel exterior. Sometimes the black lines on a red-orange slip are augmented by red painted zones, making a rudimentary polychrome.

Remarks - Although it appeared very infrequently in stratigraphic pits, Cot Black Line seemed to be slightly earlier than the rest of

the La Cabana complex groups. The faded polychrome varieties probably represent another failed attempt by the Atlantic potters to reproduce the Nicoya product. Lothrop (1926: Plate CLIX) illustrates several rather atypical examples of this group. His Type B Black Line Ware (Plate CLX) has no resemblance to the Cot group, as he himself notes. It is, in fact, as much as 1000 years earlier, associated with the Zoned Bichrome II and Transitional Periods.

Parismina Fine (TG27) and Parismina Coarse (TG28) Groups

Paste - P9 Surface Finish - SF15, SF17

Form - Some chimney-shaped vessels (R40) with hollow tripod supports; ollas with a horizontally everted, tapering lip (R46) or a slightly expanded, indented one (R47). Strap handles are frequent (H13, H14, H16).

Decoration - A row of jabs made with a multiple-point (2-4) tool, usually in an unslipped band along the top of the rim (R46); this technique recalls the drag and jab of Middle Formative times. On Parismina Fine, stick figures with rubbery-looking bodies are formed from strips of clay lightly applied to the vessel exterior. Cross-hatched white lines (D52) sometimes occur on the Fine group.

Remarks - The main difference between the two Parismina groups is vessel size and presence of decoration. The Coarse group rim sherds are almost always heavily eroded and crumbling; what slip there is tends to exfoliate from the soft, pitted paste. P9, the light, pumice-tempered paste, is diagnostic for the Parismina groups. As it

appears as early as AD 500, P9 probably represents a spatial variable more than it does a temporal one; it occurs side by side with pastes as different as P3 and P15, although it reaches its greatest frequency in the Stone Cist Period. Lothrop (1926: Plate CLXXc, d) illustrates two Parismina Fine vessels, calling them Red Ware; in the same Plate is a Zoila Red vessel (d) which is probably some 600-800 years older.

Trade Pottery

Mora Polychrome (TG29), Highland/Birmania Polychrome (TG30) and Papagayo Polychrome (TG31), all Middle Polychrome (AD 800-1200) types from Greater Nicoya, are found in small quantities in Stone Cist Period sites. Their numbers, however, are much greater than the Early Polychrome and Zoned Bichrome sherds so rarely found in the Atlantic region. Commerce between Greater Nicoya and the Atlantic watershed must have increased considerably during Stone Cist times, but it is not known what the Atlantic peoples traded for the fancy polychromes. Atlantic watershed sherds are virtually unknown from the Greater Nicoya heartland, so it was probably not comestibles or something carried in pottery vessels. In all likelihood, the trade articles were luxury or ritual goods from the tropical forest, like colored feathers, or animal skins; cast gold jewelry, scarce in northwest Costa Rica, may also have been traded.

The varieties of Mora, Highland/Birmania and Papagayo found in the Atlantic watershed are usually the later ones, which carried over into the Late Polychrome Period (AD 1200-1500) in Greater Nicoya

(Richard Accola, personal communication). Interestingly, these three types seriated in the same order here as they did when they were originally defined and seriated by Baudez (1967: 133-144).

Bere Red Type (TG32)

Paste P13 (P8) Surface Finish - SF17 (streaky)

Form - A simple hemispherical bowl (R29 or R45), blunt-lipped and invariably with an unslipped or whitewashed pedestal base (SX2, SX3), is the only form seen as yet for this type.

Decoration - Undecorated, unless the occasional traces of a white-wash on the pedestal base are taken as decoration.

Remarks - This type seems to have been one of the common food dishes in this period. It was a frequent find in the stone cist tombs at 5-ZT and in the 40-FN middens. Kennedy (1968: Plate LI) calls it Guayaño Red. Aguilar's nomenclature (1972: 80) has been followed here.

Tayutic Brown Incised/Engraved Group (TG33)

Paste - P13 Surface Finish - SF11

Form - By far the most common form is a bowl or dish (R42, R43, R53) with animal head effigy supports (S34, S40). Nubbin and mammiform solid tripod supports also appear (S30, S35, S37, S38). A less frequent vessel form is the small slightly incurved bowl (R44) with small solid nubbin supports (S29); this form may have a handle like a basket. Annular bases (SX2, SX3) are also seen, as are supports in the form

of standing human figures (Lothrop 1926: Plate CLIXg).

Decoration - Fine line engraving or incision (DX5) is the diagnostic mode. Typically it occurs in circumferential panels on the vessel exterior; sometimes the interior rim is also decorated. Groups of vertical lines alternating with crosshatching, gouged-out dots or triangles, wavy lines, zig-zags and checker board motifs are common. Lines engraved in a basketry-like pattern appear to be an earlier motif, as do parallel diagonal lines with a "toothed" motif along the side. These grade into the incised versions of La Selva Brown. White pigment was frequently rubbed into the engraved lines of Tayu-tic, and some applique decoration (D57) is seen.

Remarks - This is the oft-cited Chocolate Ware, so named by Lothrop (1926: 226, 325). The name was continued by Stone (1966) and Kennedy (1968). Again, however, it must be emphasized that what Lothrop called one "ware" is in fact as many as five or six different types, with distinct spatial distributions and as much as 1000 years separating some of them. The technique of engraving or incising designs on a brown slip is one which can be traced through at least two periods (Transitional and Stone Cist), in various motifs and combinations with other ceramic modes that are amenable to computer-assisted stylistic seriation. Unfortunately, this was beyond the scope of this dissertation, but will (along with many modal series) be carried out in the future.

Although brown incised/engraved pottery is common in Greater Nicoya at this time, there would seem to be no justification for



positing diffusion of the style from there to the Central and Atlantic watershed regions. It is simply too plentiful in the Atlantic zone to justify such an hypothesis; neither does it appear suddenly in the region, undergoing instead a gradual local evolution. The "window and cross" motif, surrounded by vertical lines, so common in Mora Polychrome does appear incised on Tayutic vessels, however.

Although Aguilar's nomenclature is used (1972: 106), the Tayutic group here includes pottery which may fall into Aguilar's Chitaria and Jicotea Incised types (1972: 42, 45), which he considered to be earlier. In view of the mixed stratigraphy at Guayabo, judgement on the validity of those types will be withheld pending better cultural stratigraphy at other sites. That the Tayutic Group will be subdivided is certain; as has been noted, it is considered here to grade into the La Selva Brown, a considerably earlier group.

La Cabana Fine Slipped (TG34) and La Cabana Coarse (TG35) Groups
Paste - P13, P15 Surface Finish - SF16, SF17

Form - La Cabana Fine Slipped is characterized by small ollas (R47, R49, R54), slightly incurving tripod bowls (R44), frying pan-shaped censers (R50), jars, bottles and various other forms, including infrequent figurines not encountered in the stratigraphic pits. Smaller versions of the long-legged floreros of the Transitional Period continue into this group. Supports include zoomorphic effigy forms (S32, S36), solid conical tripods (S37) and annular bases (SX2, SX3, SX4).

La Cabana Coarse is apparently a culinary pottery, mostly limited

to large ollas with tapered, 45° angle rims (R51) or rims folded to the horizontal and filled in at the collar area (R52). Zoomorphic effigy handles (H19) and bow-like handles (H15) are common, as are strap versions (H13) applied to one side only, like a pitcher.

Decoration - One variety of La Cabana Fine Slipped has unpolished purple slip zoned with polished red-orange slip. This variety also shows applique half-disks at the exterior lip (D58) which are punctated; a zoomorphic face is often seen modeled on one side of the vessel, and crisscrossed lines of white paint made with a multiple brush, appear on the polished slip (see Appendix 7, La Cabana grave goods; also Lothrop 1926: Fig. 239c, Fig. 237). Lothrop identifies this zoomorphic face as that of an alligator; this is open to doubt, unless it was meant to be a composite man-alligator. It is a very common motif in this period, the same one that appears on S36 and other similar effigy-head supports. Punctated applique fillets, chain-like in appearance (D55) are another hallmark decorative mode for the La Cabana groups. Yellow paint sometimes occurs on the unpolished purple zones, frequently along a motif of carelessly incised lines and jabs (D59), a degeneration of the Transitional DX3. Other varieties of La Cabana Fine are slipped in red or orange with only limited plastic decoration.

Remarks - The La Cabana groups are the most frequently found ceramics of the Stone Cist Period. They, along with certain varieties of Parismina Fine and Reventazon Cream Washed, make up what Lothrop (1926: 346) called Stone Cist Ware. This pottery is decorated with a plethora of applique motifs in an overloaded, baroque style, and is

usually found in stone cist tombs. Stone (1977) illustrates a vessel of La Cabana Fine Slipped found with a European glass bead.

Aguilar's (1972: 77) Pavones Ordinario is probably La Cabana Coarse; he was unable to fix it in time, due again to mixed cultural deposits. Kennedy (1968: Plates LV, LVI, LI) illustrates La Cabana Coarse as Cristo Incised, Cristo Applique, Cristo Red, Cristo Coarse, White Line and Unclassified Cardel.

Cartago Red Line Group (TG36)

Paste - P13

Surface Finish - SF18

Form - Bowls with an incurving, tapered lip (R44) or an outslanting one (D42), both with hollow conical supports, vented on the interior side (S33) or zoomorphic effigy supports (S40). Pottery stands (R48) for round bottomed vessels are common in this group (see Lothrop 1926: Plate CLXXXVII). Animal effigy vessels are less common.

Decoration - Thick (probably finger painted) red lines over a streaky cream to yellow slip; geometric patterns or stylized zoomorphic motifs like those of Chiriqui, Panama (see Lothrop 1926: Fig. 195) are usual.

Remarks - This group (Lothrop's Red Line Ware, Type A) has been well described and illustrated in the literature. It probably represents the efforts of Atlantic potters to copy the white slipped polychromes of Greater Nicoya. Aguilar's nomenclature (1972: 114) has been followed here; the group seems to be equally distributed throughout the Central valley and central Atlantic watershed at late sites. If Hartman's (1901) grave lots from Chircot and Mercedes are broken down

into types and groups as defined here it is seen that Cartago Red Line probably carried on into historic times; although not directly associated with glass millefiore beads, it has been found with groups that were so associated in other tombs.

Irazu Yellow Line Group (TG37)

Paste - P13

Surface Finish - SF17

Form - Bowls with a tapered, slightly incurving lip (R44), usually without supports, or rarely with a pedestal base (SX3). Dishes with outslanting sides (R43) are also seen, either with animal head effigy supports (S36) or tripod supports in the form of an armadillo with its paws in its mouth, resting on the elbows. Hollow conical tripod supports vented on the interior are frequent (S33).

Decoration - Diagnostic are yellow lines of a thick pigment (their raised texture is easily perceptible) painted in brick-red zones applied over a polished orange slip. Geometric and very stylized zoomorphic motifs are typical, again similar to those seen on painted Chiriqui pottery (Lothrop 1926: Plate CLVII). Applique fillets, smoothed in, appear as tails on zoomorphic effigy vessels (D54).

Remarks - Like Cartago Red Line, this group has been well described and illustrated in the literature; it appears to be confined to the Central valley and central Atlantic watershed. Nomenclature follows Aguilar (1972: 100).

Reventazon Thin Cream Washed Group (not found stratigraphically)

This group was encountered in the La Cabana (20:1-CB) Stone Cist Period cemetery, as well as in stone cist tombs at 5-ZT. It is a thin-walled, fragile but skilfully made pottery, usually in small olla (R51) or bottle shapes. Finger painted red lines are common.

Lothrop (1926: Plate CLIV) called this group Red Line Ware, Type B, and Aguilar (1972: 91) calls it Turrialba Bicromo, noting its stylistic similarity to Tarrago Galleta (Biscuit) of Greater Chiriqui (Linares 1968). As the variety found at La Cabana was much thinner than that typically found at Guayabo, a different group designator has been tentatively formed, with an eye to future subdivision.

Lithics of the Stone Cist Period

Flaked Stone

The flaked chert axe found in the auxiliary tomb at 4-IT-1, and the large tanged projectile point found in a stone cist tomb at Najera (Figs 150A,175A) are the only flaked stone artifacts recovered from Stone Cist Period sites (excluding stray flakes and crude volcanic stone cores). Axes like the 4-IT example are numerous in the collections of the MNCR; most came from the large Stone Cist site of Aguacaliente in the Cartago valley. The 4-IT example has marked wear (polishing) along the center of both sides. Such tools were probably used as splitting wedges in the felling of trees.

The 8-NJ point has absolutely no precedents in Stone Cist lithic

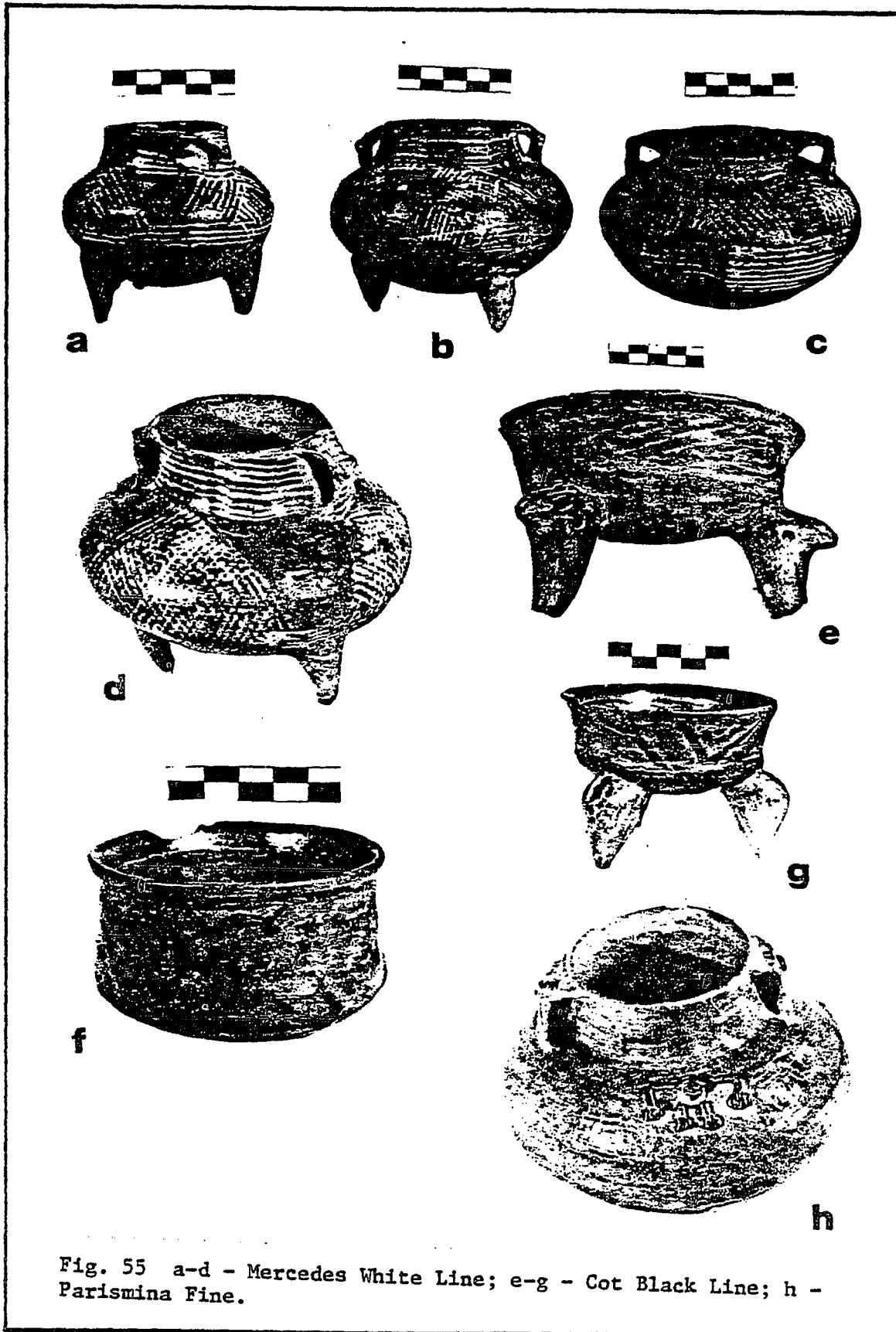


Fig. 55 a-d - Mercedes White Line; e-g - Cot Black Line; h - Parismina Fine.

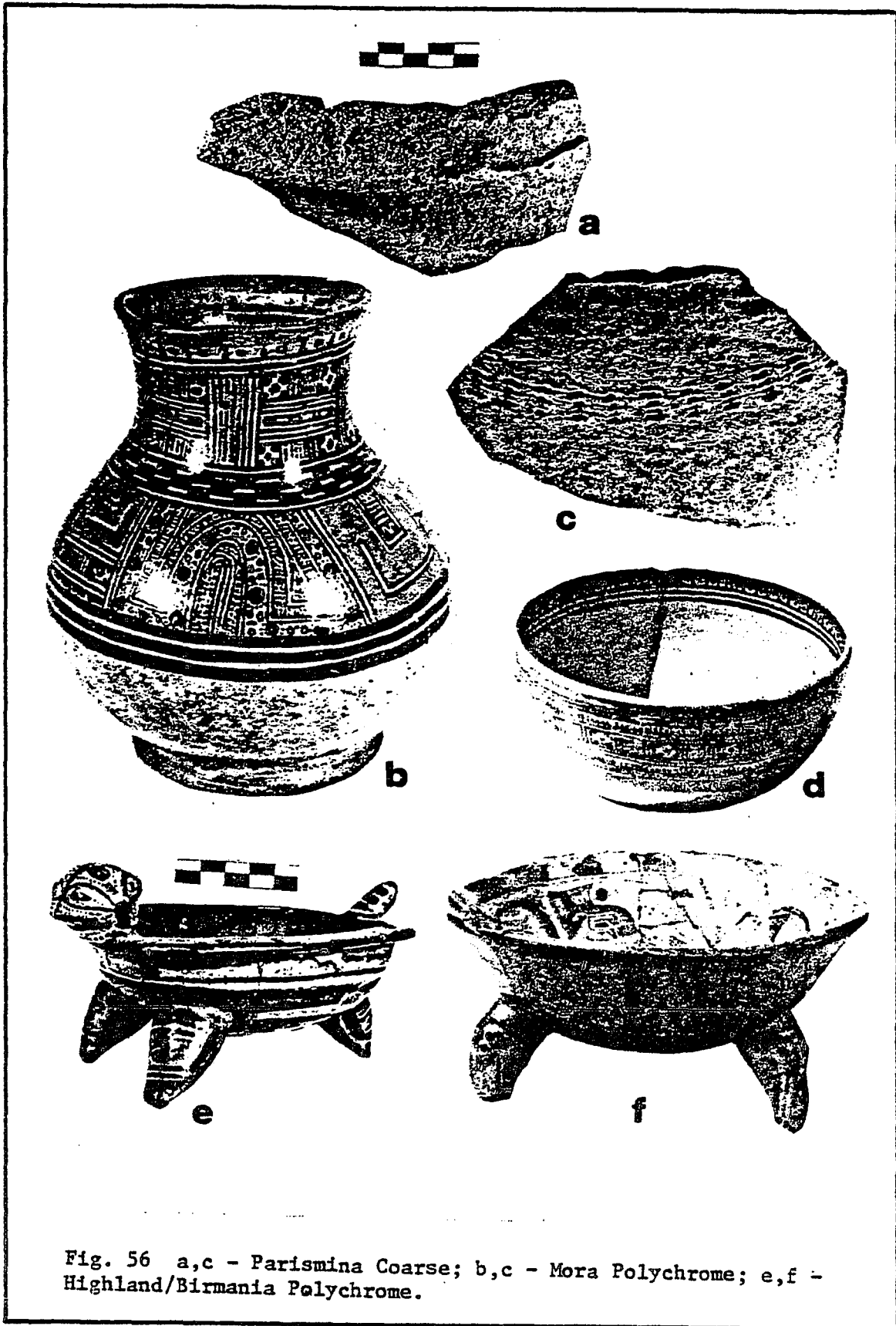


Fig. 56 a,c - Parismina Coarse; b,c - Mora Polychrome; e,f - Highland/Birmanian Polychrome.

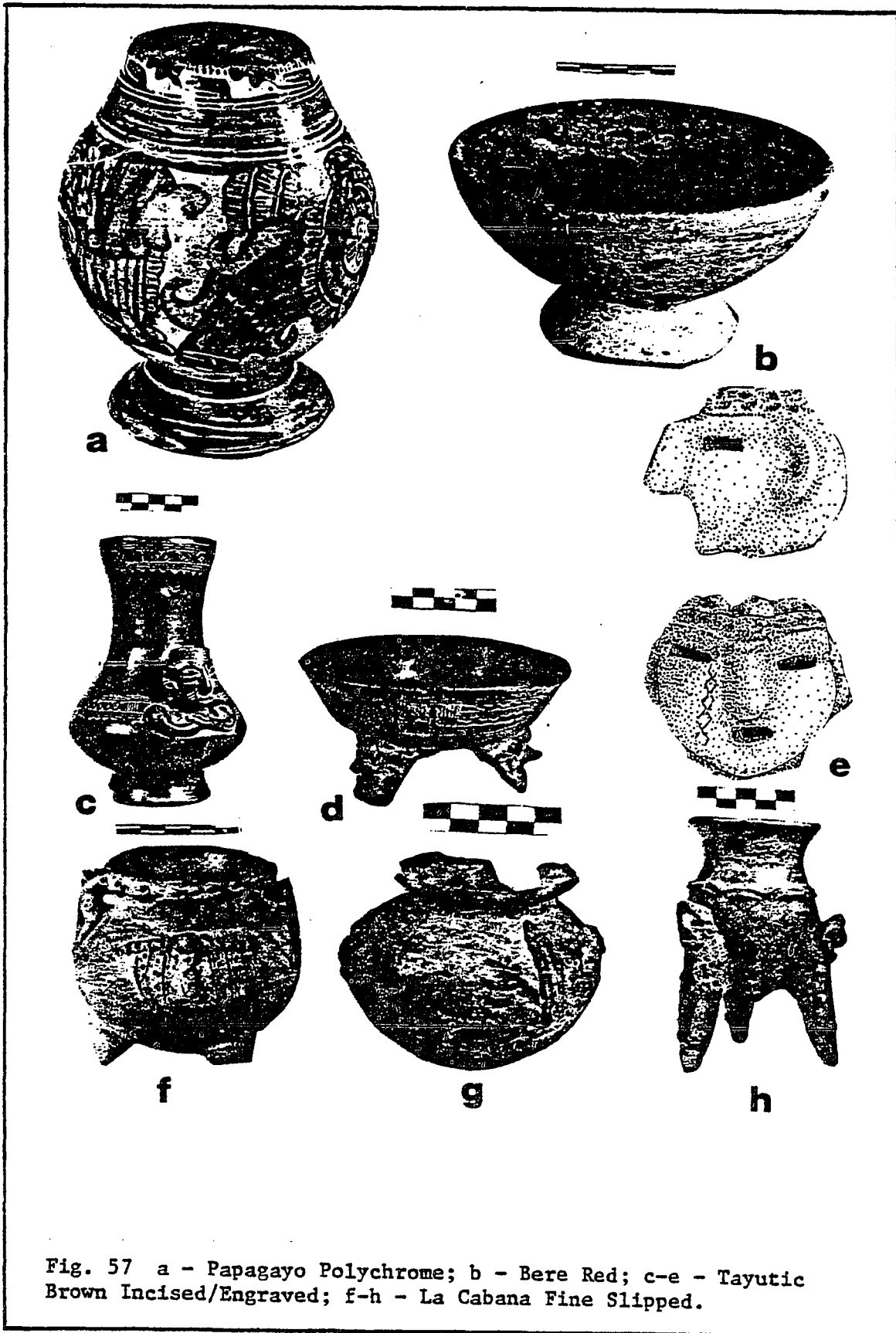


Fig. 57 a - Papagayo Polychrome; b - Bere Red; c-e - Tayutic Brown Incised/Engraved; f-h - La Cabana Fine Slipped.

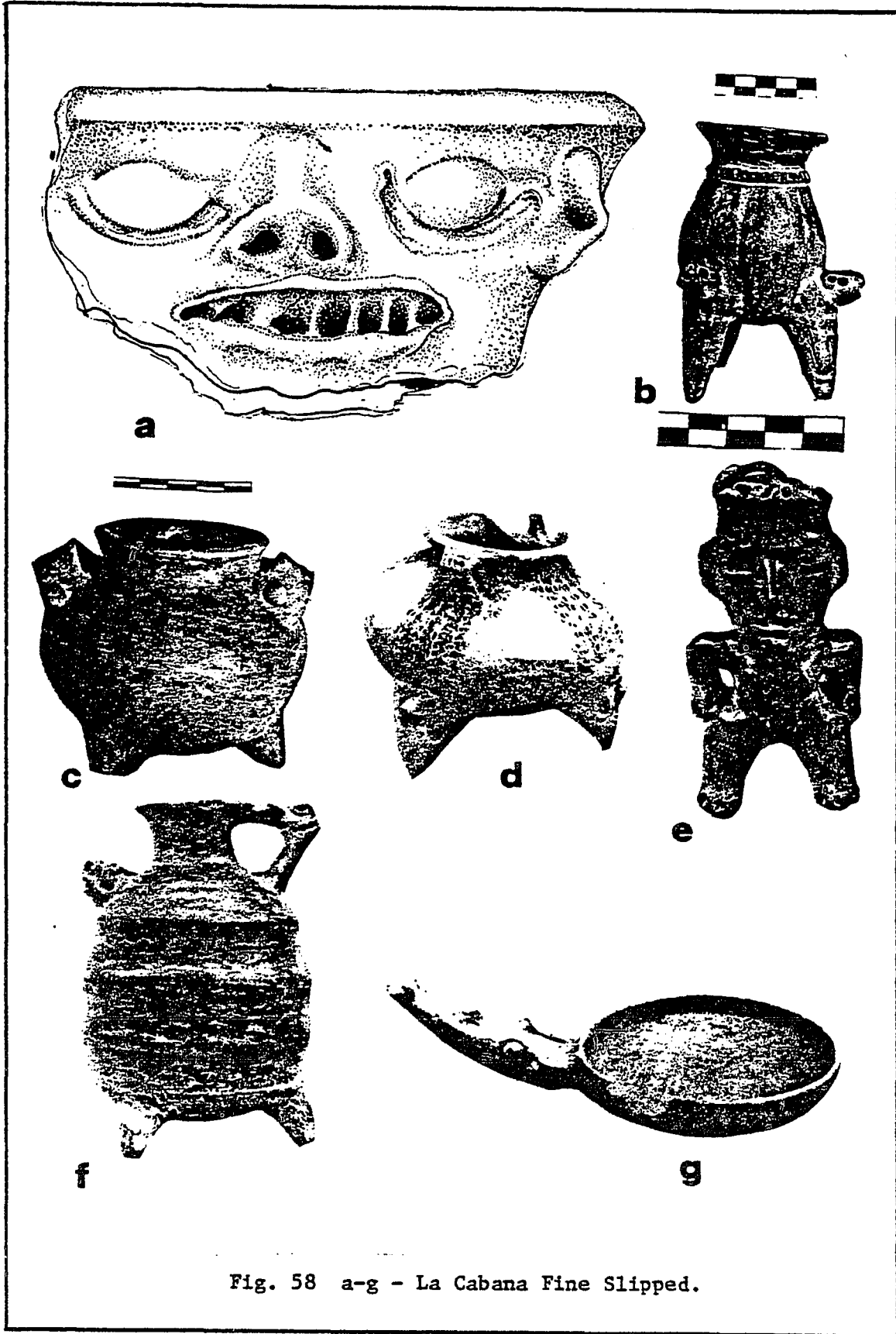
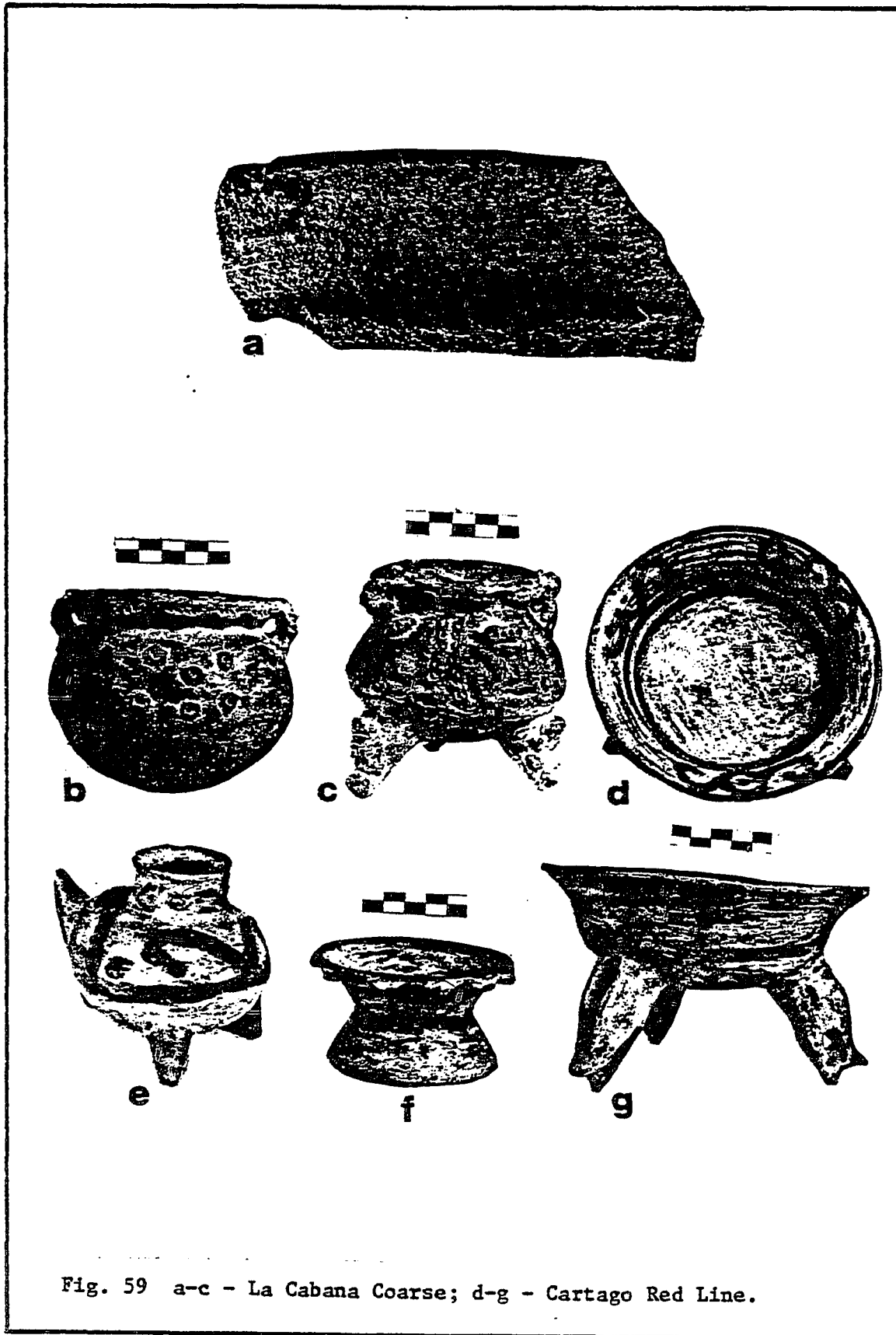
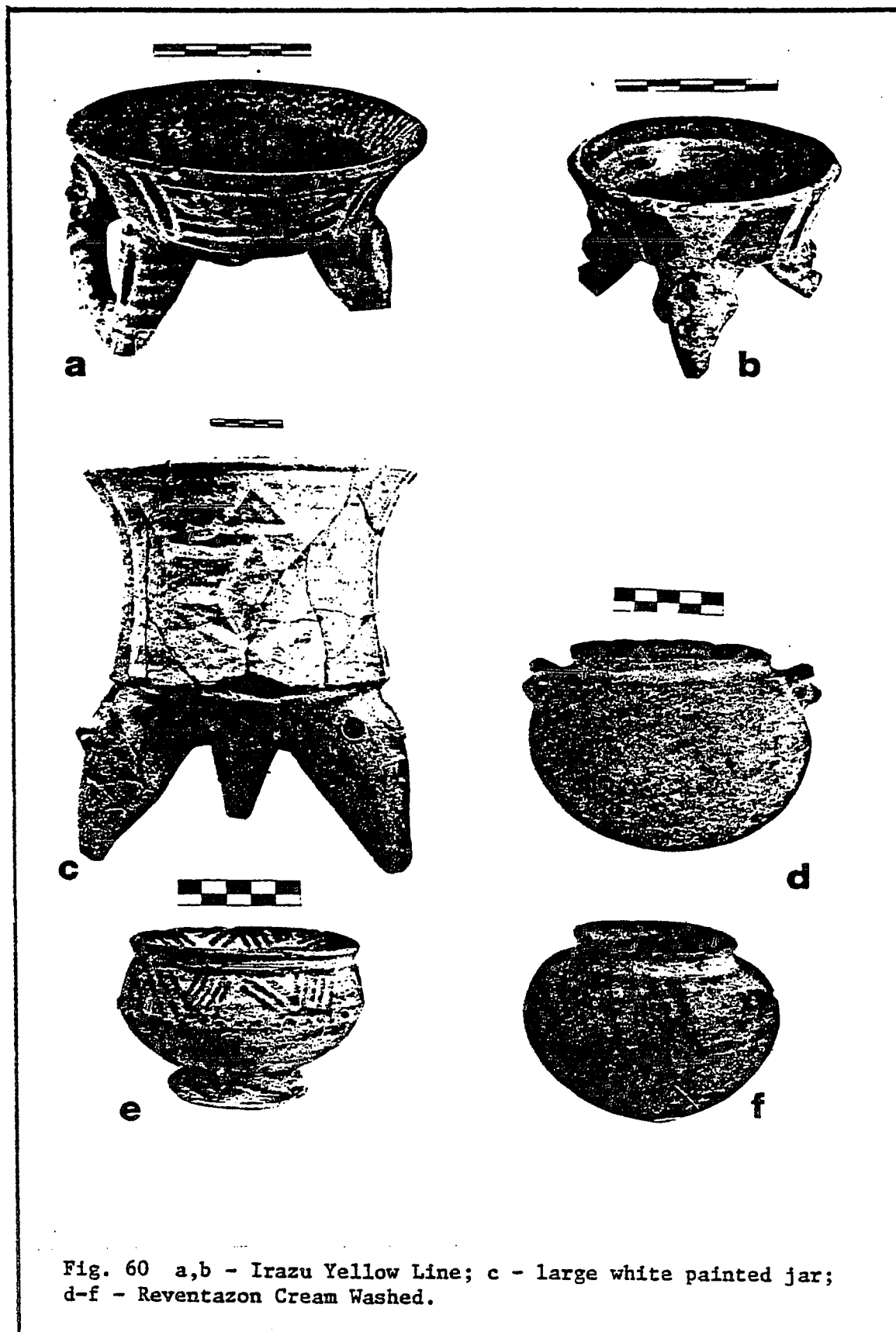


Fig. 58 a-g - La Cabana Fine Slipped.





technology, insofar as it is known. The Spanish chroniclers spoke of spear points of palm wood as a rule; more data are needed if the point is to be securely placed in this period.

Ground Stone

An interesting aspect of Stone Cist occupation sites investigated by the author has been the lack of specially prepared manos or mullers so numerous in earlier periods. The discovery of the work areas on Mound 2 at 20-CB revealed that the everyday metates were also virtually unmodified (merely large flat cobbles), which suggests that daily grinding activities were accomplished as they were in historic times, by rocking a fairly large (40-50 cm) cobble on edge across another flat stone. Edge ground cobbles, battered hammerstones and small cobbles with a pit on each side were all frequent surface finds at 20-CB.

Small polished celts, somewhat fatter in cross-section than those of earlier periods, were found in several tombs at 5-ZT. In the absence of skeletons, it may be feasible to interpret these as male burials, but this is not at all certain yet; the celts are thought to be wedges for tree splitting, as many show spalling at the butt end from hammer blows.

The importance of the ceremonial metate continued into Stone Cist Period. As was emphasized previously, such luxury articles were almost certainly not used to process daily comestibles, being confined instead to ritual use and/or high status social classes. The

armadillo effigy metate from Tomb 2 at 4-IT is a common style, as are jaguar effigy models with the tail attached to one of the legs. Tetrapod metates are apparently confined to this period and show close, stylistic affinities with those of Chiriqui. Circular, pedestal base examples are also seen only in the Stone Cist Period. Virtually all of the stone carvings in the Minor Keith Collection were of Stone Cist date (Mason 1945). Most of these lack a raised rim around the edge like that found on earlier ceremonial metates.

Anthropomorphic stone figures, the most typical of which are male warriors brandishing an axe and carrying a trophy head and females holding their breasts, are from this period, as are the so-called sukias, seated figures holding a tube or cigar in one hand. These probably represent shamans who cured by sucking out evil spirits or by blowing smoke on the subject. Standing figures frequently have the legs joined by a stone section. Single human heads are only found in Stone Cist sites and many appear to be portrait heads of actual individuals, instead of figurines in a stylized pose like those of warriors. A crude or unfinished stone head was found at 20-CB. A dark, very porous basalt (probably easier to carve) was frequently used in the manufacture of ground stone artifacts at 20-CB.

Settlement Patterns

House Forms and Village Plan

Beginning about AD 900-1000, settlements in the central Atlantic watershed assumed a nucleated plan, wherein small (10-15 m) house

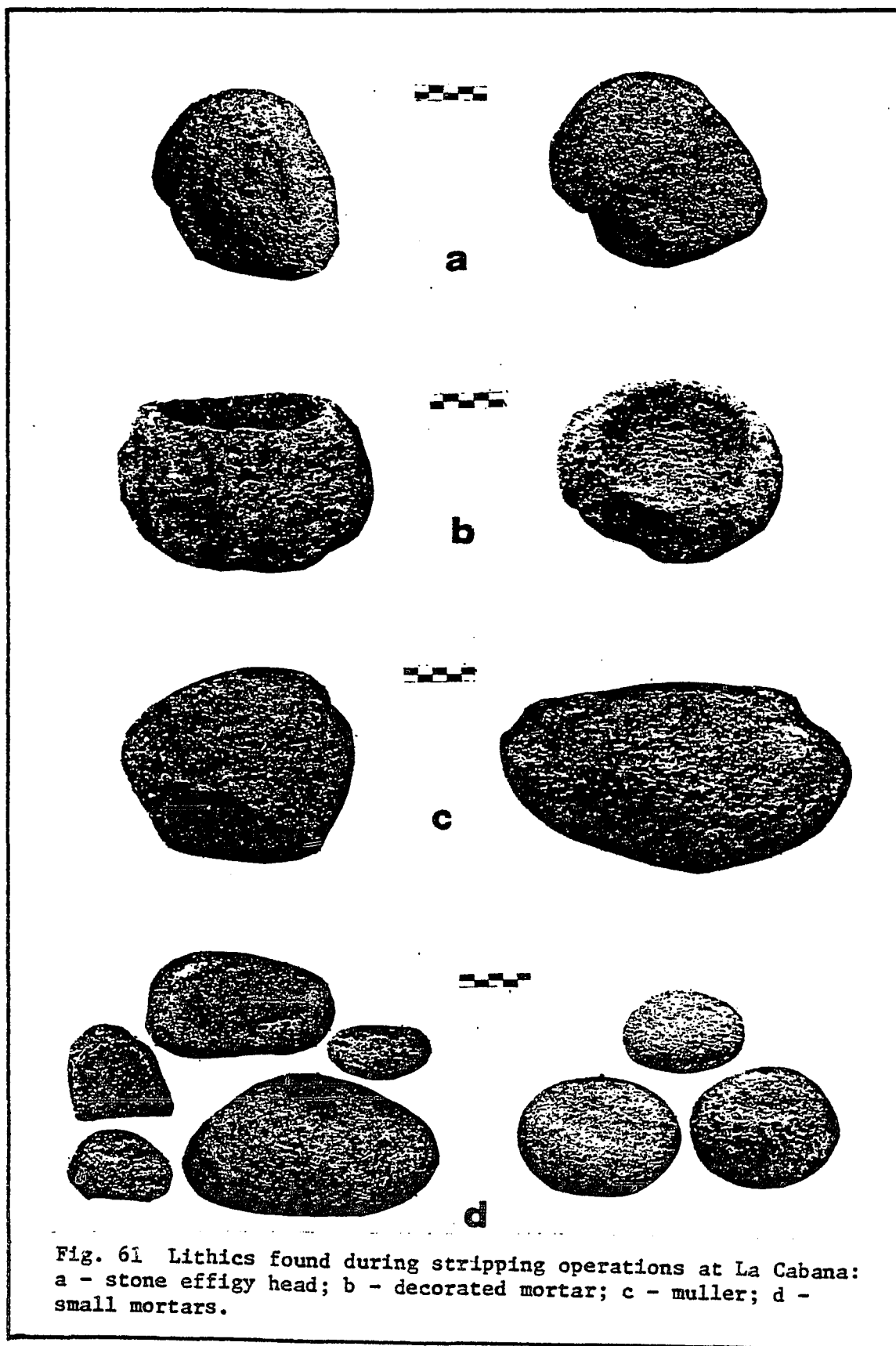


Fig. 61 Lithics found during stripping operations at La Cabana: a - stone effigy head; b - decorated mortar; c - muller; d - small mortars.

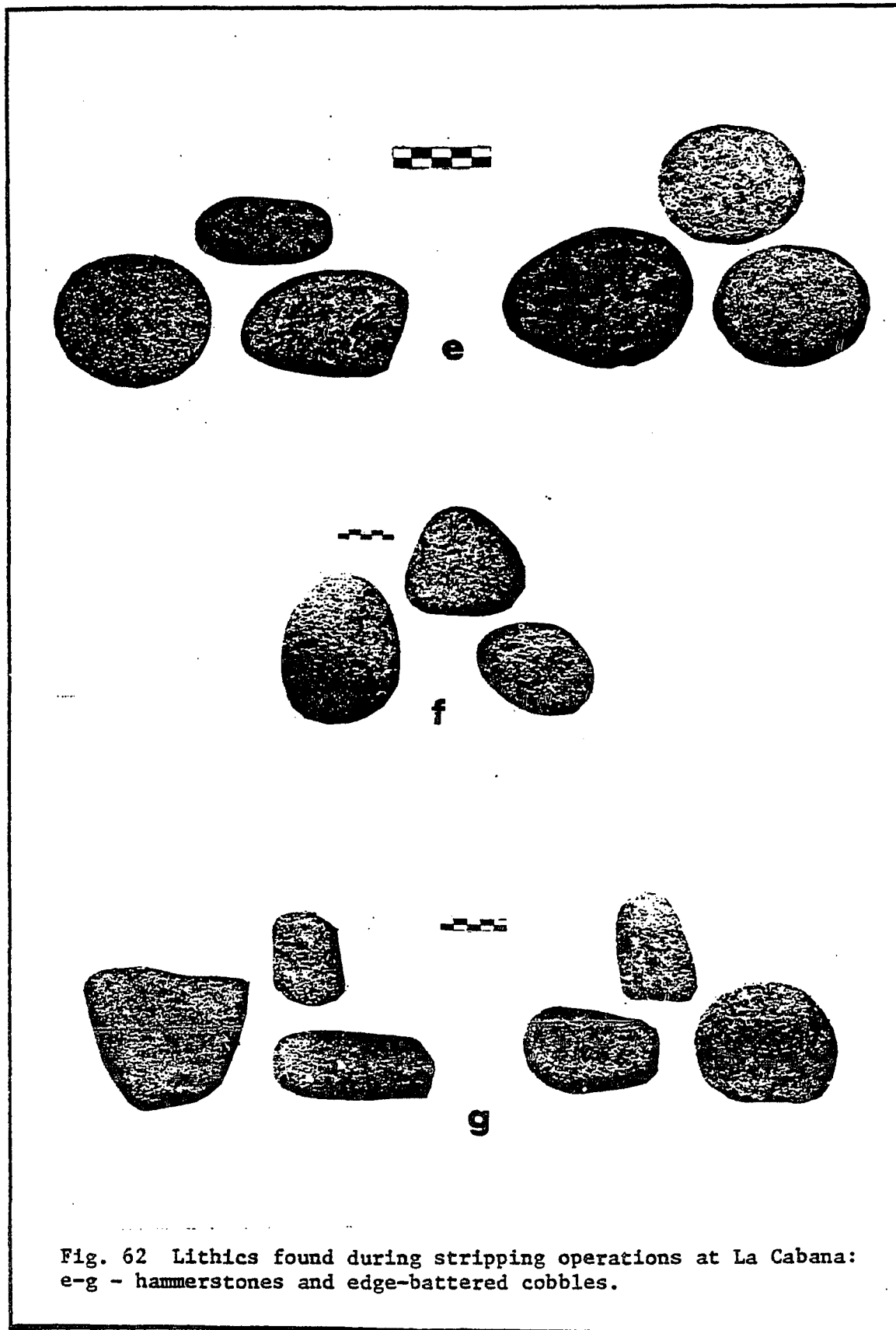


Fig. 62 Lithics found during stripping operations at La Cabana:
e-g - hammerstones and edge-battered cobbles.

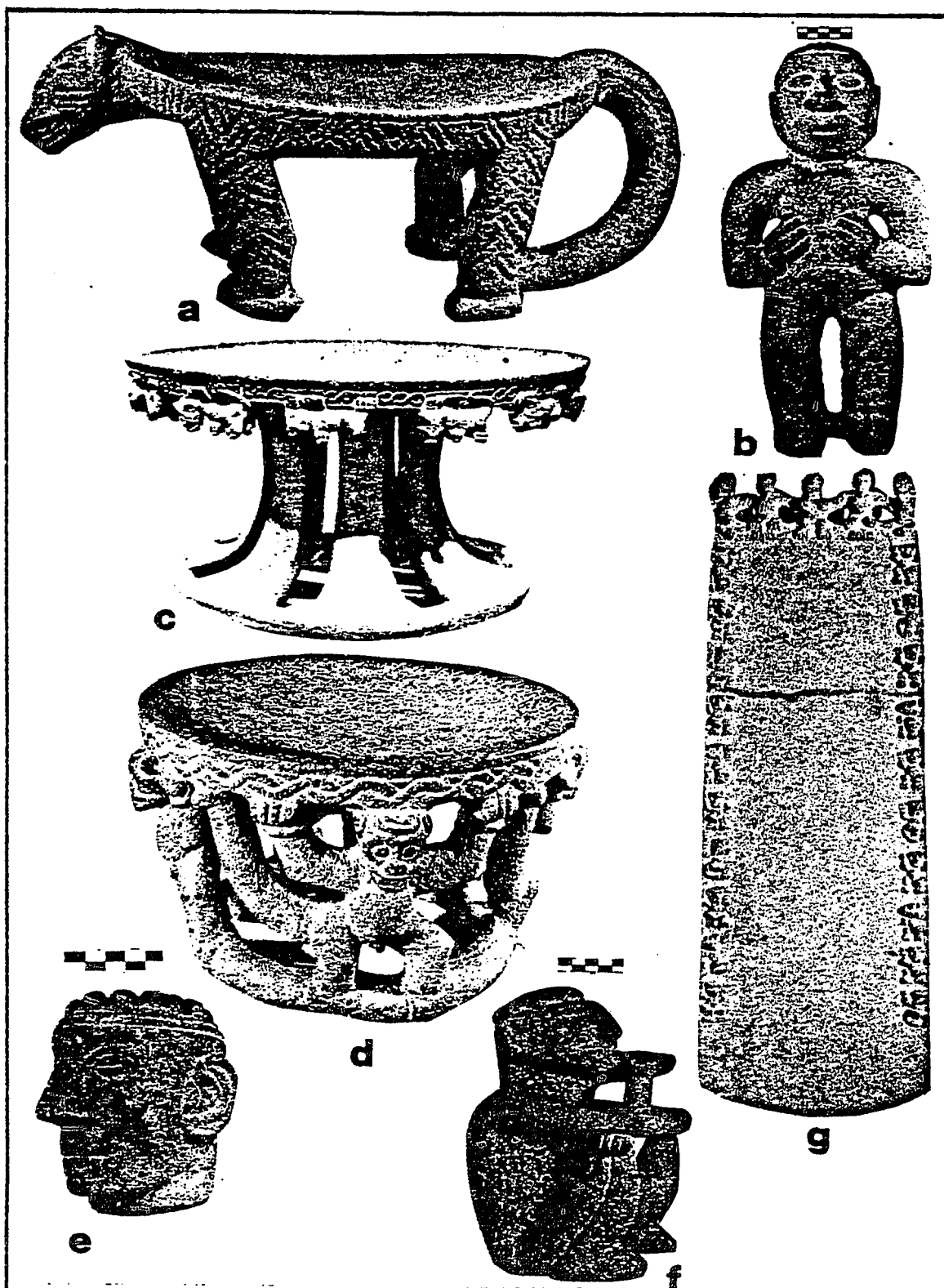


Fig. 63 Lithics of the Stone Cist Period: a - tetrapod jaguar ceremonial metate; b - human figure holding breasts; c, d - ceremonial metates with annular bases; e - stone effigy head; f - "sukia" or shaman effigy; g - monolithic tomb marker.

circles were grouped around a central (probably ceremonial) zone characterized by larger earth filled mounds (20-25 m in diameter and 2-5 m high) with circular retaining walls made of cobbles. The central zone also contains cobble paved streets, high status burials and sometimes a plaza-like space. The larger mounds were the dwelling place of individuals of high rank, who probably held combined political (military) and religious power.

At La Cabana (20-CB), the stairways off the two major mounds, descended into a lower plaza area as did three cobble paved streets entering from different parts of the site. Surrounding the plaza was a wall burial or crypt-like feature containing small tombs or caches with prestigious ceramic artifacts. It is tempting to interpret this configuration as the formal place of contact between the ruling class and the lesser population of the site, perhaps for purposes of ritual redistribution of goods. This, of course, reinforced the leaders' status, which was inherited and probably traced through matrilineal clans as it was in historical times (Bozzoli 1975).

The presence of two major mounds at La Cabana, one with food processing foci and one without, would seem to indicate a different function and perhaps population, for each mound. Whiting and Ayres (1968: 130), using ethnographic data, found that cultures that are characterized by curvilinear houses are three times as likely to practice a polygynous form of marriage as those with rectilinear houses. In terms of the two mounds at 20-CB, the taller Mound 1 could be construed as the residence of the ruling individual or family, while Mound 2 housed auxiliary wives or other persons having

to do with the maintenance of the Mound 1 inhabitants. Functional, quotidian metates are considered as female-associated tools in this case. This interpretation is strengthened by a passage in a document written by Fray Agustin de Cevallos and sent to the Spanish king in 1610, in which he describes several customs of the peoples then living in eastern Costa Rica: "... they live in palenques, which are forts built in native fashion ... the chiefs have the women that they desire all in the same house and the common people generally have one, although it is easy to increase the number ..." (from Lothrop 1926: 446; underlining added).

Naroll (1962) has suggested that the population of archeological sites may be roughly estimated by calculating the total floor area in meters and dividing by ten; his formula was based on an analysis of worldwide ethnographic data. LeBlanc (1971) added information from other historical groups (two from northern South America) and tested Naroll's formula. He concluded that, while care must be taken to distinguish storage, work areas and the like from actual living quarters, the figure of roughly 10 m² per person in a roofed house was reasonably correct.

Applying the formula to the La Cabana mounds, we get a total of approximately 25-30 individuals in each of the two large mounds. Feature 9, the smaller house circle, would have held about 12-15 persons. It should be remembered that the excavated section of the site represents only a fraction of its total extension, although it does seem to include an important focus of activity at the site. If the population of Mounds 1 and 2, apparently some kind of elite group,

is conservatively estimated at 40, then the total site population at any one time must have been several hundred. It is assumed that the perishable structures which existed on the mounds corresponded rather closely in size to the diameter of the retaining wall. The size of both the larger mounds and the smaller house circles at La Cabana corresponds well with that of similar features at Guayabo, Las Mercedes and other Stone Cist Period occupation sites. The walled enclosure feature has been described for two other sites, Las Mercedes and Costa Rica Farm. At the latter site, it is associated with two adjoining mounds with stairways, and has a cobble paved street running from it, much like the arrangement at La Cabana (Lothrop 1926: 462, from a field sketch by Alanson Skinner).

Relationships between Stone Cist Period sites remain unclear. There is no doubt that they are numerous: there are probably hundreds of mound sites like La Cabana in the Atlantic watershed region, to judge by Lothrop's (1926) Appendix 1, and information given verbally to the author over the last five years. In many cases, quite large and apparently important centers are relatively close to each other. The site complex of 3-MT, 4-IT and 5-ZT near Turrialba undoubtedly had a major Stone Cist architectural component, complete with wide cobble paved streets and important tombs. Guayabo, 10 km distant, can be described in exactly the same terms. In between these two sites is Najera, also with large mounds, a walled enclosure, and paved streets. The same pattern holds true in the lowland plain: within a 4 km radius around Guacimo, the author has been shown four sites of the order of La Cabana, if not larger.

Another question, of course, is whether these sites were occupied contemporaneously. The answer is almost certainly no, but then why were so many small architectural sites built so close together through time? The largest of the Stone Cist mound sites so far known and studied (Guayabo, Las Mercedes, the 3-MT, 4-IT, 5-ZT complex) are all multi-component and may have been continuously occupied for hundreds of years, perhaps because of a favorable ecological placement or because the locality had acquired an especially sacred status. Now that it is known that settlements as early as Zoned Bichrome II possessed large habitation features made of river cobbles, a more practical explanation may be that later populations simply preferred to reuse the stones already at a likely village site instead of having to haul them in from the river beds.

A rationale for this inter-site patterning will be offered in the final chapter.

The style of architecture that typifies Stone Cist Period sites like Guayabo and La Cabana, with their round stone-faced mounds and cobble-paved streets, is strikingly similar to that of the contemporary Tairona culture in northeastern Colombia (Reichel-Dolmatoff 1965b: 142).

Funerary Features

The tiny stone cist tombs in the raised feature surrounding the empty plaza at La Cabana have been described in the section on excavations and stratigraphy. Some 200-250 m southeast of Mound 1

was found a cemetery of stone cist tombs. Although it was 95% looted, we managed to locate four partially intact tombs by diligent search, in one case having to remove a large tree stump (alive when the huaqueros were at work, but now mostly decayed). The ceramic grave goods matched the sherds found in the architectural component. In fact, one funerary feature (20.1-Tombs 2a, b) was constructed in the same fashion as the ridged mortuary feature forming a square around the empty plaza adjoining Mounds 1 and 2; that is, two parallel walls of cobbles enclosing tiny circular stone cists. Other tombs of the La Cabana cemetery (20.1 - Tombs 1 and 3) were the more typical oval, body-size cists made up of river cobbles, with or without laja lids. These had cobble-paved floors. Interestingly, the laja-covered example (20.1-Tomb 1) had a layer of smaller flat cobbles (10-20 cm) on top of the lajas, as well as a little path of the same cobbles leading away from the tomb. One is reminded of the house mounds and circles with their respective stairways and ramps; the concept of tombs as "houses" of the dead finds structural expression in the Stone Cist Period as it did in the earlier Zoned Bichrome II and Transitional Periods, and as it still does today - witness the miniature houses and roofs of white marble in the contemporary cemeteries of San Jose.

Nineteen tombs were excavated in the Stone Cist cemetery at 5-ZT. These followed the typical stone cist form, varying from small, round examples to large, well-made ovals capped by lajas. In one group of three tombs (20, 21, 22), the presence of the laja cover seemed to indicate rank or sex differences; while Tomb 21 was topped

by large, heavy lajas and contained a copious ceramic offering of fine vessels and three stone axes, Tomb 20 contained only two burned, utilitarian vessels, even though it was equally large and well constructed (even incorporating a petroglyph), but without a laja cover. Tomb 22 had a double floor, each with a different orientation; Hartman (1901) and Skinner (in Lothrop 1926: Appendix IV) noted many such double tombs in Stone Cist cemeteries.

The stone cist tombs excavated at 14-VF and 8-NJ were smaller than those of 5-ZT, and always had a stone floor. Few tombs had stone floors at 5-ZT. In all Stone Cist cemeteries, it is usual to find many well-made tombs without ceramic or lithic offerings.

Gold artifacts are sometimes found in stone cist tombs. The technique of smelting gold probably reached Costa Rica from the south by the end of the Transitional Period (Stone 1966). No gold was found by the author.

Two looted Stone Cist cemeteries were observed on the tops of ridges near Turrialba, in red clay soils. This isolation of cemeteries far from occupation areas was not observed in previous periods.

Subsistence

Subsistence patterns of the Stone Cist Period were probably very similar to those described by the Spanish chroniclers in historic times. That is, root crops like manioc were combined with seed crops (maize) and tree crops (pejibaye); riverine and estuary exploitation were also carried out.

The shift in mulling (grinding) technology from trough-like metates used with loaf-shaped manos in earlier periods to the use of unmodified flat cobbles rocked on edge may indicate a shift in food emphasis, or merely that manpower could not be spared to carve special metates from volcanic stone. Swidden cultivation continued in use.

Of the few carbonized plant remains that were found at Stone Cist sites, Dr. Richard I. Ford has identified the following, all from the small house circle (Feature 9) at La Cabana:

- Sample 1 - fragments of reeds or canes.
- Sample 2 - diffuse, porous charcoal, perhaps dicotyledonous.
- Sample 3 - wall fragment from a polished container made from a gourd, probably Curcubita pepo

Summary and Chronology

The ceramics of the Stone Cist Period, while capably executed, are inferior in technical quality to those of preceding periods. Bowls with tripod supports in the form of animal effigy heads are diagnostic. The zoning of orange and purple slips survives from earlier ceramic styles, as does a preoccupation with applique decoration. The feline motif becomes more common. Increased amounts of Nicoya polychrome pottery were imported during this period, inspiring inferior local imitations. The number of clay figurines, rattles and ocarinas decreases noticeably.

Unmodified flat stones are used as metates and manos for normal

food processing, but ceremonial effigy metates continue, now without raised rims, and usually carved in jaguar effigies. Stone figurines, usually warriors or female fertility symbols, increase markedly. Polished celts continue. Gold working replaces jade carving.

Villages are nucleated, characterized by circular earth-filled, stone-faced mounds, cobble streets and sometimes a walled enclosure. Occupational refuse is strikingly more limited in its spatial distribution as compared to Zoned Bichrome II and Transitional sites. Funerary features take the form of stone cist individual tombs, often covered with volcanic flagstones or lajas. Cemeteries are within or nearby the circular house mound groups.

Subsistence was varied: root crops, maize and tree crops were combined with riverine and limited marine exploitation.

Radiocarbon Dates Associated with Ceramics of the Stone Cist Period

The first date in parentheses was calculated on the basis of the Libby half-life of 5568 years, while the second has been calibrated with the Suess curve to give calendar years.

1. 680 ± 140 C14 years: (AD 1270) (AD 1300?) I-8915.

Single charcoal fragment from the base of a Stone Cist Period mound (M1) at La Zoila (5-ZT).

2. 730 ± 60 C14 years: (AD 1220) (AD 1250) UCLA 2113-H.

Charcoal from inside a burial vessel in Tomb 3, a stone cist tomb at 20.1-CB, the La Cabana Stone Cist Period cemetery.

3. 590 ± 60 C14 years: (AD 1360) (AD 1300-1400) UCLA 2113-G.

Scattered charcoal from a midden deposit in the southern arm of the walled enclosure at La Cabana (20-3, level 1).

CHAPTER 10: THE TRAJECTORY OF CULTURE IN THE ATLANTIC WATERSHED

It has been shown that prehistoric culture in eastern Costa Rica, far from being a late and lesser spin-off from the "higher" Mesoamerican cultures (Coe 1962), has a long history in the region, the longest in fact, known so far anywhere in Costa Rica. As early as 1000 BC the region supported agricultural, probably sedentary settlements, as indicated by highly developed, specialized ceramics and food processing tools like manos. These settlements were apparently very few, small and far apart; just two are known so far, and only one is securely dated. The diagnostic pottery has appeared at several other localities, however.

The ceramic styles of La Montana and Chaparron are unmistakably similar to other Early and Middle Formative ceramic complexes in Nuclear America. The scarcity of sites dating to this time period in eastern Costa Rica may be simply a function of a lack of investigation, but this remains to be seen. In any case, it can be said that the level of craft development in the region during Early and Middle Formative times (1500-500 BC) compared reasonably well with most cultures to the north and south.

By the time of Christ, however, the region had developed a notable lag in socio-political development, as compared to certain regions in Mexico, Guatemala, Ecuador and Peru. Although the archeological evidence in Atlantic Costa Rica at this time points to a highly

developed and standardized religious iconography, craft specialization (the high quality jade and stone carvings) and differential social status as manifested by varying quality and quantity of grave goods, centers of population and architecture are absent. If we are to judge by the numbers of large heavy stone metates, however, the population was reasonably sedentary. By this time, the Classic Maya and Teotihuacan civilizations were well underway, and Chavin and Olmec had come and gone. In proto-historic times, contemporary with the far-flung militaristic empires of the Aztecs and Incas, the Atlantic watershed cultures had only been able to collect themselves into small, defensively located nodes of population characterized by small earth-filled mounds. Craft technology had stagnated or even degenerated.

It is not the purpose of this dissertation to review the polemical literature on cultural evolution (such reviews and syntheses may be found in Flannery 1972 and Service 1975, among others), but to present a new archeological sequence and a model that attempts to explain the trajectory of cultural change in the region under study. It is to be hoped that increasingly sophisticated models will be developed as the data gaps are gradually filled.

The social organization typical of most of the eastern Costa Rican prehistoric cultural sequence is that which Service (1962) and Flannery (1972: 401) call a "tribe", or what Fried (1967: 110) would call a rank society. As Fried (1967: 115) notes "the major subsistence event underlying rank society is the transition to a domesticated food supply ...", although the larger rank villages are still organized in a variety of kinship-based groups (such as clans) whose network and

function are more formalized than those of simpler egalitarian societies such as bands. The tribal clans may serve as land or property holding entities in agricultural societies, and frequently engage in elaborate ceremonies and rituals whose function (expressed or cloaked in religious fables) is probably the regulation of environmental and interpersonal relations (Sahlins and Rappaport in Flannery 1972: 401-402).

As the ceremonial metate is the artifact most consistently associated with ritual and/or prestigious activities and personnel throughout the eastern Costa Rican archeological sequence, it is postulated that, fundamentally, the traditional ceremonies (the precise nature of which is unknown) had to do with resource procurement and redistribution. The redistribution process requires the flow of goods into and out from a finite center, which becomes an important population node in the rank hierarchy (Fried 1967: 117). In Zoned Bichrome II times, these nodes were apparently loose agglomerations of communal dwellings, but by the Stone Cist Period, they were tightly nucleated, although small, villages. Both kinds of centers were able to sponsor at least part-time craft specialization (jade working, stone carving, gold casting) to reinforce their status.

The size of these population nodes was almost certainly limited by the exigencies of swidden cultivation, undoubtedly employed in prehistoric times as it still is today in the region. A conflict situation (or negative feedback loop) developed in the growth pattern of the population centers: agricultural dependence both requires and permits a more sedentary way of life; in turn, sedentism is a pre-

requisite to the cultural accumulation of goods and private property which then make possible differential wealth, concentration of power and craft specialization, as well as many other technological, social and religious developments. Increasingly large and permanent population concentrations, however, tend to conflict with the basic adaptive strategy of swidden cultivation, which stimulates population dispersal (Meggers 1971: 158).

It should also be emphasized that the soils of the eastern lowlands and valleys in Costa Rica are rich, composed mostly of recent alluvium enriched by its parent volcanic components. This contrasts with the situation in most of Amazonia where the terra firme biota is fragile and delicately balanced ecologically (Meggers 1971: 14-23). Another important facet of the eastern Costa Rican swidden system is the probability that it was built around a "vegeculture" or root crop core, high yielding caloric staples that make low demands on soil fertility, but was also simultaneously a "polycrop" system. Here, a diverse assemblage of useful plants, including root crops (manioc), seed crops (maize) and tree crops (pejibaye, breadfruit) are grown together as one plant community which broadly simulates the wild vegetation it replaces, in this case tropical forest (Harris 1971). This is basically what the Spanish described when they first visited the Costa Rican Atlantic watershed.

Carneiro (1960) has demonstrated that, even in terra firme Amazonia, swidden agriculture based on root crops would permit the existence of sedentary villages of several hundred people. Though he shows that the Kuikuru had maintained their village in the same locale

for 90 years, moving its site only very short distances for supernatural and not ecological reasons, he also estimates that they are operating at less than 10% of their agricultural potential. Thus, while settlements are mostly sedentary, the population density remains relatively low, probably as an ecological "buffer". The stability of tropical forest root crop swidden systems in comparison to the less stable seed-crop swidden agriculture has been noted in many part of the world (Harris 1972).

In eastern Costa Rica, the archeological evidence suggests that the richer soils, along with polycropping, produced fairly large populations, distributed in sedentary but fragmented settlements. That this larger population was obliged to regulate its exploitation of the tropical forest environment is apparent from the development of a complex naturalistic-religious iconography, which incorporated the food processing metate as a major plastic vehicle or medium of expression for ritually symbolic zoomorphic effigies. A similar organization was observed in historic and recent times (Bozzoli 1975) wherein matrilineal clans were identified with certain animals, plants or geographic localities, reserving the power to control their exploitation. Inter-clan hierarchies also existed, and among the powers of the chiefly clans was that of controlling the population distribution of lesser clans.

These, then, are the components for the model of cultural evolution in the Costa Rican Atlantic watershed: early, but small and few, agricultural communities; a rapid increase in population and social complexity stimulated by fertile soils and efficient poly-

cropping plus riverine exploitation, culminating, in the centuries around the time of Christ, in a pattern of sedentary, fairly large nodes of population characterized by rank society and probably redistributive activities; a long period of inter-site resource competition and warfare, characterized by headhunting, sacrifice of captives, fragmentation of population and the gradual degradation of common craft and technologies like ceramics, although not in ritual, status-reinforcing luxury goods; the "Balkanization" of the population into small, agglomerated, rudimentally architectural settlements, probably as a defensive strategy; a few strong leaders were occasionally able to dominate several of these population centers for brief periods; in short, the cultural evolutionary process sputtered and "hung fire".

Carneiro (1961) has stressed the difference between what he calls "circumscribed" and "open" environments. He cites the Amazon basin as an example of a large, relatively homogeneous area with plenty of room for population expansion. This would tend to lengthen the time required for population densities to reach a critical stage in which warfare was waged over habitable land. The Costa Rica Atlantic watershed region, and indeed most of the Intermediate Area, could also be described as homogeneous. This, of course, refers not to topography but to the land's potential to support human populations. The huge expanses of extremely arid, uninhabitable land that characterize parts of Mesoamerica and the west coast of South America do not exist in the Intermediate Area, and even the regions which are relatively arid today were probably much less so in the past, before most of the forest

cover was decimated.

In a later article (Carneiro 1970), the same author explains why he favors "coercive" rather than "voluntaristic" theories about the origin of the political state. Carneiro believes that historical evidence shows that no autonomous socio-political unit, large or small, will voluntarily relinquish its sovereignty in the name of cooperation or the "greater social good". Only through forceful domination (war), he feels, are states and empires forged.

Meggors (1971: 159) feels that endemic warfare in an "open" environment like Amazonia, overtly waged for reasons like revenge, supernatural mandates and the taking of exogamous marriage partners, is in reality a regulatory device for human population in an area with a very precarious ecological balance. Warfare in eastern Costa Rica may have functioned similarly, and even have been more intense, given greater population densities. Why did this conflict not result in the amalgamation of larger, more complex socio-political structures as it apparently did in parts of Mesoamerica and Peru? The answer is that oppressed populations could often successfully flee the threatened domination, emigrating to other, similar localities which provided much the same kind of resources instead of being incorporated by force into the larger or more powerful conquering group (Carneiro 1970: 735). Sanders and Price (1968: 130) concur, noting that it is not so much the lack of productive potential in tropical forest areas like Amazonia that prevented the development of a complex society there (Meggors 1954), but rather that the presence of huge amounts of at least nominally agricultural land acted as an incentive to successful

emigration. They emphasize that the juxtaposition of very different environments in Mesoamerica produced a cycle of competition and cooperation between "symbiotic regions", and produced growth and expansion trends in all participating "environmental niches", culminating in a socio-political whole bigger than the sum of its parts. They also note that while highly nucleated, urban population centers are disfunctional in tropical forest areas where swidden agriculture is practiced, such centers are necessary to the survival of large populations in less hospitable environments, requiring as they do centralized political organization for successful agricultural exploitation. In those areas oppressed populations could not emigrate, facing instead the choice of submitting to the oppressor or being extinguished.

I believe this model satisfactorily accounts for the flat trajectory of prehistoric cultural evolution in the Atlantic watershed of Costa Rica insofar as the limited archeological investigation to date has revealed it. It is hoped that the model will be tested by future, better work in the region.

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APPENDIX 1 : MODES OF PASTE

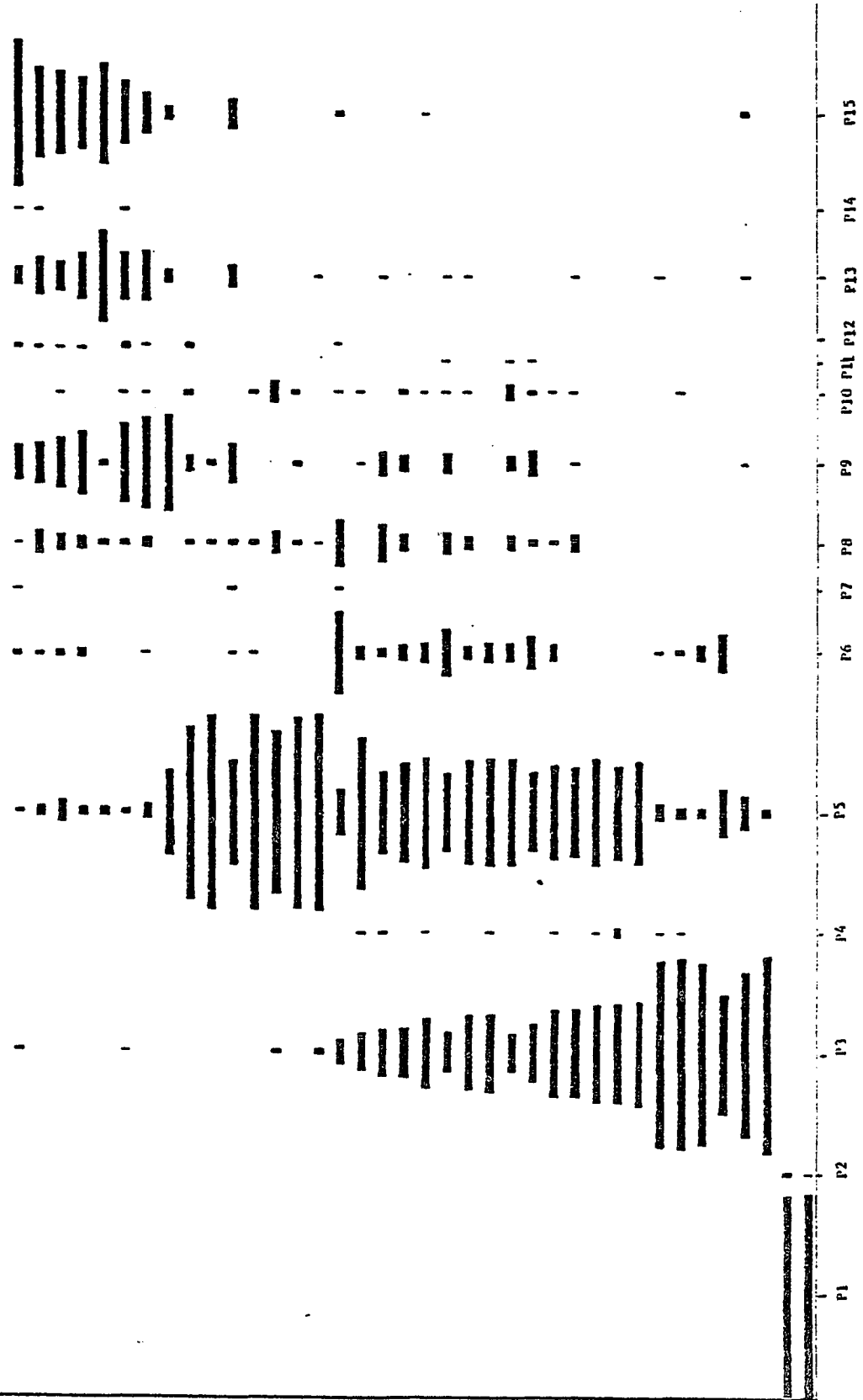
Numerical values and descriptive modifiers in parentheses follow the Munsell Soil Color Charts (1975 edition).

- P1 - A light brown to reddish-brown firing paste (5YR 6/6, reddish yellow), usually completely oxidized; pearl grey to whitish inclusions (basalt) are homogeneously distributed; biotite fragments and hematite nodules are sometimes present; usually quite soft and friable.
- P2 - A light to dark brown or grey (7.5YR 5/4, brown), fine silty to sandy paste, well-knit, but still fairly soft (perhaps due to weathering).
- P3 - A rather powdery to fine-sandy buff firing (7.5YR 6/4, light brown) paste; maybe completely or incompletely oxidized, usually depending on sherd thickness; hematite nodules and occasional other large non-plastics present; usually quite hard and well-knit.
- P4 - A buff firing paste identical to P3 but with less non-plastic material; finer, but more fragile; always completely oxidized.
- P5 - A sandy, gritty brown to reddish-brown firing (5YR 5/4, reddish-brown) paste; often incompletely oxidized; crumbles and abrades easily when slip is worn away; less hard than P3, and less strong.

- P6 - A very blocky and laminated paste, apparently characterized by a fine, sticky matrix and large non-plastic particles, which produce a very angular texture; may be completely or incompletely oxidized, usually brown to grey (10YR 6/4, light yellowish-brown; 5YR 5/4, reddish-brown).
- P7 - The buff to reddish-brown firing paste of Early Polychrome trade sherds; fine sandy and compact.
- P8 - A hard, fairly blocky textured paste incorporating fragments of black pumice; brown to greyish-brown (5YR 5/4, reddish-brown) firing; in some ways a finer version of P6; somewhat laminated.
- P9 - A very distinctive lightweight paste incorporating black and white pumice fragments and a white fibrous material, as well as occasional shiny black crystals and organic fragments; soft and compactable, not sandy (a very different kind of clay matrix as yet unidentified), brown to light-brown firing (7.5YR 5/4, brown); usually completely oxidized.
- P10 - A fine, powdery buff to orange-buff (5YR 6/6, reddish-yellow) firing paste; few non-plastics other than silt, fine sand and occasional hematite nodules; almost always completely oxidized; well-knit and fairly hard.
- P11 - An extremely fine, powdery paste with marked air holes, as if organic material was burnt out during firing, buff to light orange-buff (7.5YR 6/4, 7/4, light brown to pink), always completely oxidized.

- P12 - The brown to reddish-brown fine, sandy paste of Middle and Late Polychrome trade pottery (other than Papagayo) from northwest Costa Rica.
- P13 - A very sandy grey-brown to reddish-brown (2.5YR 3/6, 4/6, dark red to red) firing paste with notable concentrations of river sands, especially white feldspar fragments; may be completely or incompletely oxidized; friable when slip has weathered away.
- P14 - The very fine buff-orange to pink firing paste of Papagayo Polychrome, a trade pottery from northwest Costa Rica.
- P15 - Like P13, but much coarser, with particles to 3-4 mm; higher percentage of white (feldspar) fragments set it apart; very friable and crumbly when weathered (5YR 4/4, 4/6, reddish-brown to yellowish-red).

Fig. 66 Miles of paste (percentages by excavation unit)



20-1: 1-3

10-0

APPENDIX 2 : MODES OF SURFACE FINISH

Numerical values refer to the Munsell Soil Color Charts (1975 edition). The Munsell verbal designations also appear in parentheses but they are supplemented by subjective color perceptions, perhaps of greater descriptive value. Terms for ceramic technology follow Shepard (1956).

- SF1 - A self-slipped or floated surface (Shepard 1956: 192) smooth and evenly polished with few polishing marks; usually a tawny or dusky flesh color (5YR 4/6, 5/6, 5/8, yellowish-red; 5YR 6/6, reddish-yellow); sometimes oxidizes to reddish-brown (2.5YR 4/6, 4/8, 5/6, 5/8, red). Quite soft and friable and slightly lustrous.
- SF2 - A cream to pale brown slip (7.5YR 7/4, pink; 10 YR7/3, 7/4, very pale brown), smooth and evenly polished with few polishing marks, decorated with fugitive red paint (7.5 R 4/6, red) which may have been applied after firing. The cream slip is relatively soft and friable, discoloring easily; slightly lustrous.
- SF3 - A self-slipped or floated surface, smooth and evenly polished (occasionally burnished to a glass-like smoothness), which has been smudged (2.5YR 2.5/0, black). Apparently the smudging was incomplete or spotty on any single vessel - annular bases were frequently left buff or light brown, the natural color of the oxidized paste (differential firing). Slightly to highly lustrous.

SF4 - Chaparron Complex. A self-slipped and stick-polished (polishing marks wide and visible always circumferential), brown to buff surface (7.5YR 5/4, brown; 6/6, reddish-, yellow; 10YR 5/3, brown, 5/4 yellowish-brown, 6/3, pale brown, 6/4, light yellowish-brown, 7/3, 7/4, very pale brown) decorated with zoned red slip (10 R 3/6, 4/6, 4/8, 5/8 - dark red to red), which sometimes oxidizes to a medium brown (5YR 4/3, reddish-brown); both red slipped and self-slipped zones are slightly lustrous.

El Bosque Complex. A buff, smoothly compacted matte surface (7.5YR, 6/4, 7/4, light brown to pink), sometimes covered with a thin cream wash, with fine polishing marks exposed in a zone around the vessel collar; the rest of the vessel is usually slipped in a lustrous, dark red (2.5YR 3/6, 4/6, dark red to red), which sometimes oxidizes to a medium brown (5YR 4/3, reddish-brown). The red slip tends to craze when applied thickly.

SF5 - A lustrous red slip (2.5YR 3/6, 4/6, dark red to red), applied to the entire vessel exterior and evenly polished except for the zone around the vessel collar which is frequently slipped by unpolished. The red slip tends to craze when applied thickly.

SF6 - A matte to slightly lustrous orange slip (2.5YR 5/6, red), stick polished, alternating unpolished zones of purple-maroon pigment (7.5YR 4/4, weak red) which have been applied on a smoothed or scraped unslipped surface. Sometimes the purple paint is applied in wide lines over the orange slip and polished

along with it.

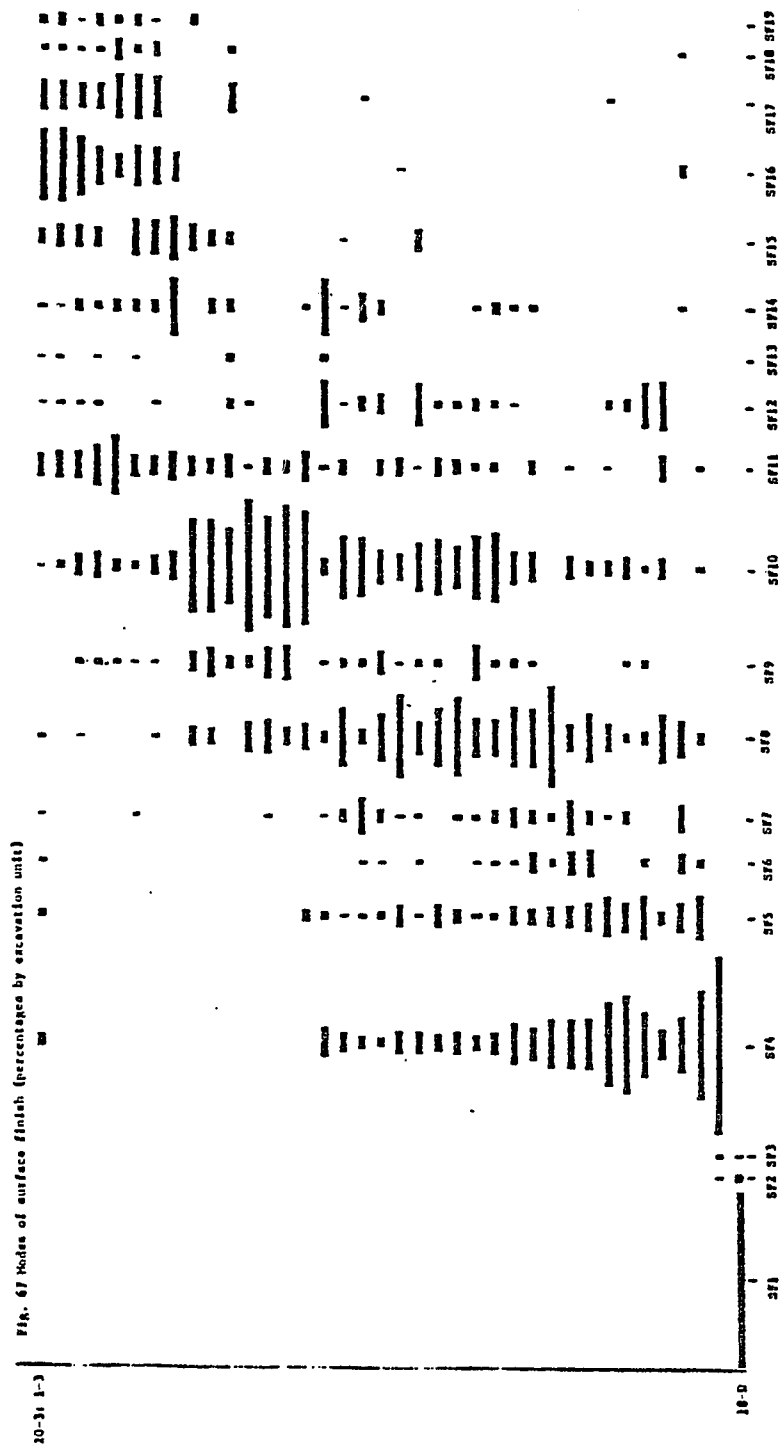
- SF7 - A highly lustrous orange-brown slip (2.5YR 4/6, 5/6, 5/8, red), which tends to craze when thickly applied, with a highly lustrous dark maroon slip/paint (7.5YR 2.5/4, very dusky red) applied in thick line decorative motifs on, or completely covering, the vessel interior.
- SF8 - A slightly lustrous to lustrous red slip (10 R 4/6, red), stick polished, usually applied to full vessel, although sometimes an unslipped panel is left around the collar. Zones around adornos or supports often left unpolished and painted in purple (7.5YR 4/4, weak red).
- SF9 - A smooth polished buff to brown-orange slip (5YR 5/6, 6/6, yellowish-red to reddish-yellow), sometimes partially slipped in purple (10R4/6 dark red); usually a very even, lustrous surface; occasionally slightly pebbly where non-plastics were not completely compacted.
- SF10 - A rather soft slip or wash, usually applied sparingly, not filling, wiping or smoothing striations; either orange (2.5YR 5/8, red) or reddish-brown (2.5YR 4/4 reddish-brown; streaks, lines or zones of unpolished maroon (10 R 4/4, weak red) are common; usually has a grainy or sand papery feel; matte.
- SF11 - A greyish-brown (5YR 4/2, dark reddish-grey) to reddish-brown slip (2.5YR 4/4, reddish-brown) which is usually thickly applied and stick polished, leaving marked polishing marks; somewhat

pebbly texture; matte to slightly lustrous.

- SF12 - A thin cream (7.5YR 6/4, light brown) to greyish (7.5YR 6/2, pinkish grey) or medium brown (7.5YR 5/4, brown) wash, which does not cover most large non-plastics; this wiped wash is matte.
- SF13 - An orange (5YR 4/6, 5/6) slip, smooth and lustrous with some polishing marks as a background for polychrome decoration.
- SF14 - A brown-orange (5YR 4/6, 5/6, yellowish-red) to brown (7.5YR 5/4, brown), imperfectly stick polished slip; careless polishing often leaves zones rough or uneven; pebbly texture from uncompacted non-plastics; slightly lustrous.
- SF15 - A thin brown (5YR 4/3, 5/3, reddish-brown) slip or self-slip, which is scraped, wiped or poorly polished, often leaving a pocked surface; soft, easily eroded; matte to slightly lustrous.
- SF16 - A reddish-brown slip or wash (2.5 R 4/6, red), often discolored to dirty brown and greys by poor firing or use; polished only in zones (lip, parts of exterior walls) where it is slightly lustrous; otherwise matte; often combined with zones which are grainy-textured and matte.
- SF17 - A thickly applied orange to reddish-brown (2.5YR 4/6, 4/8, red), occasionally red (10 R 4/6, red) slip, with marked polishing striations, slightly lustrous to lustrous; often combined with zones of polished or unpolished maroon (10 R 3/6, dark red) slip.

SF18 - A streaky, easily discolored cream slip (10YR 7/4, very pale brown) with very evident polishing striations; occasionally orange (7.5YR 6/8, reddish-yellow).

SF19 - Cream or white slip, even and smooth with few polishing marks, as a base for polychrome decoration.



APPENDIX 3 : MODES OF RIM FORM AND VESSEL SHAPE

- R1 - A flat, circular plate (budare) with raised edge; a post-slip groove often appears on the exterior portion of the raised edge.
- R2 - A composite silhouette (double) tecomate with non-expanded lip.
- R3 - A small plate with slightly raised, outslanting rim.
- R4 - A small vertical spout.
- R5 - An olla with tapering collar at a 60°-80° angle, always with groove and/or other decoration at junction of wall and collar.
- R6 - A slightly restricted hemispherical bowl, thinner at the base and usually with post-slip grooving along the lip.
- R7 - A straight outslanting form thickened near the lip on the exterior by the application of a flattened strip; this form has since been determined to be a pedestal base.
- R8 - A bowl or dish with lip expanded on the interior; lip profile may be angular or rounded.
- R9 - A tecomate with lip expanded on the interior ("comma-shaped" lip profile).
- R10 - Same as R9, but with beveled or flattened upper portion of lip.
- R11 - An olla-tecomate with thickly expanded, angular exterior lip.

- R12 - A tecomate with a rounded bead at the exterior lip.
- R13 - A deep dish or pan with a nearly flat bottom, expanded at the exterior lip.
- R14 - An olla, usually large with expanded lip; inflection points are notably angular.
- R15 - An olla similar to R14, but with straight, non-expanded lip, angular in profile.
- R16 - A composite silhouette (carinated) bowl, with vertical walls and a lip expanded on the exterior.
- R17 - A carinated bowl, but with straight, non-expanded lip which may be either squared off or rounded.
- R18 - An olla with everted lip, untapered and curved on upper surface.
- R19 - Incurving or inslanting tecomates with straight, non-expanded lips.
- R20 - A tecomate, similar to R12, but with exterior bead at lip smoothed in to the vessel body, not as well defined.
- R21 - An angularly beveled lip on slightly outcurving rim; usually from the cup of a tripod with long solid supports, oval in section.
- R22 - A slightly outslanting thin rim from the cup of a tripod with long, curved usually hollow supports.

- R23 - Similar to R22 but with slightly outcurved lip, sometimes flattened on upper surface.
- R24 - A composite silhouette dish, usually with tripod supports.
- R25 - A bowl or dish with a flattened, squared-off everted lip.
- R26 - An olla with an outcurving, tapered lip.
- R27 - An olla, generally quite large, with an outcurving rim and a rounded, lobular expansion on the exterior lip.
- R28 - An olla with an everted lip, untapered, and often expanded on the inferior surface.
- R29 - A simple bowl, hemispherical with a blunt, rounded lip, sometimes with expanded lip; often with an applique strip applied in the manner of a basal flange.
- R30 - An olla with an outslanting tapered lip and a notably high collar.
- R31 - A bowl or deep dish with an everted, lobular lip.
- R32 - A large, rather deep plate, similar to the Mesoamerican comal.
- R33 - A bowl or dish with a straight outslanting profile and a flattened or beveled lip.
- R34 - A shallow dish or plate with everted lip, always with long, hollow tripod supports.
- R35 - Same as R34, but with a more smoothly surved profile.

- R36 - A bowl with squared-off lip, slightly hooked on the interior.
- R37 - A small olla with a sharply recurved tapered lip.
- R38 - A bowl or dish with straight, outslanting walls; the lip is beveled on the interior side.
- R39 - A thin walled bowl or dish with an everted lip; always with long hollow tripod supports.
- R40 - An olla with a chimney-shaped profile, always with solid, rather slender conical supports.
- R41 - A bowl with an everted, indented lip.
- R42 - A bowl or dish, composite silhouette, with a slightly outcurving lip; almost always with hollow, effigy head supports.
- R43 - Same as R42, but with straight, outslanting tapered lip.
- R44 - A bowl with slightly incurving, very tapered lip; almost always with hollow tripod supports.
- R45 - Similar to R44, but thicker and more outslanted.
- R46 - An olla with an everted lip, tapered and often with a groove on upper surface.
- R47 - A small olla with a complex silhouette rim, often indented on lip; usually with small, solid conical supports.
- R48 - A cylindrical, flared vessel support.

R49 - A small olla with a very slightly outcurving rim and tapered lip.

R50 - A censer in the shape of a frying pan with a large, hollow decorated handle.

R51 - An olla with a tapered lip at about 45°, sometimes slightly concave on upper surface; the space at the angle between the lip and wall is often filled in with a strip of clay, then smoothed over.

R52 - An olla, similar to R51, but with everted lip; the filled in space between lip and wall is usually noticeable in cross-section.

R53 - A bowl, composite silhouette, with a tapered lip.

R54 - An olla, like R51, but smaller with a blunt, truncated lip.

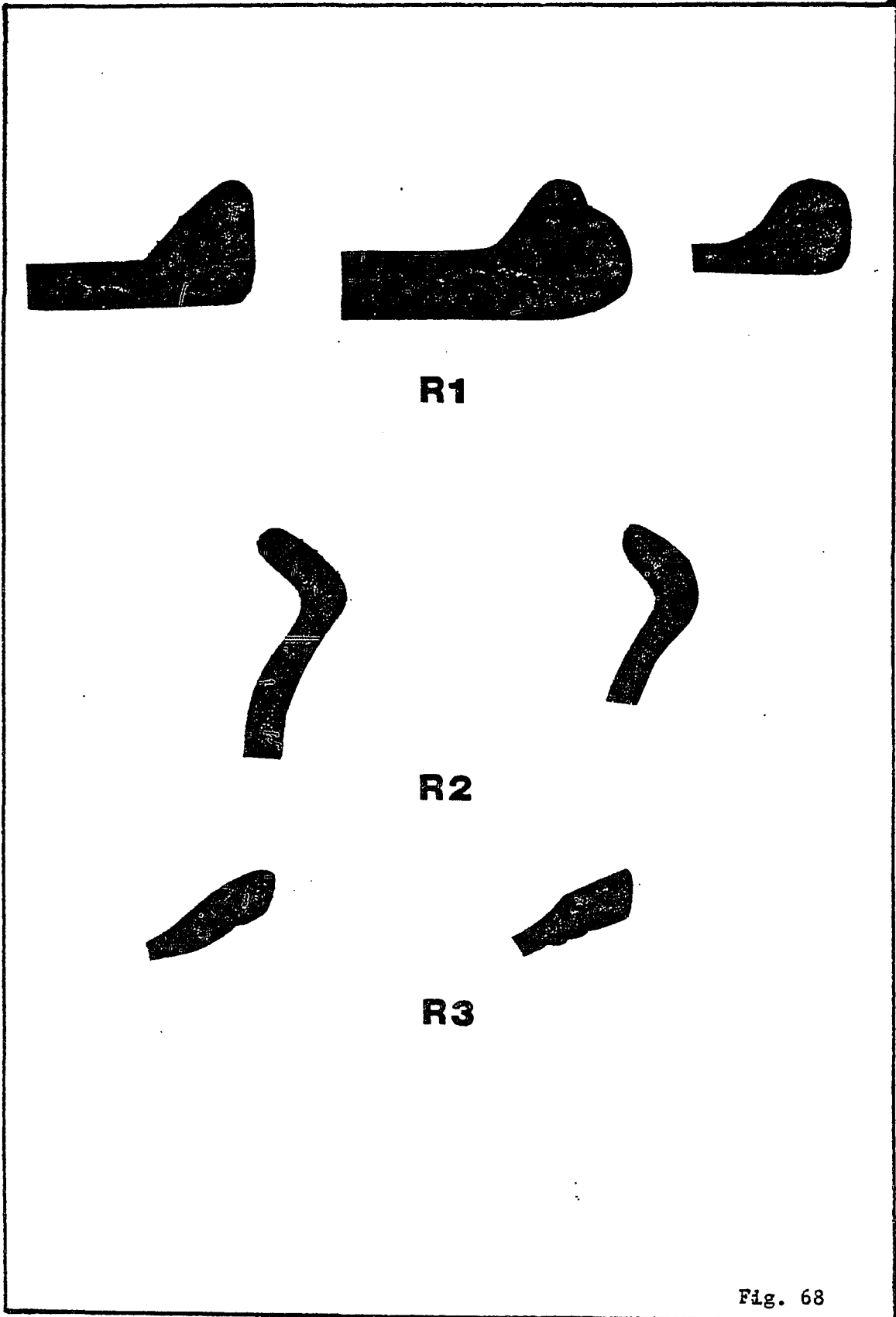


Fig. 68

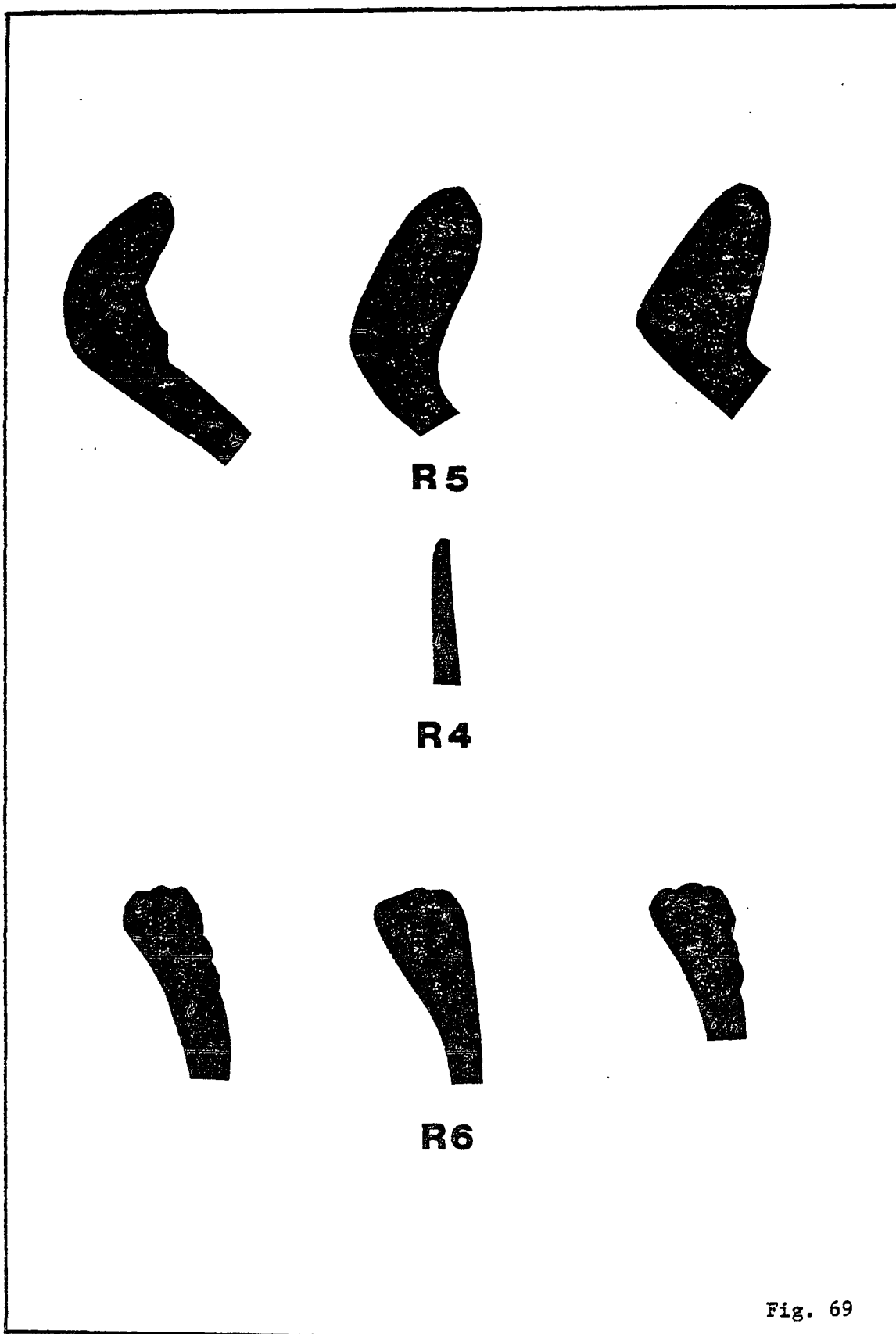


Fig. 69

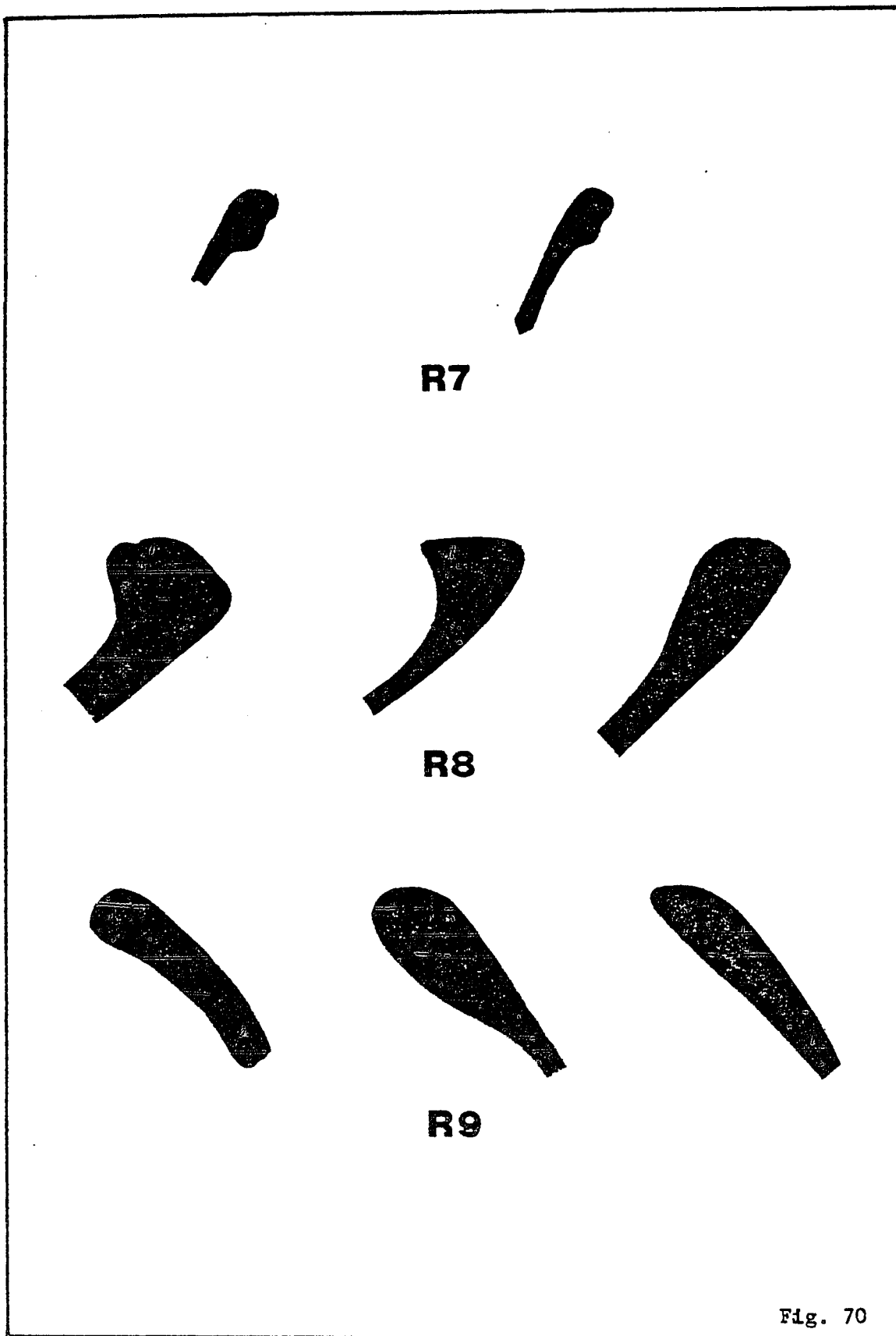


Fig. 70

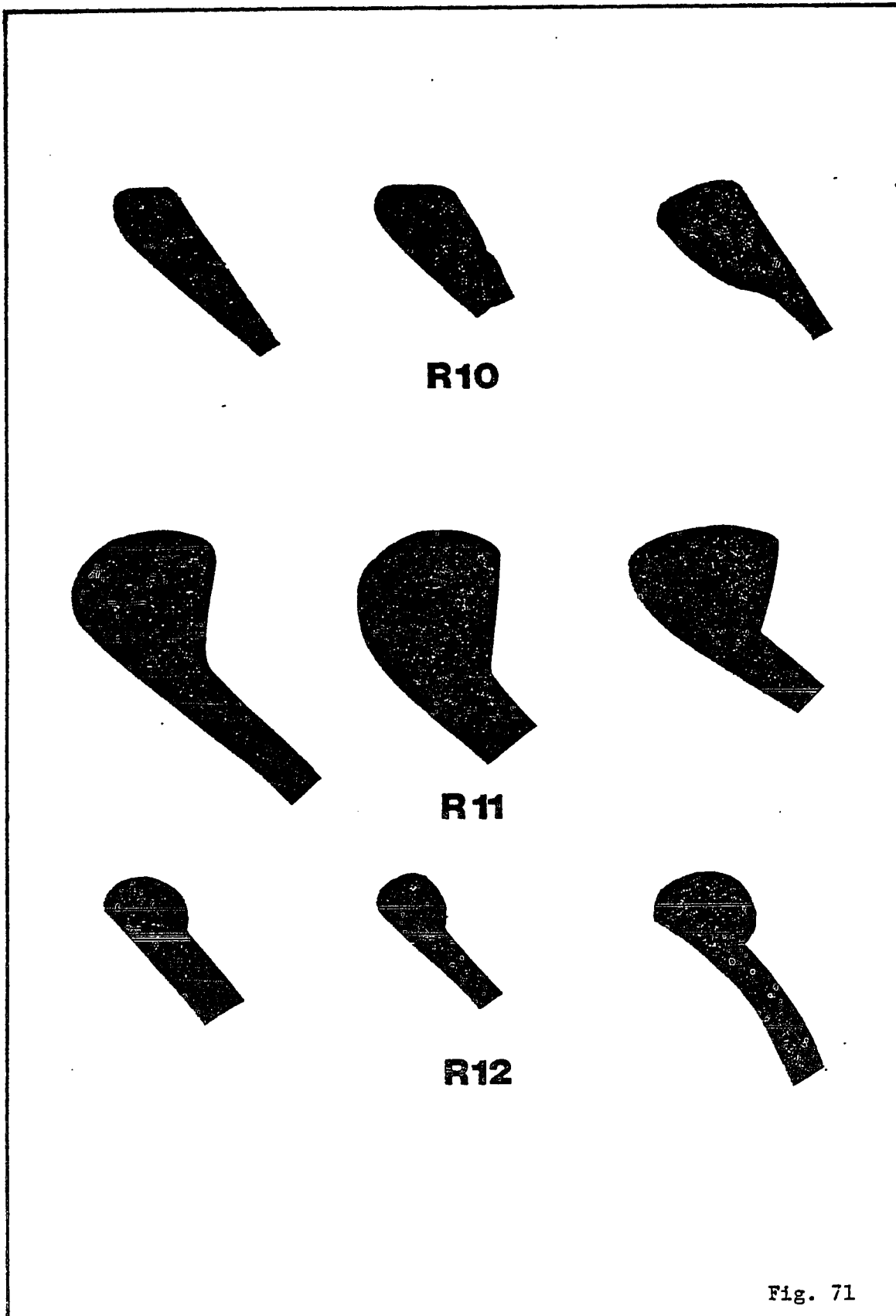


Fig. 71

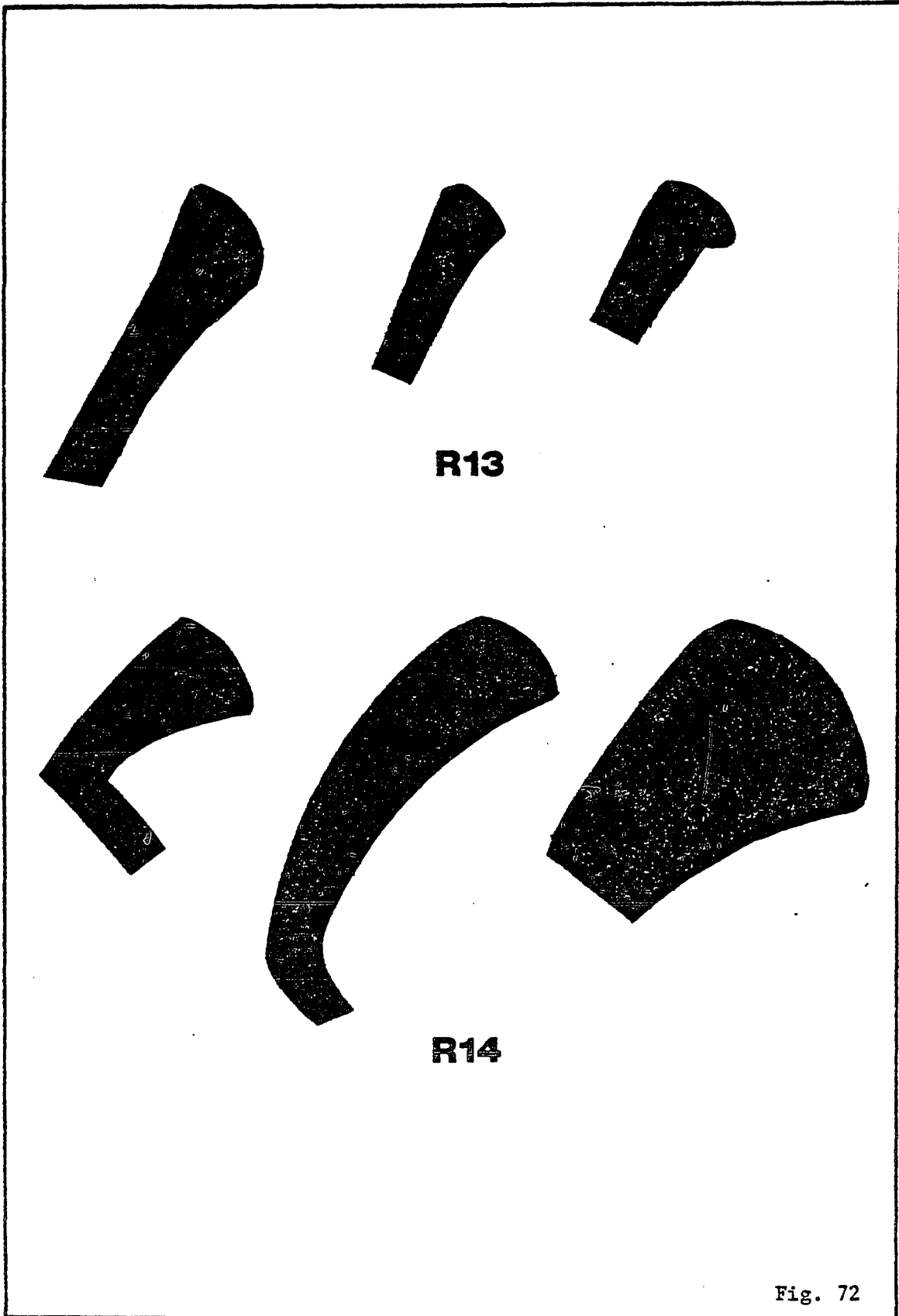


Fig. 72

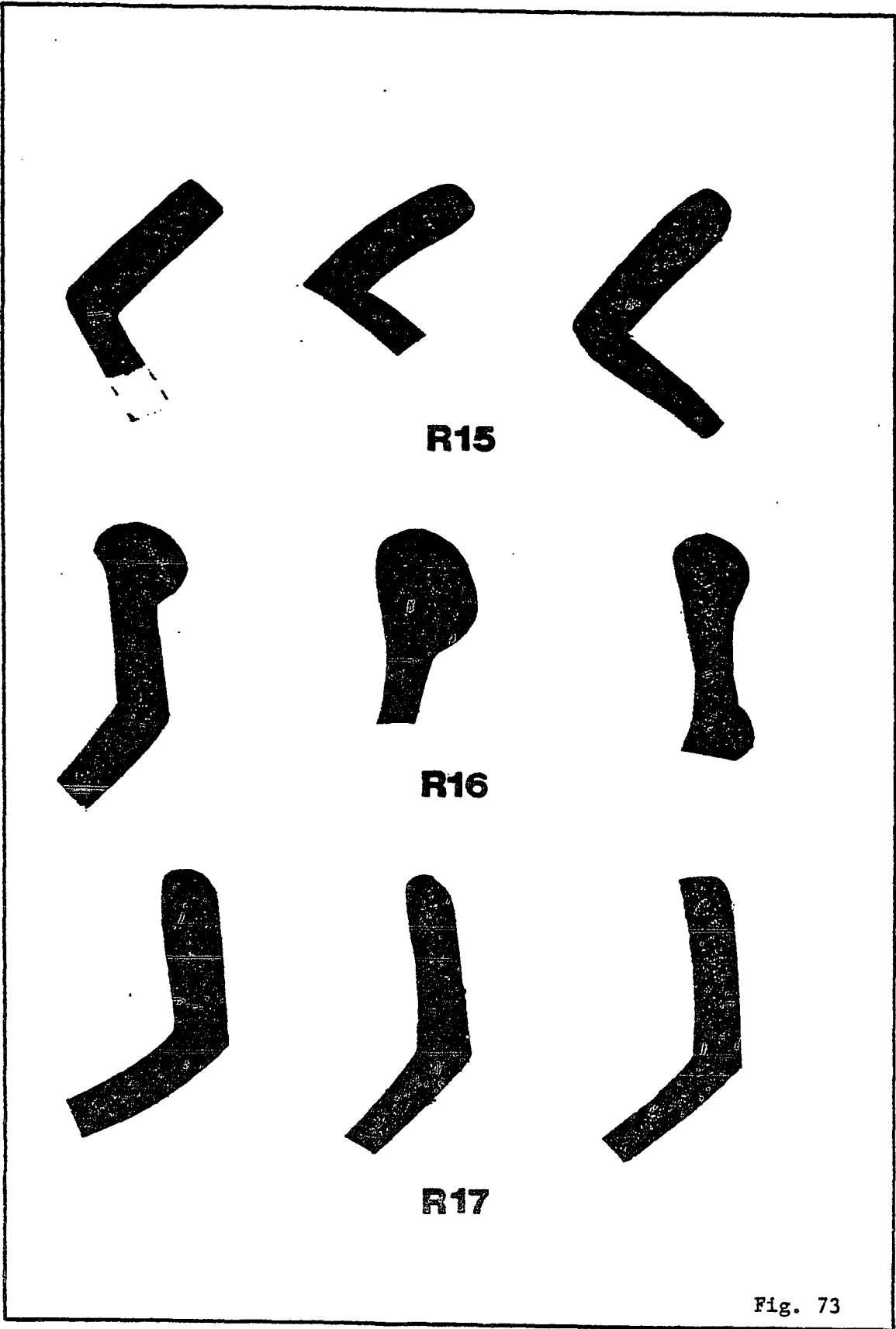


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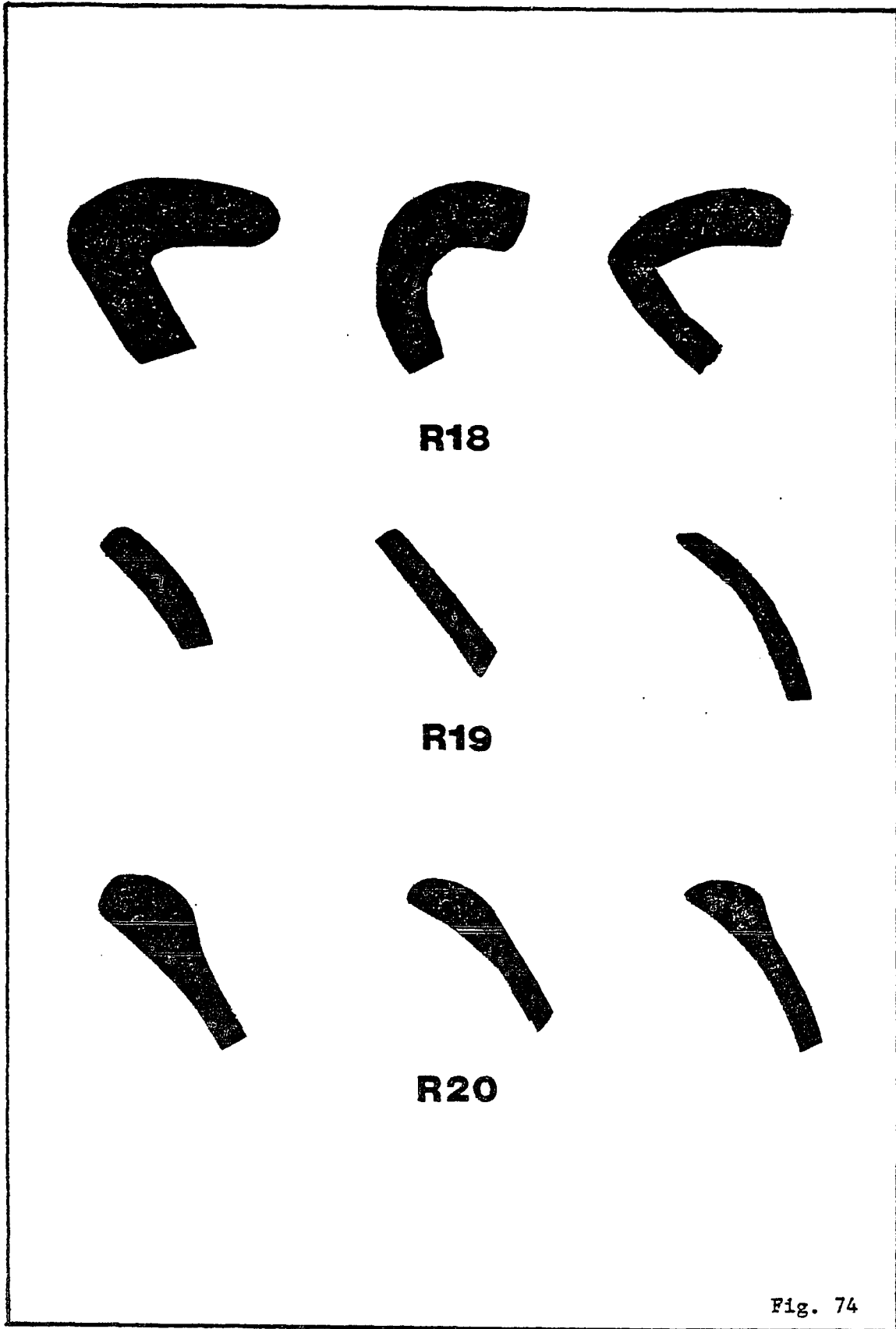


Fig. 74



R21



R22



R23

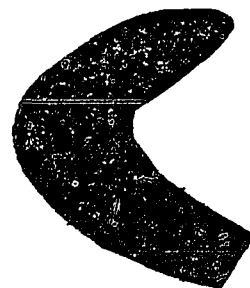
Fig. 75



R24



R25



R26

Fig. 76

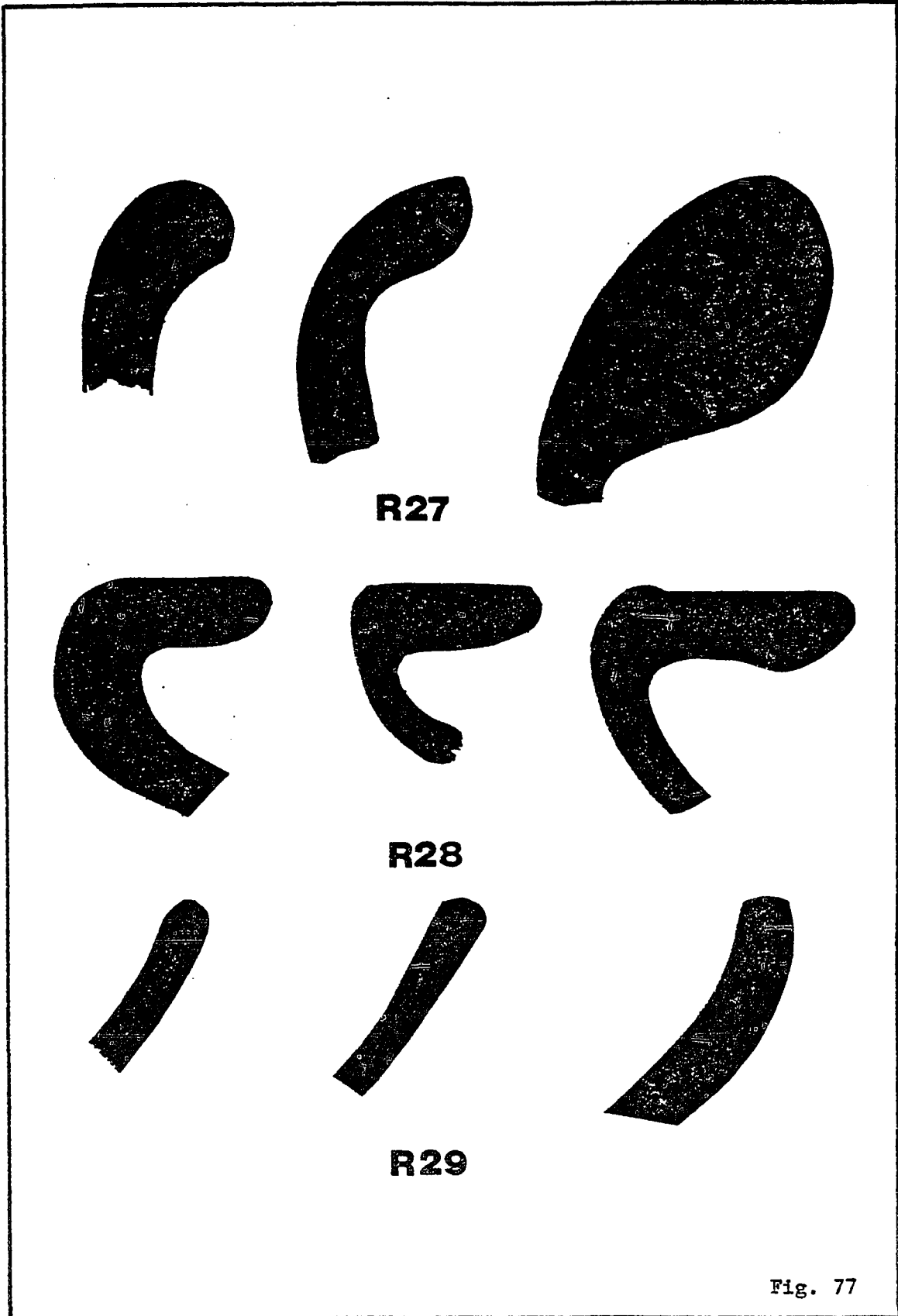


Fig. 77

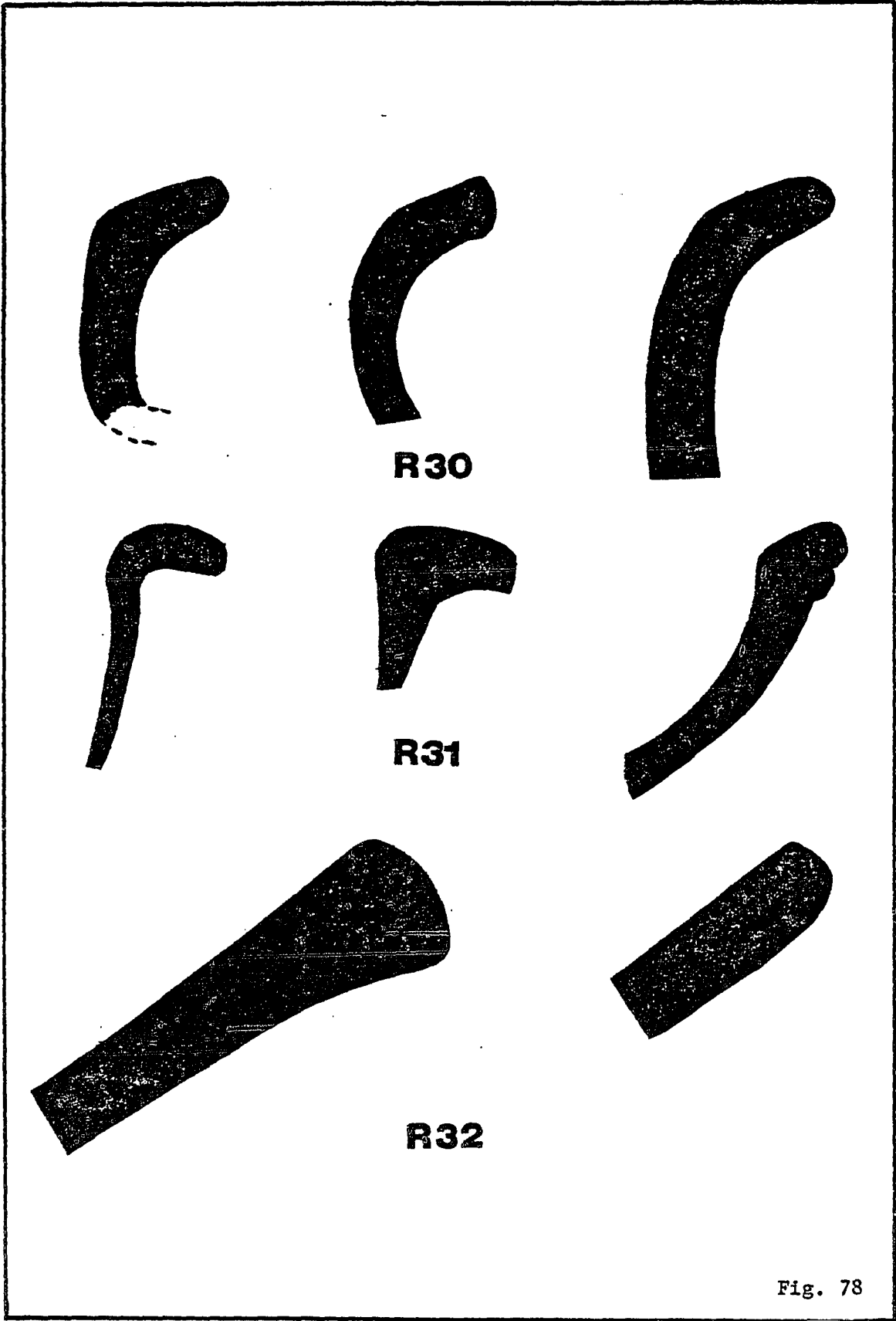


Fig. 78

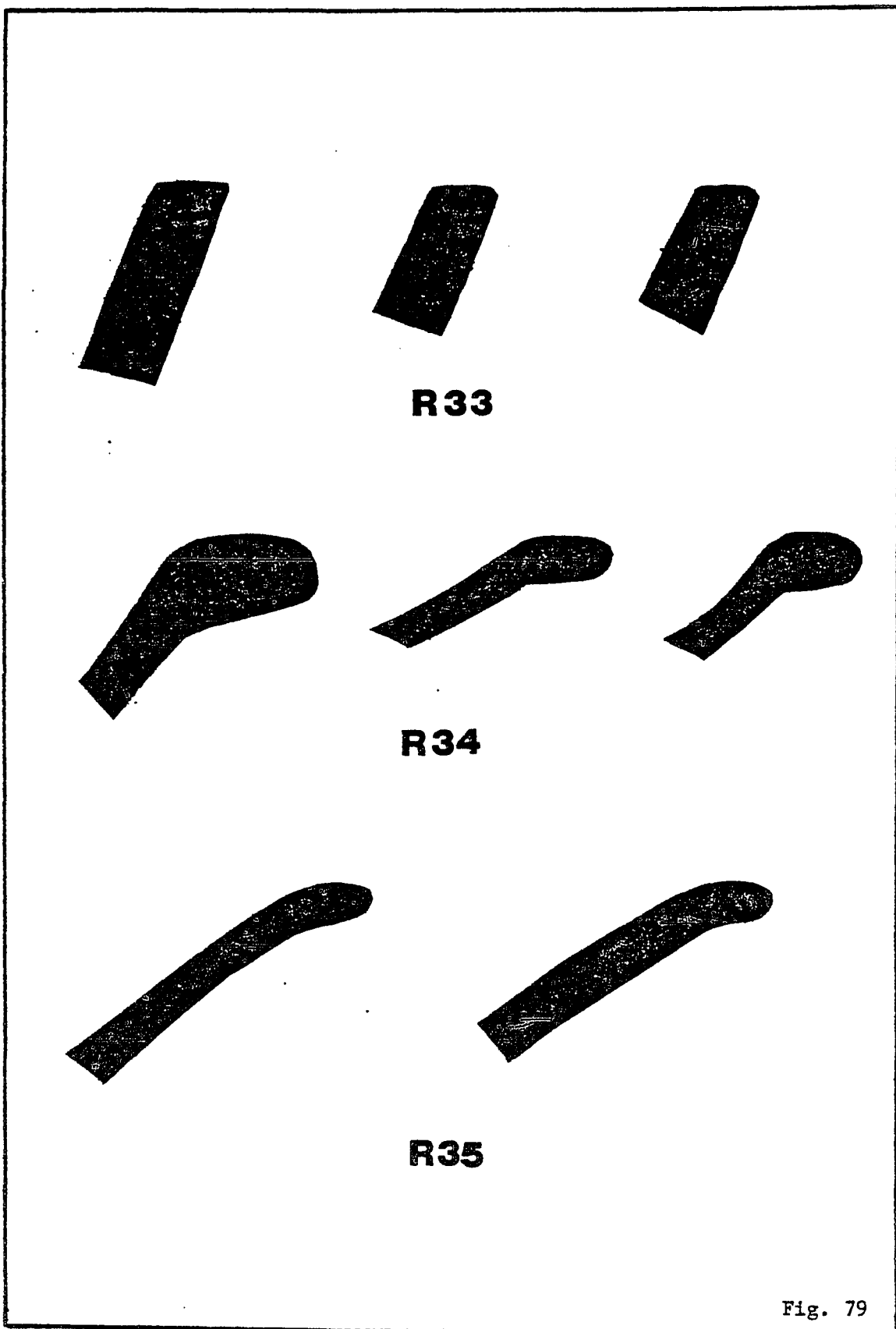


Fig. 79



R36



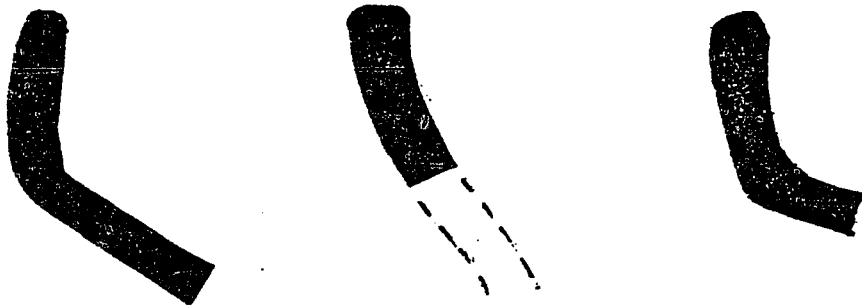
R37



R38



R39



R40



R41

Fig. 81

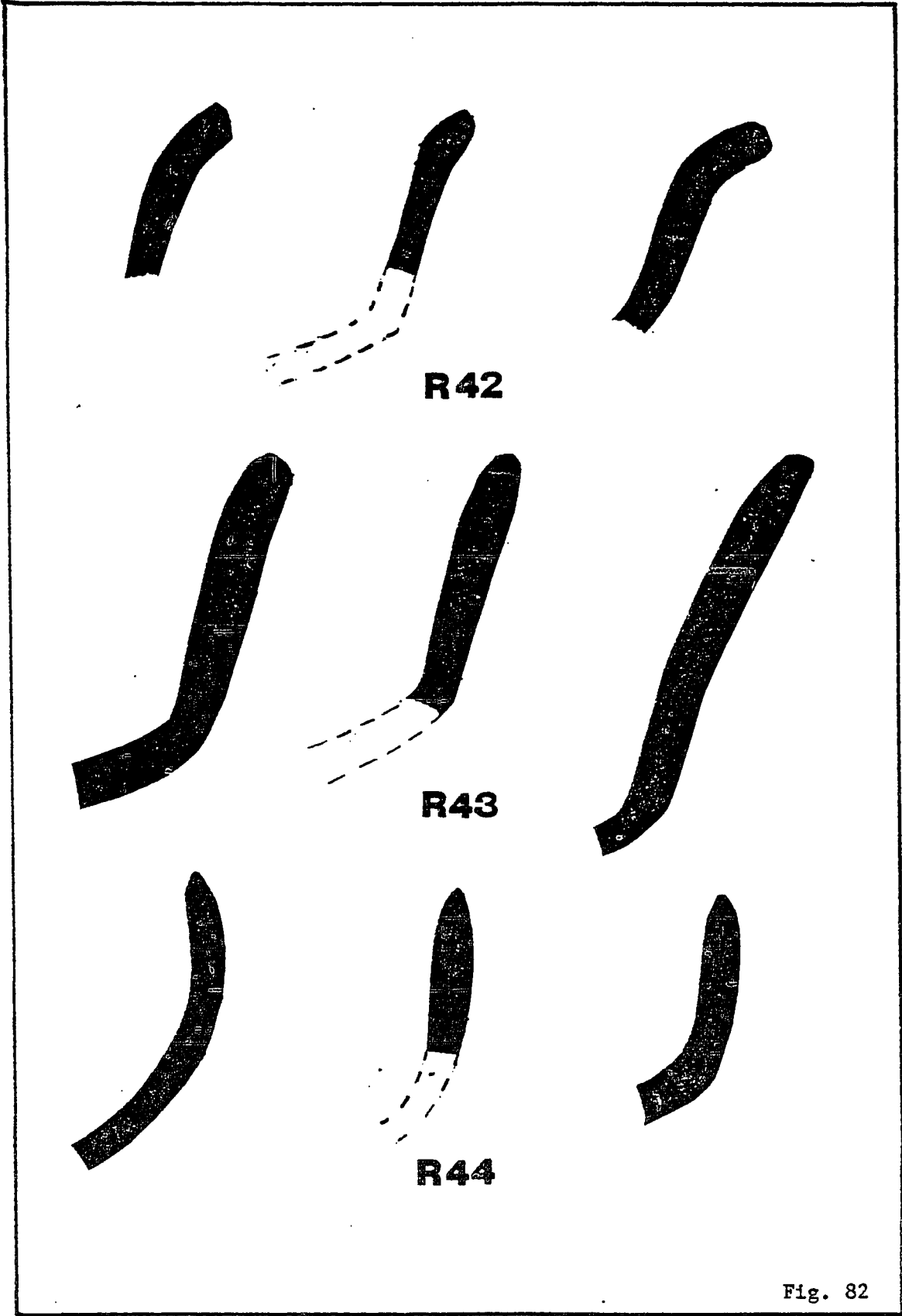


Fig. 82

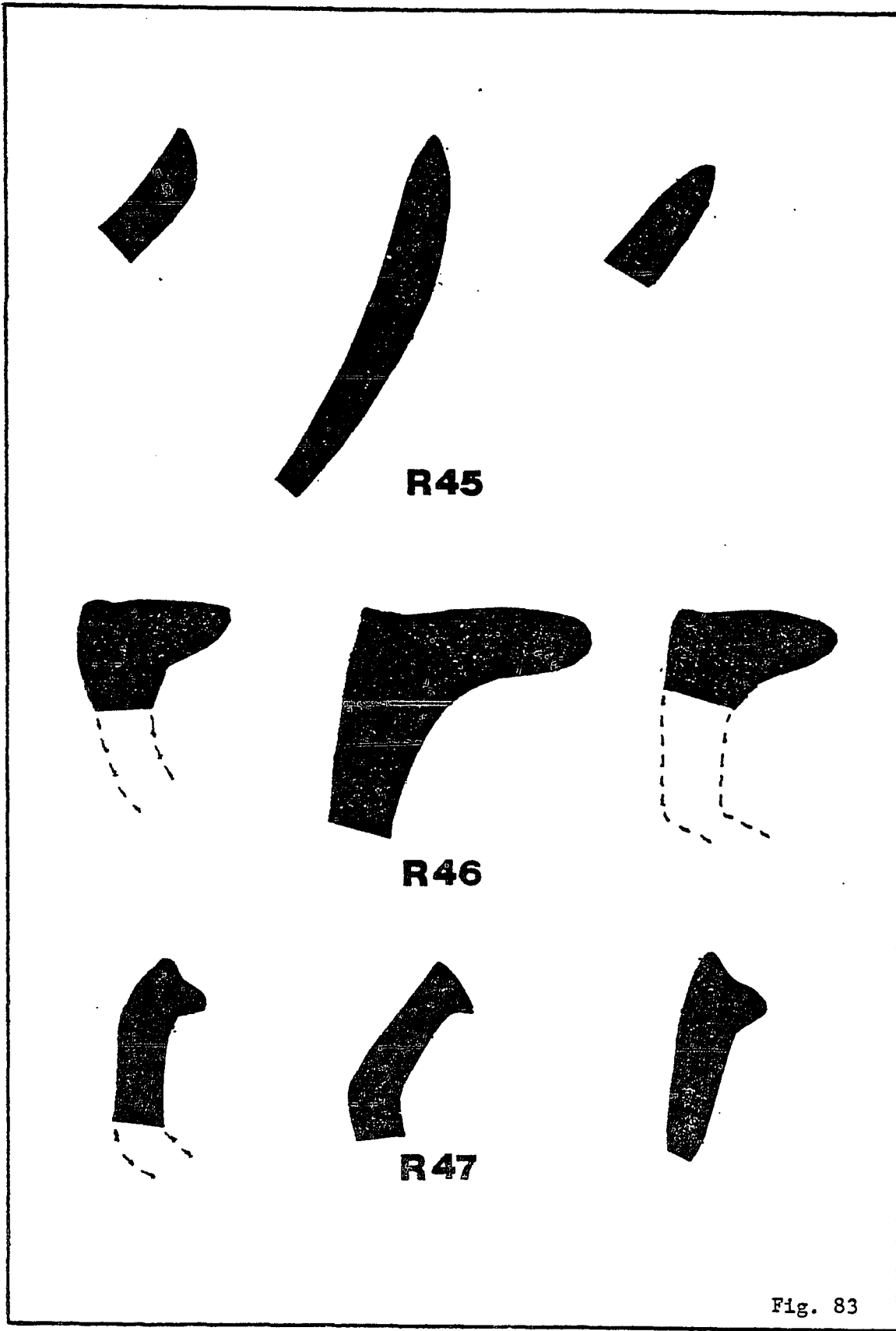


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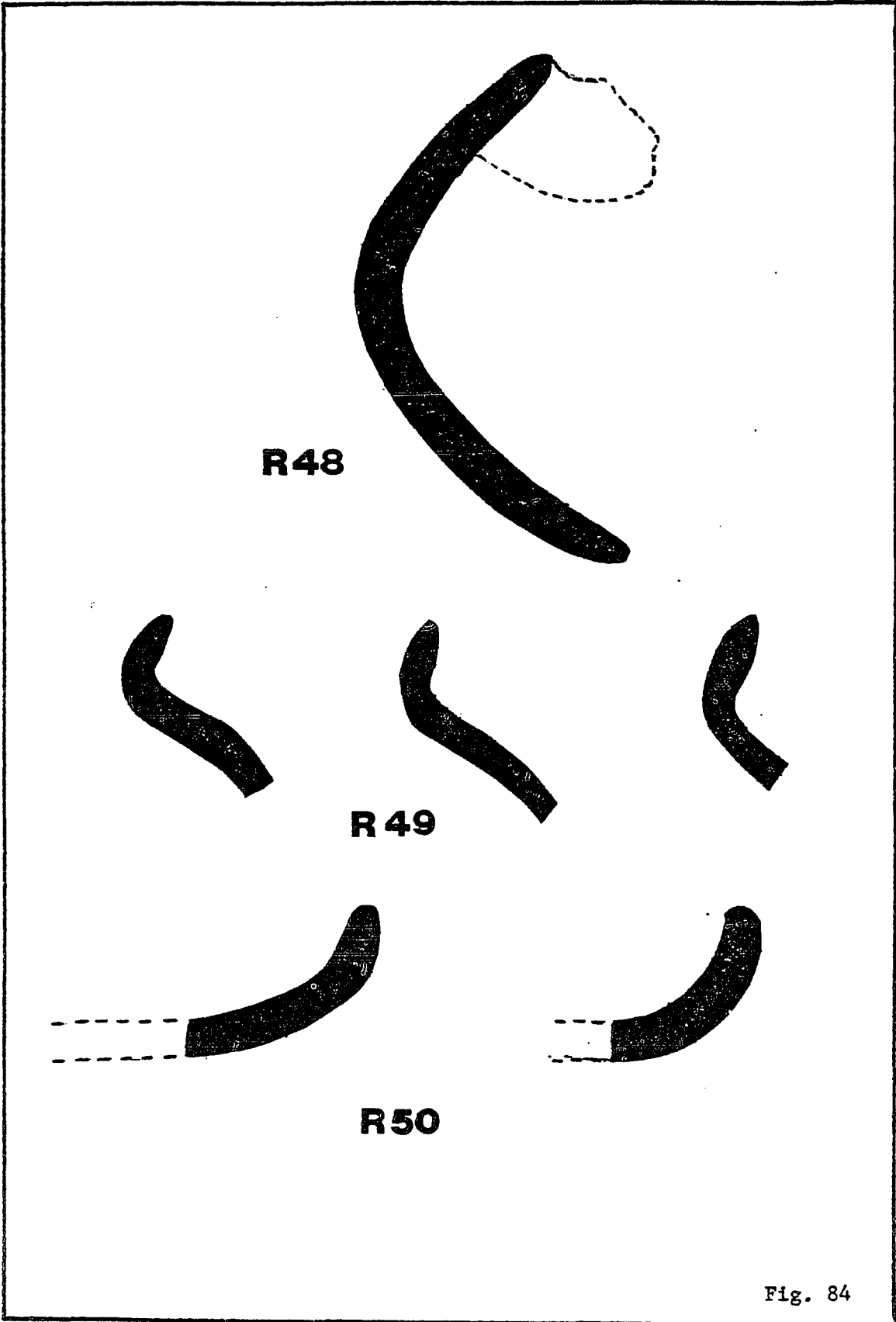
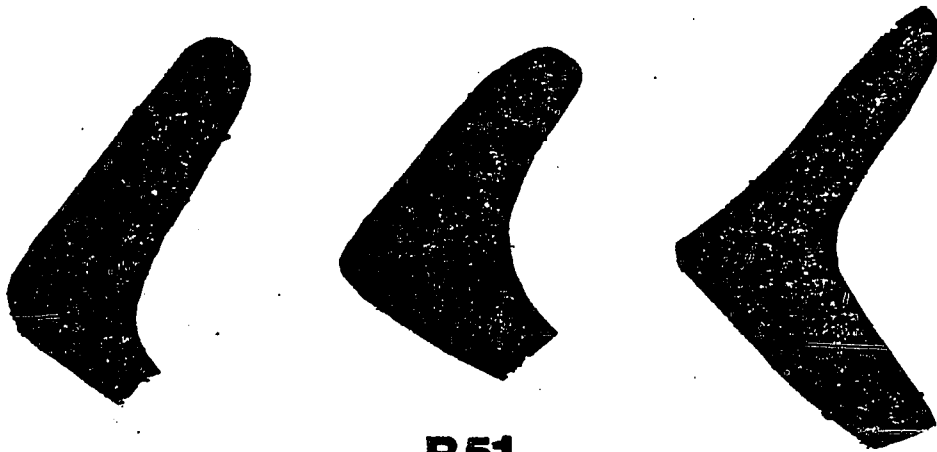


Fig. 84



R51



R52

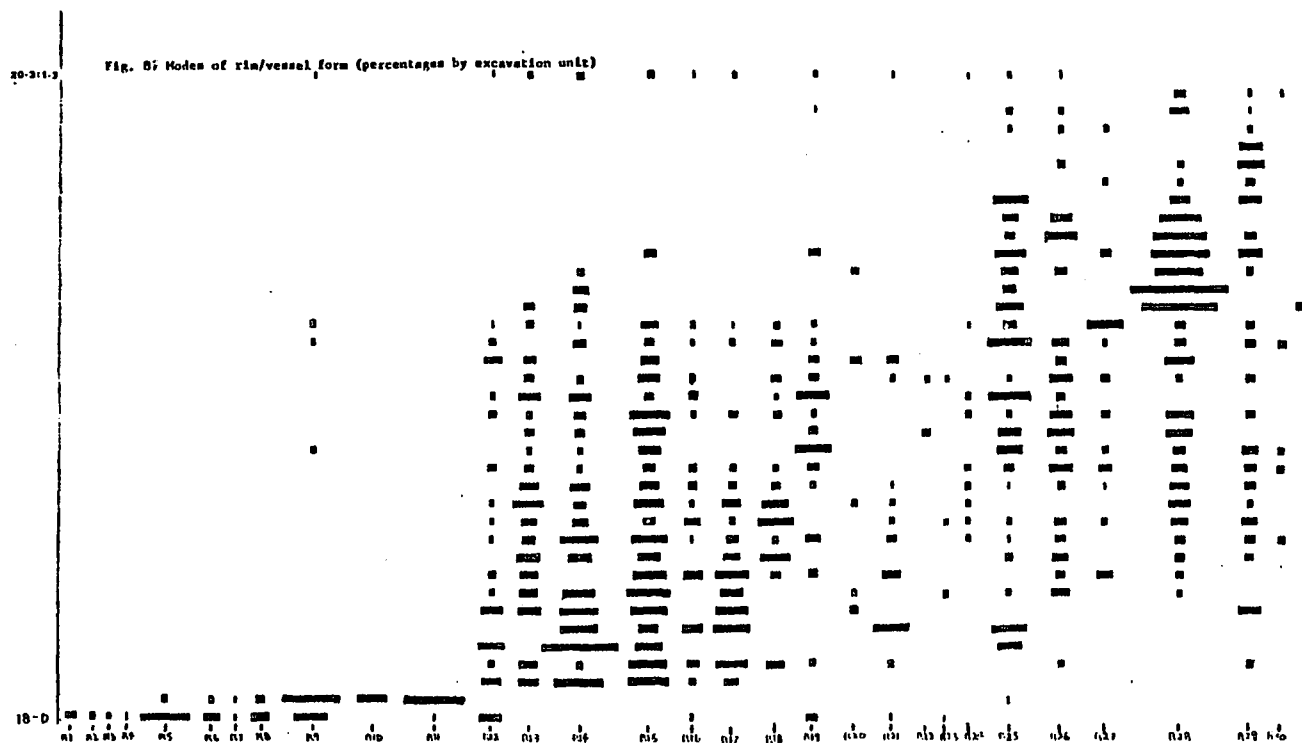


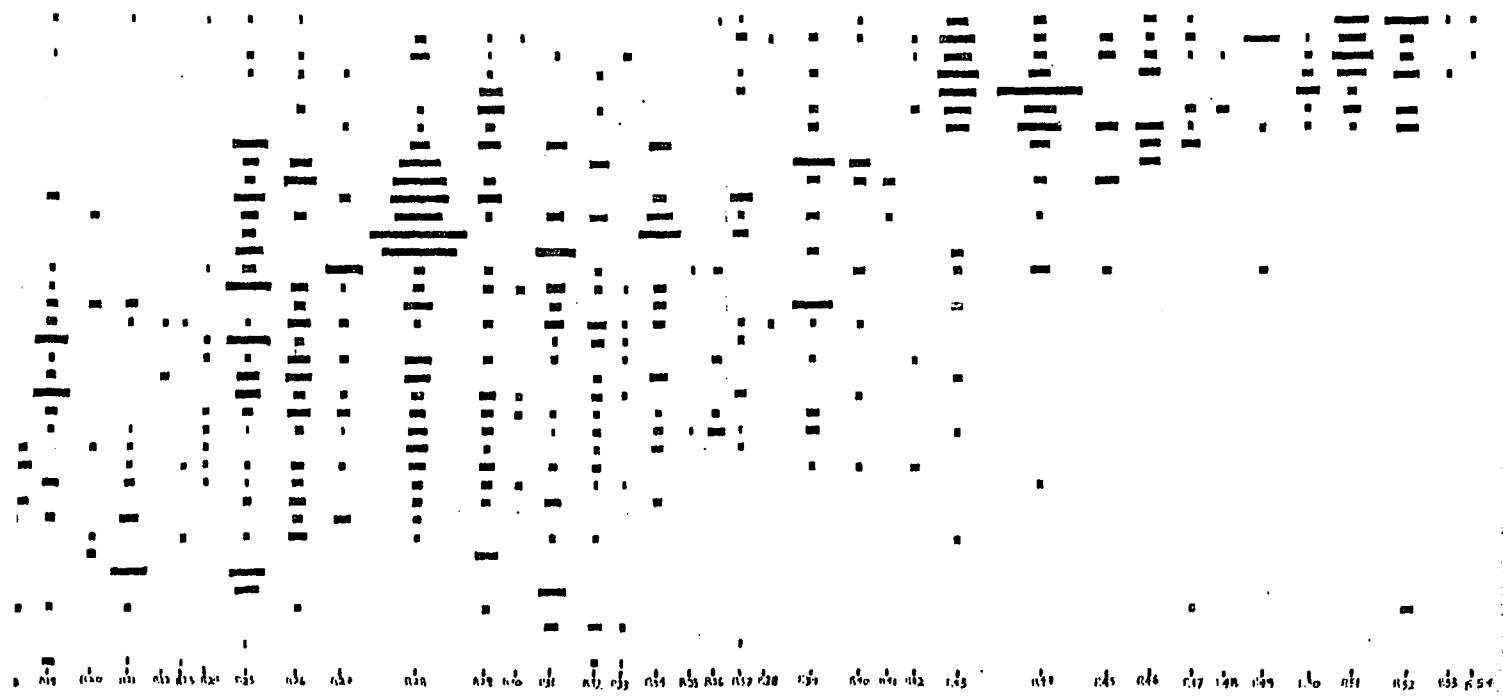
R53



R54

Fig. 85





APPENDIX 4 : SUPPORTS

- S1 - Solid, long tripods shaped like a stylized foot at the base; generally oval in cross-section.
- S2 - Solid, long tripods in the form of an oval loop, usually with a zoomorphic adorno attached to the upper part.
- S3 - Solid long tripods, oval in cross-section.
- S4 - Partially hollow, gracefully outcurving tripods, invariably with a modeled adorno on the upper part; tip is hollow with cut-out rectangular slots and clay balls inside as rattles.
- S5 - Long, solid tripods (some with a cream wash) whose fragmentary condition prohibited a firm identification.
- S6 - Large, solid nub-shaped (conical or truncated conical) projections, appearing singly at the base of large ollas.
- S7 - Solid, long tripods, round in cross-section.
- S8 - Small, hollow, conical tripods (3-5 cm); sometimes with small vents.
- S9 - Solid, long tripods with two or three serrated ridges along exterior (alligator motif).
- S10 - Long, hollow conical tripods, quite thick (to 10 cm) with a long rectangular vent at exterior; usually with applique monkey motif

plus purple and white paint.

- S11 - Supports from effigy vessels, characterized by gouges representing toes at the extremity, with an applique strip attached just above.
- S12 - Smaller version of solid loop tripods, frequently with applique pellets (stylized zoomorphic effigy) at upper exterior.
- S13 - Smaller, much more flattened version of S3.
- S14 - Hollow, tall cylindrical tripods, usually with clay rattle balls and zoomorphic adorno on upper exterior.
- S15 - Long, hollow, conical tripods with anthropomorphic adorno (often with a conical cap) holding arms in front of body; sometimes with a vertical row of circular holes.
- S16 - Hollow, egg-shaped tripods, with either two circular or three small rhomboidal holes.
- S17 - Hollow, conical tripods with a solid button at tip; may be mammiform.
- S18 - Solid, conical blunt-tipped tripods with a salient shoulder.
- S19 - Solid, thin, pointed tripods, often with a vertical row of applique pellets; sometimes double, like legs.
- S20 - Hollow, mammiform tripods, frequently with two or more round perforations.

- S21 - Solid, tapered conical tripods, usually with a slight shoulder and marked circumferential polishing marks at point of attachment to vessel wall.
- S22 - Solid, mushroom-shaped tripods.
- S23 - Hollow version of S18, usually somewhat longer, and with shoulder more pronounced or angular.
- S24 - Small, solid, lobular tripods with modeled face and stylized extremities.
- S25 - Large, hollow, conical tripods with stylized adornos on upper part, usually with horizontal grooves below.
- S26 - Medium to tall hollow tripods with modeled decoration in the form of a tool impressed ridge and oblique punctation, probably representing a zoomorphic effigy; occasionally a solid version occurs.
- S27 - Hollow, conical tripods with solid, tabular base; represents a very stylized human figure with cut out zones, applique and jabbing.
- S28 - Hollow, pointed, conical tripods with three vertical rectangular zones cut out.
- S29 - Small, solid nubbin supports.
- S30 - Small, solid mammiform.

- S31 - Small, solid zoomorphic effigy, tool impressed and with applique pellets; usually avian.
- S32 - Hollow, conical to spatulate, roughly finished tripods with a variety of plastic decoration, usually representing zoomorphic motifs.
- S33 - Hollow, conical tripods with an oval vent on the interior side.
- S34 - Hollow, effigy head tripods (zoomorphic) with solid spatulate projections, applique buttons and circular holes; frequently with clay balls as rattles.
- S35 - Solid, mammiform tripods (like S30), but with three applique buttons and deep rectangular tool impressions around lower half.
- S36 - Hollow effigy head tripods (canine or feline?) with a solid spatulate tip; frequently with clay balls as rattles.
- S37 - Solid, conical tripods (longer than S29), usually carefully formed and slipped.
- S38 - Solid, conical tripods, often carelessly formed, with a series of vertical slashes.
- S39 - Hollow, bulbous effigy head tripods, with spatulate tips; somewhat similar to S34; usually decorated in polychrome paint on white slip. Two round holes occur laterally.
- S40 - Hollow, zoomorphic effigy head tripods; may be decorated with incision and punctation or undecorated.

S41 - Hollow, zoomorphic effigy head tripods, ellipsoidal with oval holes occurring laterally; decorated in polychrome paint on white slip.

S42 - Hollow, conical tripods with oval vents on both the exterior and interior sides.

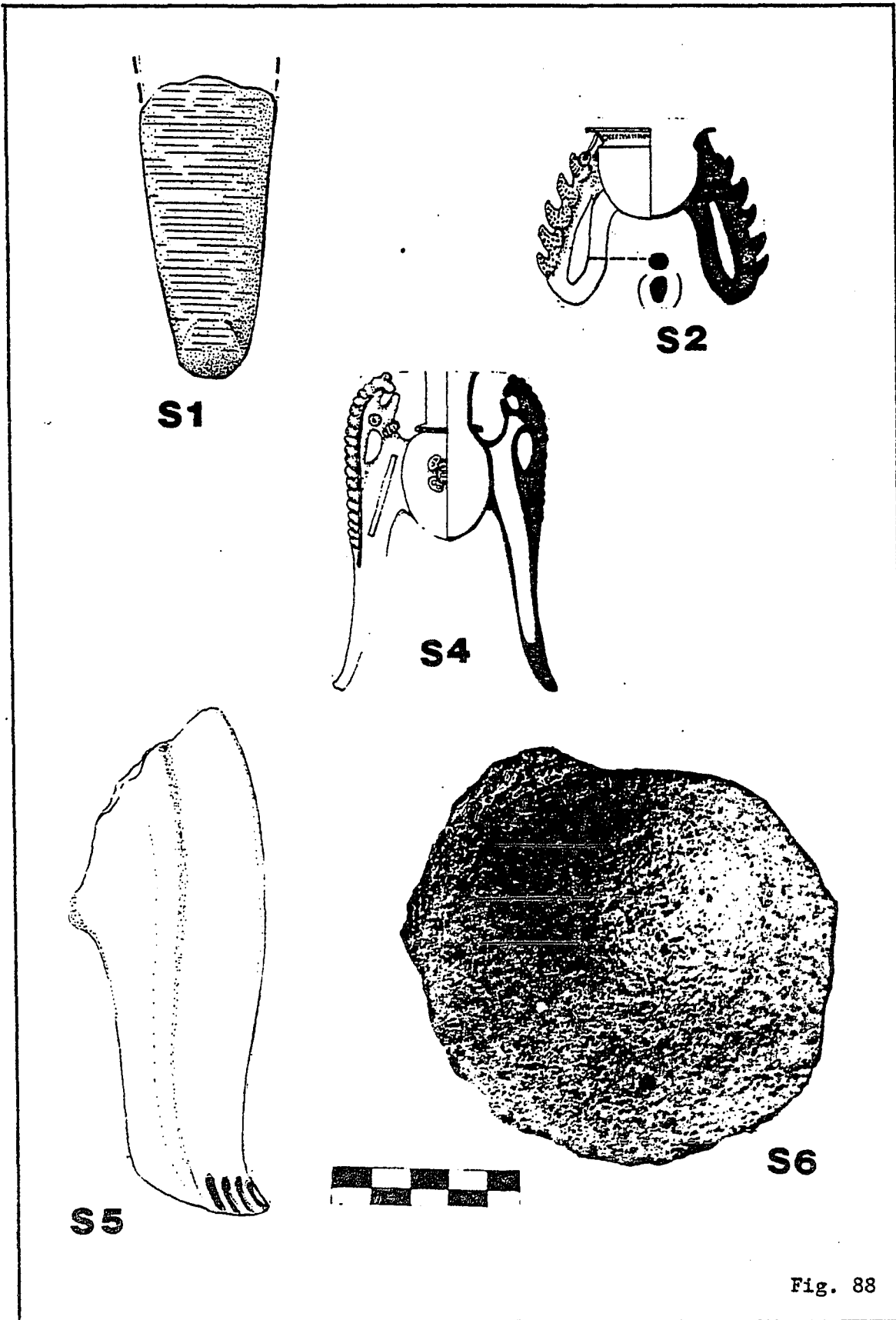
* * *

SX1 - Solid ringstand base, to 1 cm in height.

SX2 - Solid, annular base, between 1 and 2 cm high.

SX3 - Solid annular base, between 2 and 4 cm high.

SX4 - Solid, annular base, between 4 and 6 cm high.



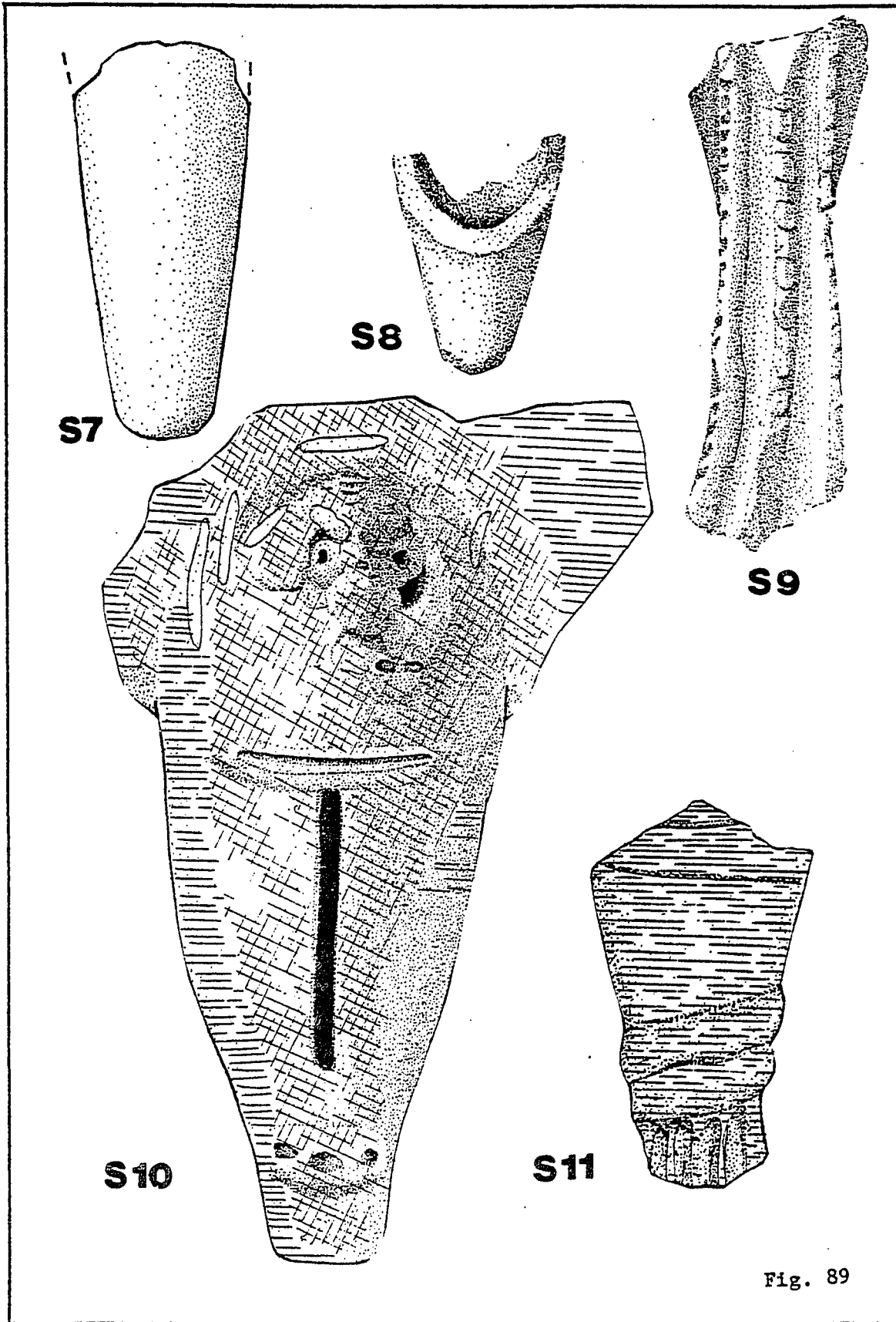


Fig. 89

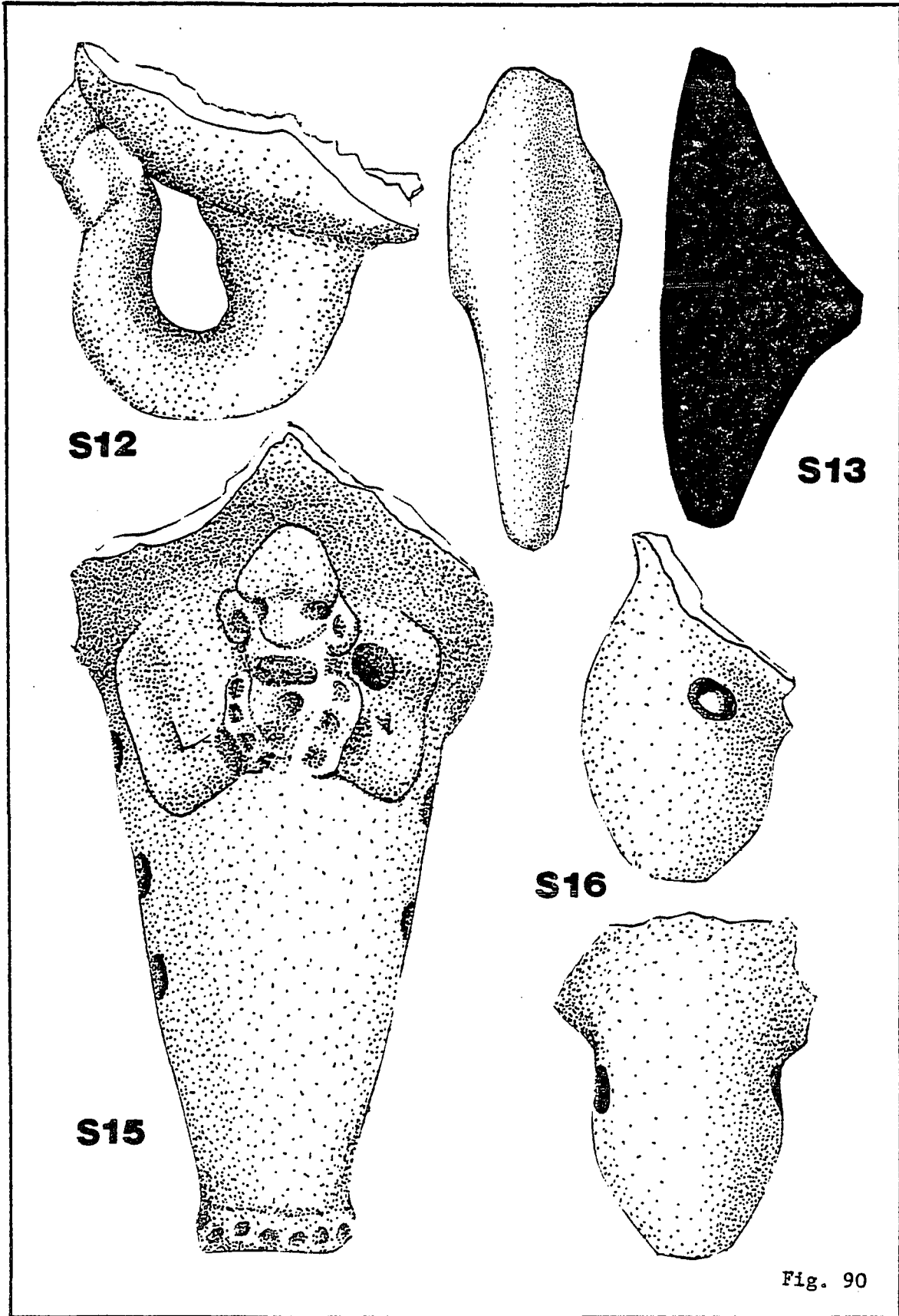


Fig. 90

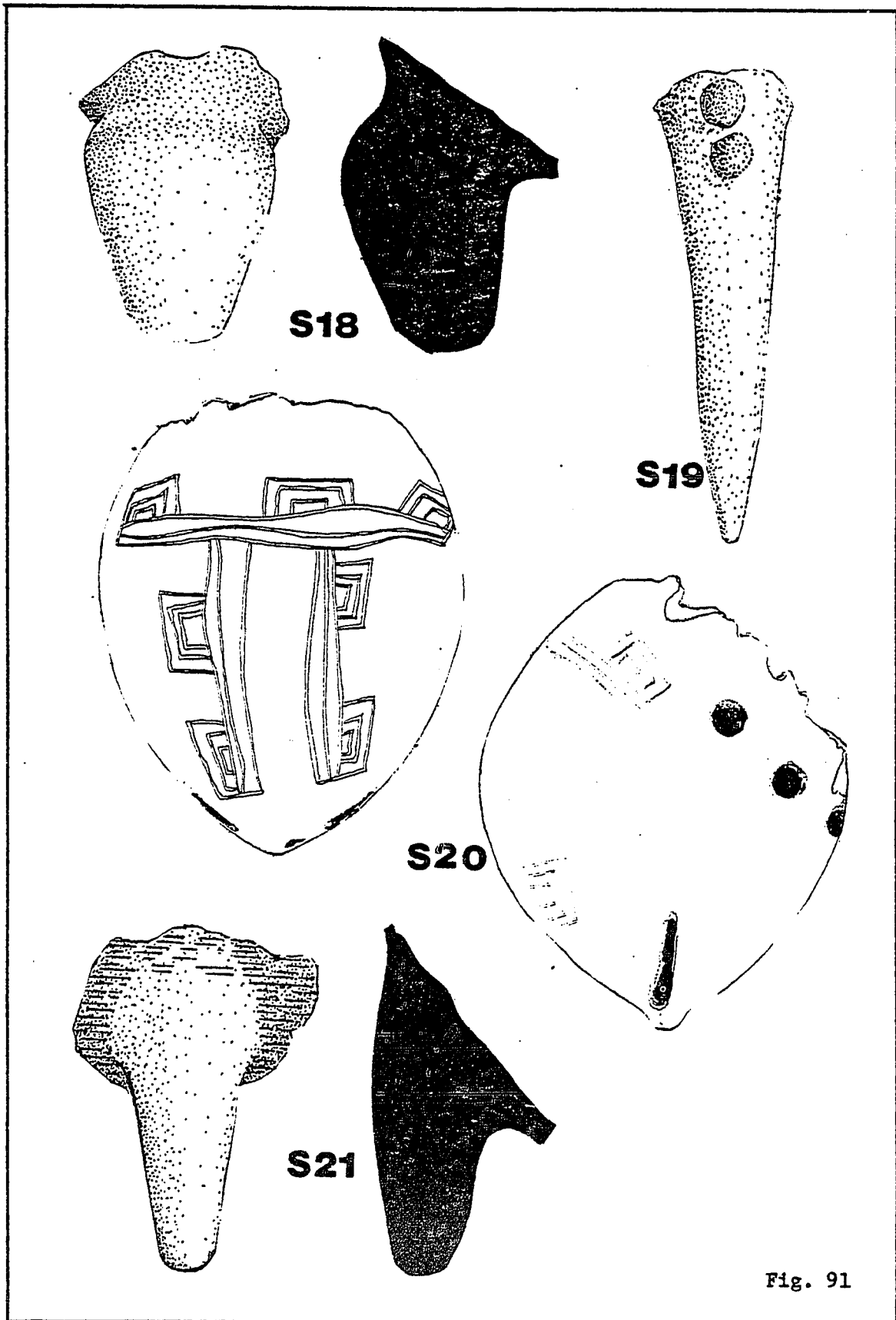
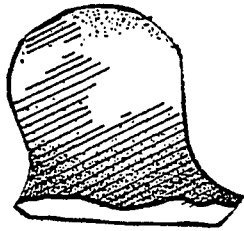
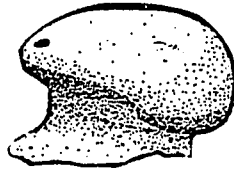


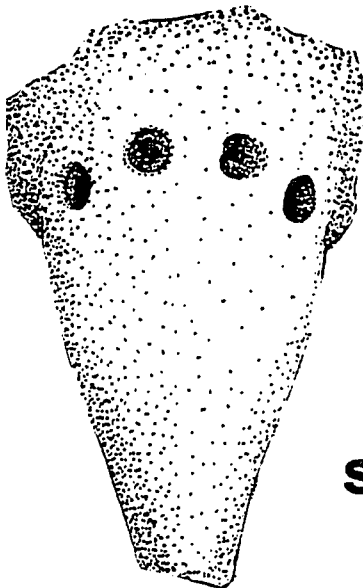
Fig. 91



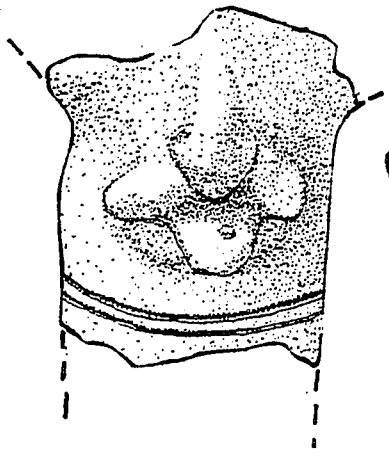
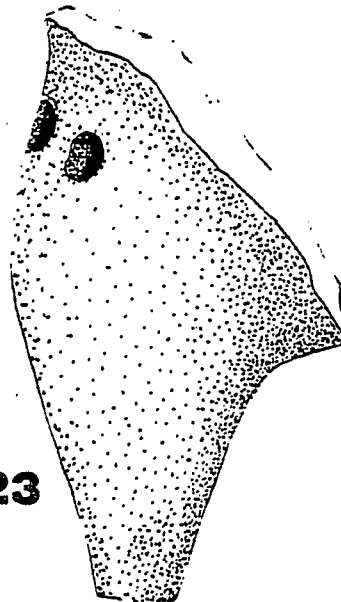
S22



S24



S23



S25



Fig. 92

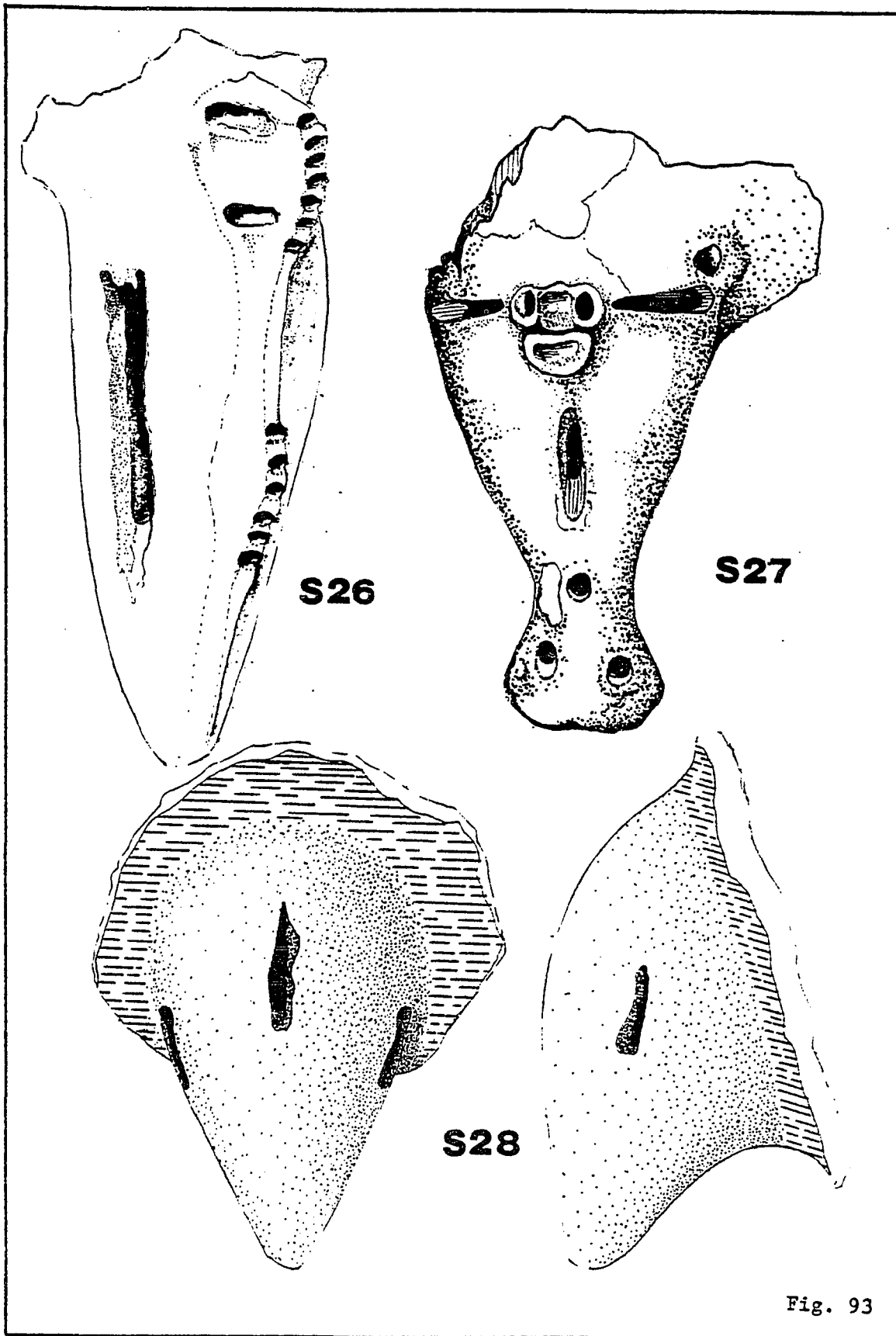


Fig. 93

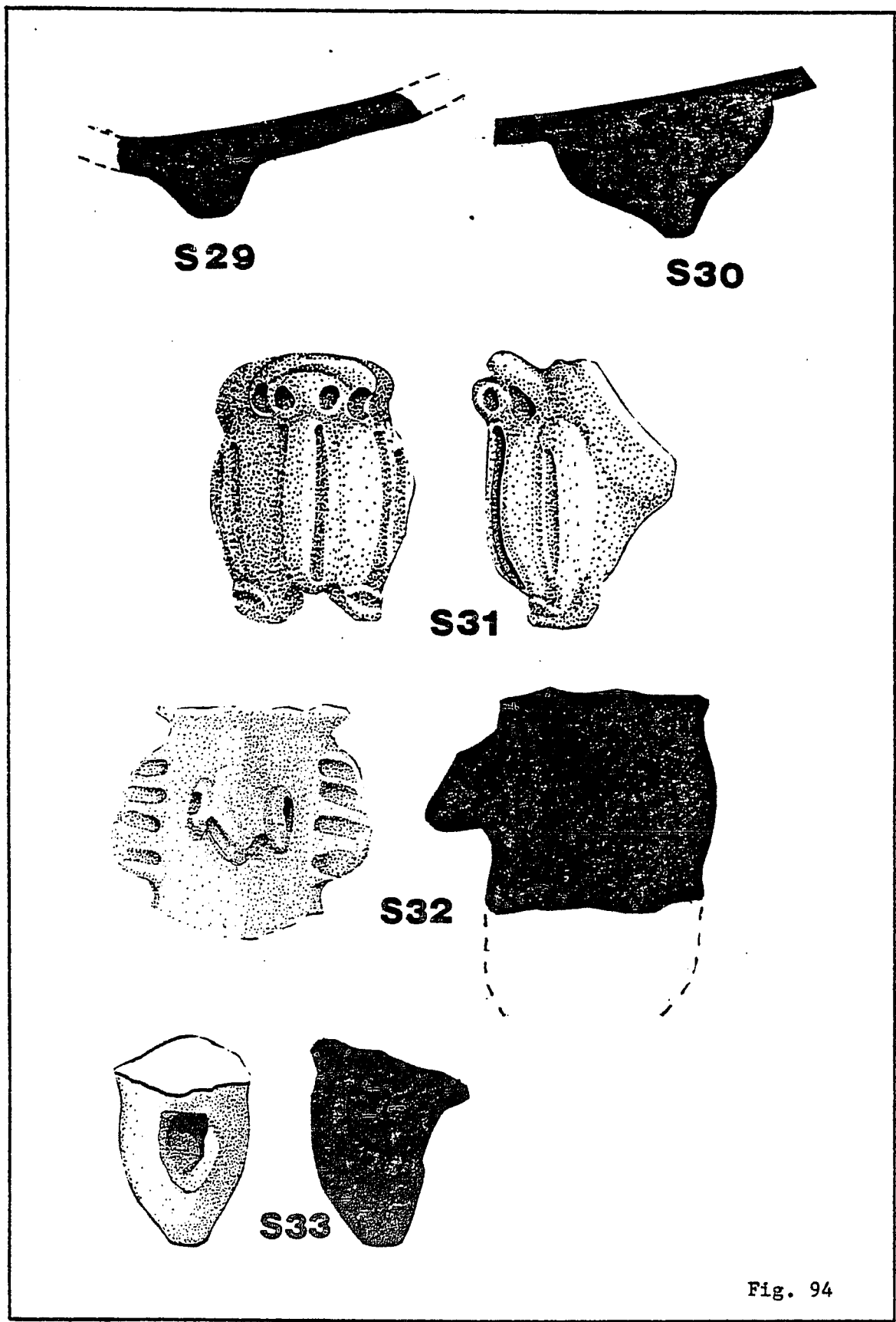


Fig. 94

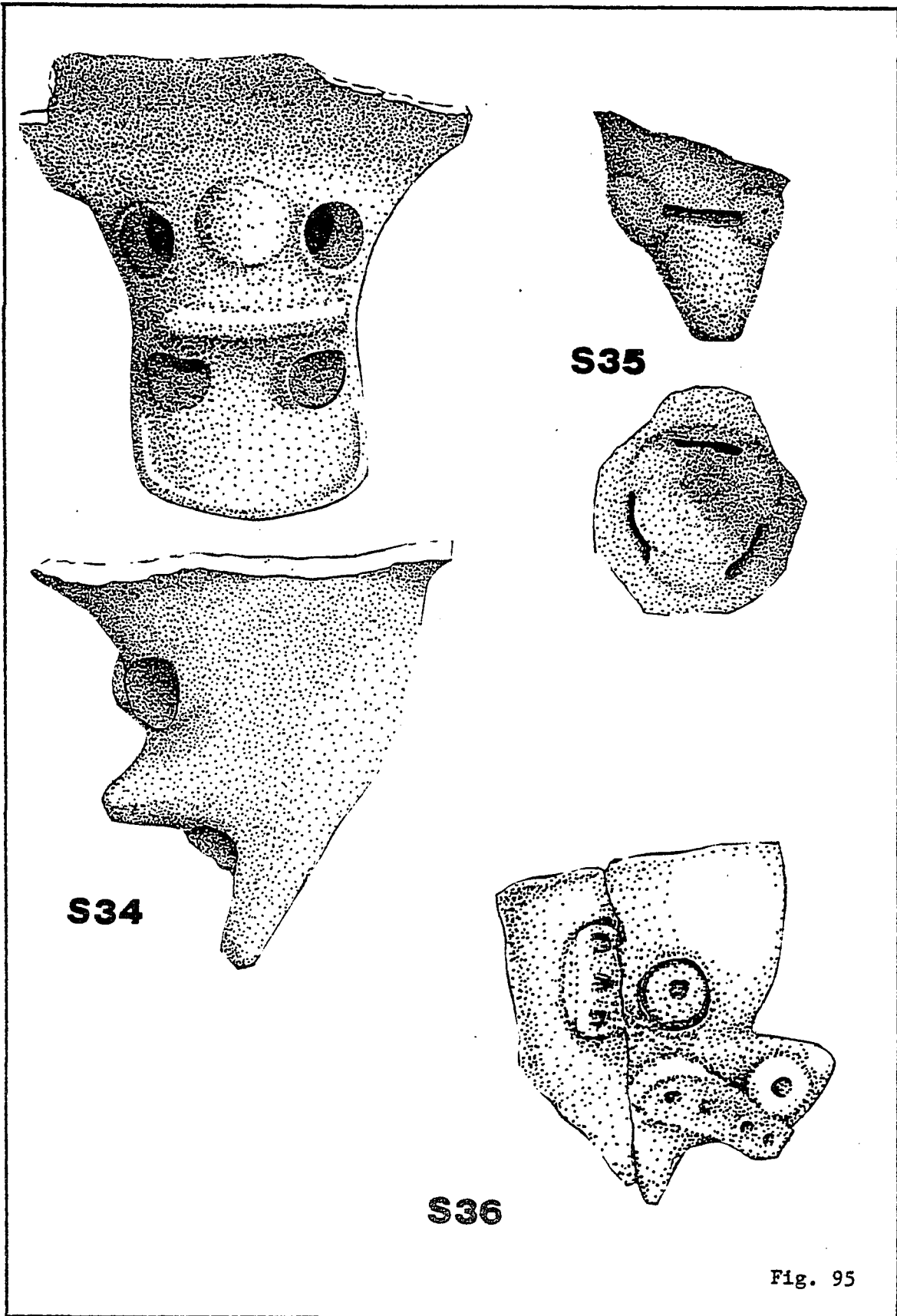
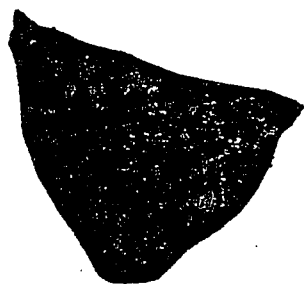
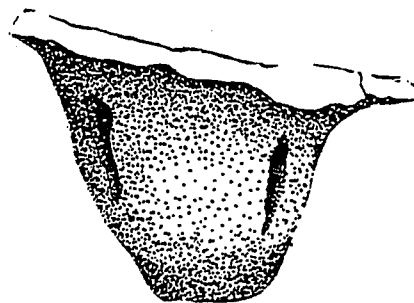


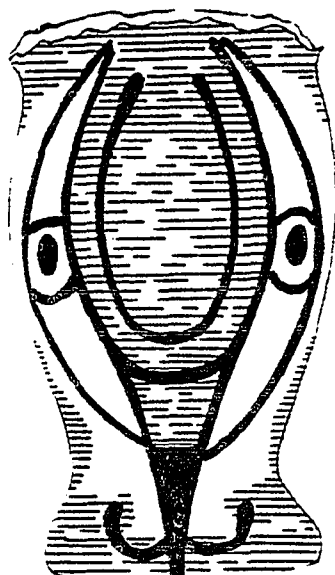
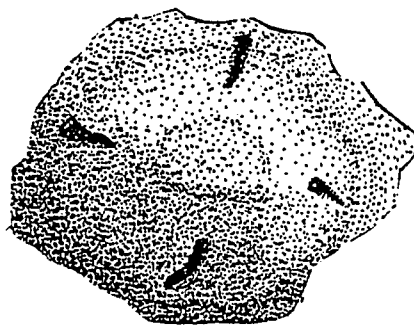
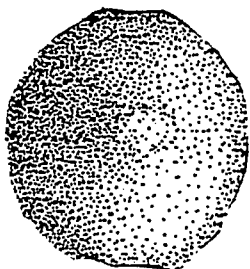
Fig. 95



S37



S38



S39

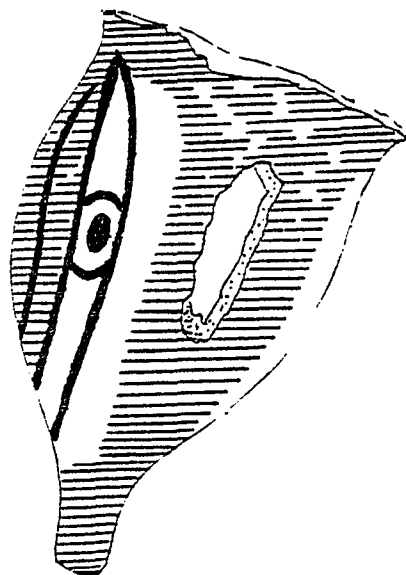
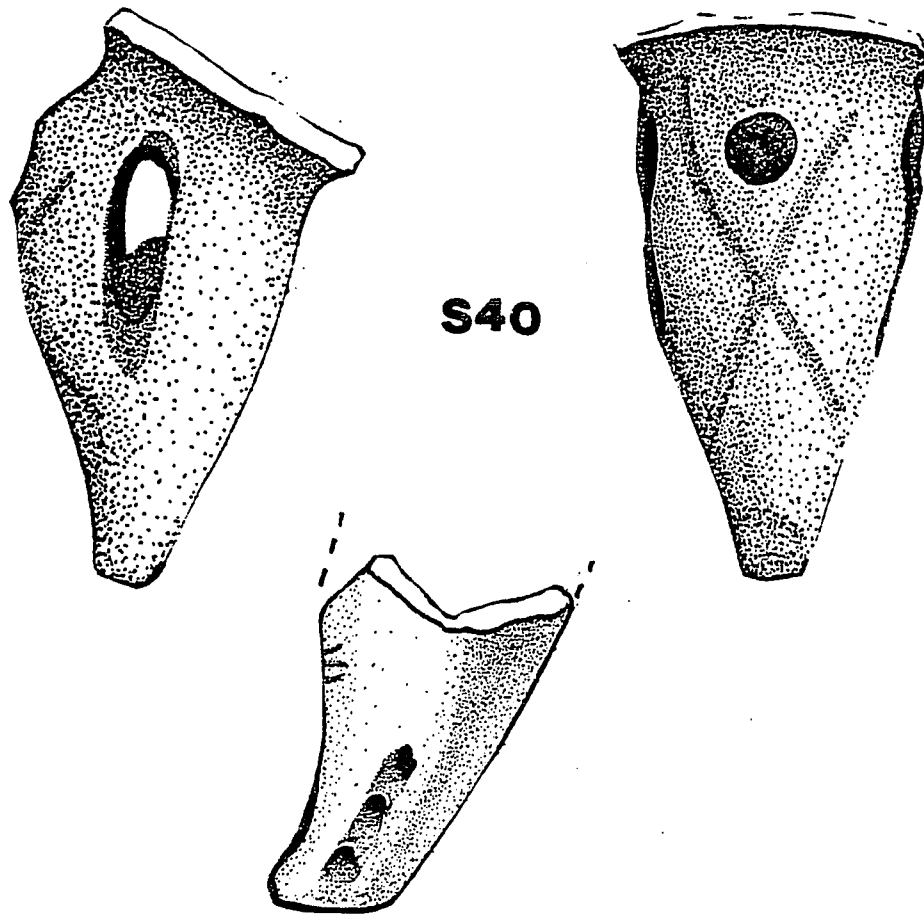


Fig. 96



S40



S41

Fig. 97

APPENDIX 5 : HANDLES AND OTHER FORMS

- H1 - Solid, rectangular tabs with rounded corners; sometimes with nicked decoration.
- H2 - Small, round handle at vessel collar with perforation of cord size.
- H3 - Similar to H2, but less round and with punctate decoration in the form of eyes.
- H4 - Finger-size handle placed on everted rim; generally in the form of a zoomorphic effigy composed of applique pellets and strips, further decorated with punctations and cylindrical tool impressions.
- H5 - Large strap handle, frequently decorated with a smoothed-in applique pellet.
- H6 - Three conical projections arranged side by side to form a handle.
- H7 - An everted tabular projection at the lip of an open bowl; generally tri-lobed and with teardrop or oval shaped impressions on the upper surface.
- H8 - Smaller, thicker strap handle.
- H9 - An everted, semi-oval projection at the lip of an open bowl, generally with three gouges or oblique punctations on the upper

surface.

- H10 - An hourglass-shaped handle attached to the lip and shoulder of a chimney-shaped vessel; usually with applique pellet at the center.
- H11 - Solid, slightly flattened handle joining double vessels.
- H12 - Hollow handle of a frying pan-like censer; usually with rectangular hole and applique decoration, frequently in the form of human and zoomorphic effigies.
- H13 - Roughly semi-circular strap handle, usually quite thin, attached to vessel body; often decorated with applique pellets or adornos.
- H14 - Strap handle with applique decoration, flattened to vessel wall with little or no space beneath.
- H15 - Like H10, but more angular (bow-shaped) in design; usually attached to a small olla rim.
- H16 - Again like H10, but carelessly executed and usually applied flat on the vessel exterior with little or no space beneath.
- H17 - Applique strip modeled in the shape of a hand or paw, flattened to vessel exterior.
- H18 - Solid, forked handle of a frying pan-like censer.
- H19 - Ambiguous zoomorphic adornos attached as handles to small ollas in the style of H4; often avian or reptilian.

- F1 - A sharply angled basal break on carinated bowls; sometimes augmented by a salient flange.
- F2 - Flange along exterior lip.
- F3 - Applique strip along base of rounded, unangled bowl which simulates a basal break.
- F4 - Slight depression at the junction of a slipped vessel wall and an unslipped collar area.
- F5 - Double ridge, forming a finger-width groove, around vessel exterior.
- F6 - An applique strip or bead, placed around vessel shoulder (usually on ollas) to simulate a body break or inflection.

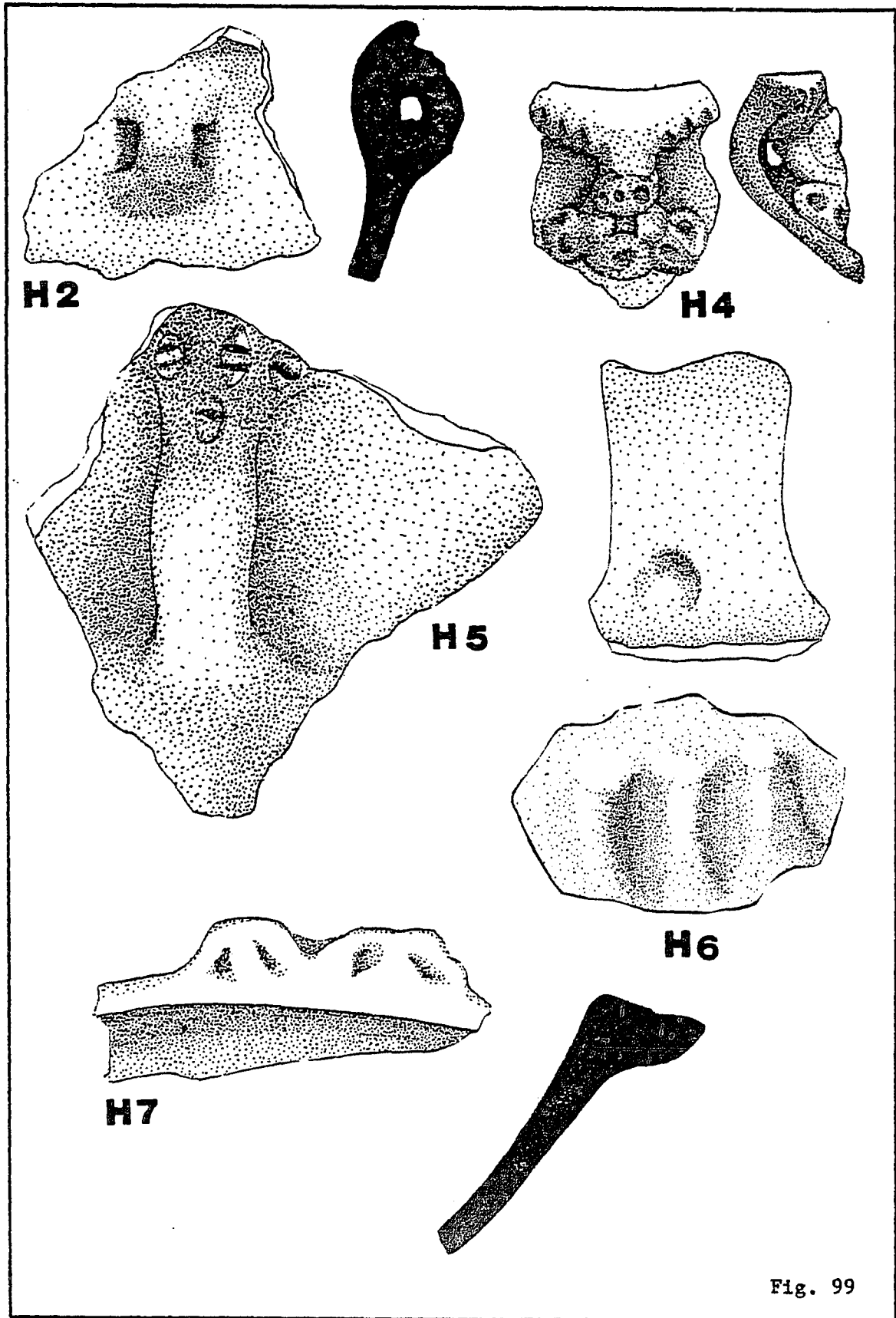
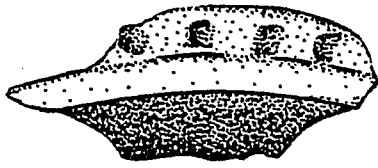
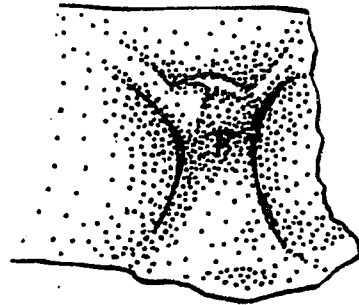


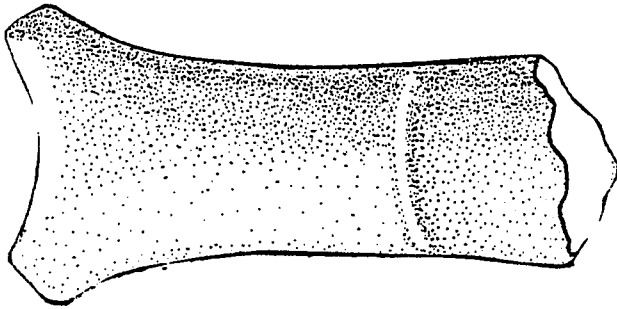
Fig. 99



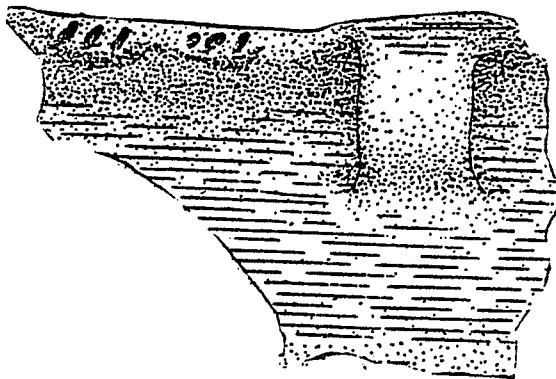
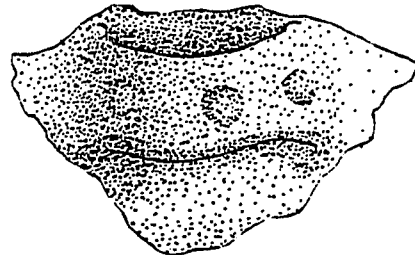
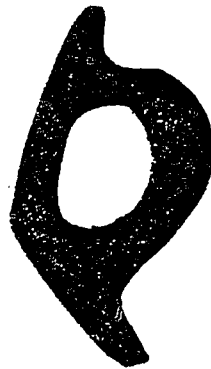
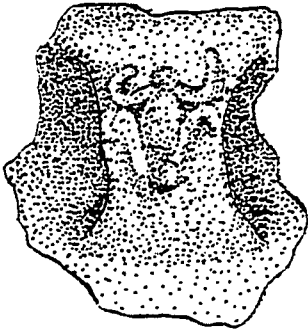
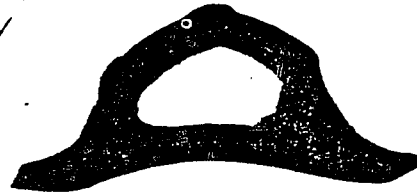
H9



H10



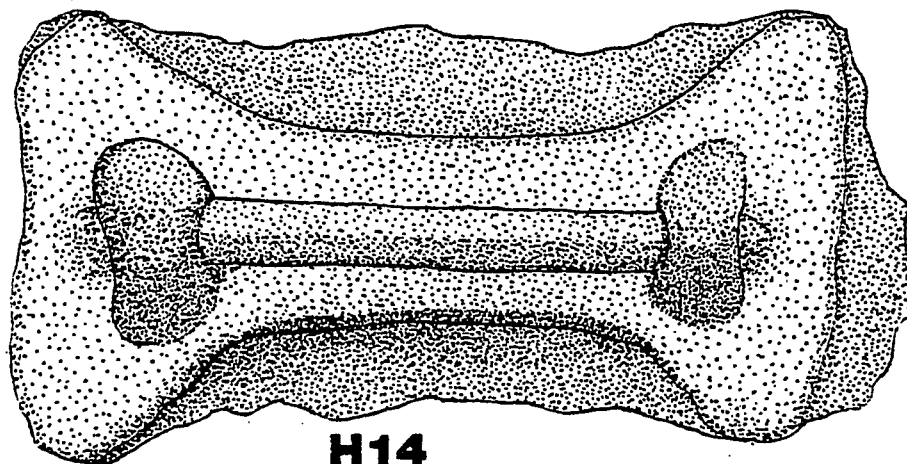
H12



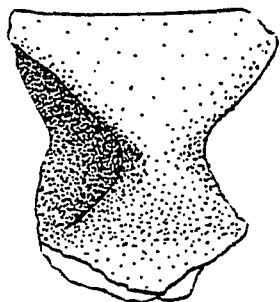
H13



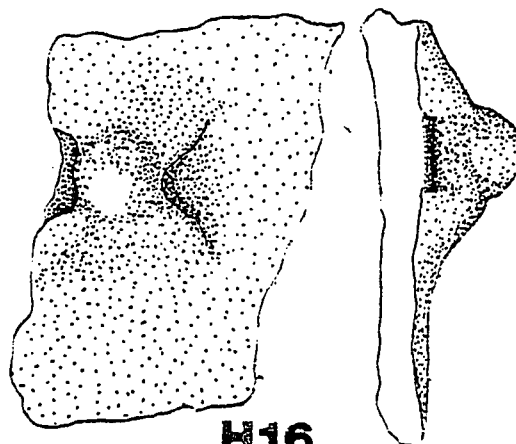
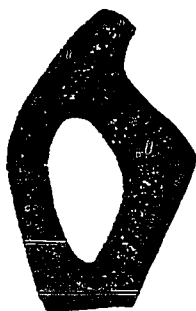
Fig. 100



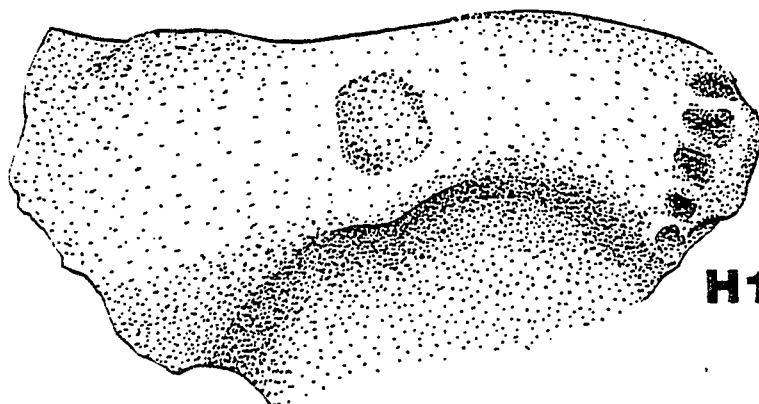
H14



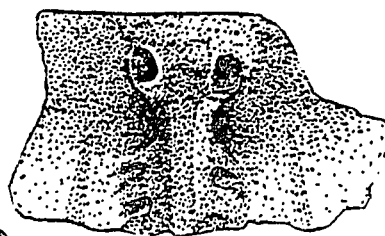
H15



H16



H17



H19



Fig. 101

APPENDIX 6 : MODES OF DECORATION*

- D1 - Stylized double human faces formed by deep conical punctation and tool impressed pellets arranged in rows around the vessel, usually at the juncture of the collar and the wall.
- D2 - Two rows of deep conical punctations around the vessel collar, separated by a groove.
- D3 - Two rows of deep conical punctations around the vessel collar, separated by segments of an applique fillet.
- D4 - Superimposed wing-like tabs on the exterior vessel wall, jabbed with a small 3-pronged tool on both sides.
- D5 - Applique strips applied in a drapery-like fashion on the vessel exterior, with conical punctation in between.
- D6 - Grooves (post-polishing) with smaller conical punctation inside them.
- D7 - Roller dentate stamping, done with a round-toothed tool.
- D8 - Linear geometric motifs executed in fugitive red paint.
- D9 - Vessel lip painted in fugitive red, usually not coinciding with angles in the lip shape.
- D10- Fugitive red paint zoned by round-bottomed post-slip grooving.
- *Diagonal hatching=fugitive red; horizontal hatching=non-fugitive red or orange; crosshatching=maroon or purple slip or paint.

- D11 - Circumferential post-slip grooving enclosing conical or round-bottomed punctation.
- D12 - Excised or crosshatched incised zones filled with red ochre.
- D13 - Cord stamped (twine wrapped around stick which was then walked or rouletted over the damp clay surface).
- D14 - Drag and jab, executed with a multi-pronged (2-4) tool, probably a filed shell edge in most cases.
- D15 - Red polished slip zoned by post-slip round-bottomed grooving.
- D16 - Zoned fingernail stamped (in some cases may be another tool).
- D17 - Zoned oblique punctation, round or conical tool; sometimes called "pinched".
- D18 - Wavy shell edge stamping, tool picked up for each stroke.
- D19 - Post-slip groove(s) along vessel lip.
- D20 - Zoned smudging.
- D21 - Tool impressed triangles.
- D22 - Roller dentate/dentate rocker stamped; dentate impressions are usually rectangular and separated, probably the result of a filed shell edge (modified shell stamped).
- D23 - El Bosque-style zoomorphic adornos (frogs, crabs, alligators, monkeys, snakes plus many unidentifiable), all with a smooth contoured "Walt Disney" look, usually unpainted.

- D24 - Triangular, stylized human faces, composed of reed stamping, triangular stamping, incision and shell stamping, frequently combined with radiating scarified lines.
- D25 - Applique ridges delimiting bichrome.
- D26 - Pattern burnished.
- D27 - Band of flattened or modeled applique pellets incorporated in a stylized alligator adorno.
- D28 - Painted vertical lines at vessel collar, to 2 cm in width, usually executed in red or maroon.
- D29 - Applique fillet along basal break of bowls which has been pinched or scalloped to represent stylized human faces or alligator scutes.
- D30 - Scarified lines.
- D31 - Channeled or fluted.
- D32 - Combed (probably shell edge).
- D33 - Thin applique fillets representing legs or arms of modeled adornos, mostly on long tripod supports.
- D34 - Reed stamped.
- D35 - Circumferential line of rounded wing-like tabs along the basal angle of bowls, probably representing alligator scutes.

- D36 - Negative or resist painted design; usually in organic black.
- D37 - Broad incised/excised lines, approximately 1 mm thick.
- D38 - Stylized mouth or eye in an elongated "coffee bean" shape.
- D39 - Cylindrical tool impressions on fillets, pellets or adornos, including decorative handles; sometimes looks like notching or nicking.
- D40 - Thick (approximately 1 cm) purple or maroon lines painted on orange slip often along lip and on interior s
- D41 - Wavy line of jabs made with a conical tool.
- D42 - Vertical lines (zones) of red or maroon paint on vessel collar, greater than 2 cm in width.
- D43 - Thinner white lines, often executed with a multiple brush on vessel exterior; frequently combined with D40. These lines sometimes extend vertically to the base of the vessel.
- D44 - Applique pellets which have been smoothed in to clay surface, sometimes looking embossed.
- D45 - Horizontal bands of red or maroon paint, usually 2 cm or more in width, around vessel collar or along a strip of clay (F6) applied around the vessel circumference.
- D46 - Applique pellets with incising.

- D47 - Undulating applique strip applied along the lip of a large olla, sometimes tool impressed.
- D48 - Stylized human faces composed of conical punctations and a tool impressed pellet, usually along vessel lip (D1 is similar, but is double and occurs in rows around the vessel collar).
- D49 - White lines executed with a multiple brush, often circumferential or forming triangles on the vessel exterior.
- D50 - Polychrome painted decoration on an orange slip.
- D51 - Multiple jabbing (2-4 points) on the uppermost surface of an everted rim.
- D52 - Vertical or crosshatched white lines, apparently multiple brush, on vessel exterior or inner surface of rim (ollas).
- D53 - Polychrome painted decoration on a white or cream slip.
- D54 - Modeled, smoothed-in fillets on hollow tripod supports in the form of a tail or legs which, in conjunction with a modeled head, form a zoomorphic effigy vessel.
- D55 - Tear drop-shaped punctation, usually executed on an applique fillet, producing a chain-like motif.
- D56 - Thick, finger painted streaky red lines (geometric motifs) on a streaky orange or cream colored slip.
- D57 - Applique pellets with elongated jabbing marks, sometimes resembling a star-like motif, or face motif.

- D58 - Applique pellets or half-disks, attached to the exterior rim, often with punctation in the form of stylized human faces.
- D59 - Incised arches enclosing punctation, like DX3, but with thinner, carelessly done lines and jabs.
- D60 - Applique zoomorphic adornos done in a curvilinear stick-figure style, and lightly attached to the vessel surface.
- D61 - Geometric motifs executed in yellow paint on zoned orange and brick red slips.
- * * *
- DX1 - Applique pellets.
- DX2 - Circumferential line of jabs made with sharp pointed tool; less often, rounded tool.
- DX3 - Arches or triangles formed on vessel collar by broad incised lines enclosing large round punctation, applique pellets or reed stamping.
- DX4 - Paint applied to zones left rough (unpolished) around supports or adornos; usually maroon paint in earlier periods and white paint in later periods.
- DX5 - Incised or engraved lines up to 1 mm in thickness.

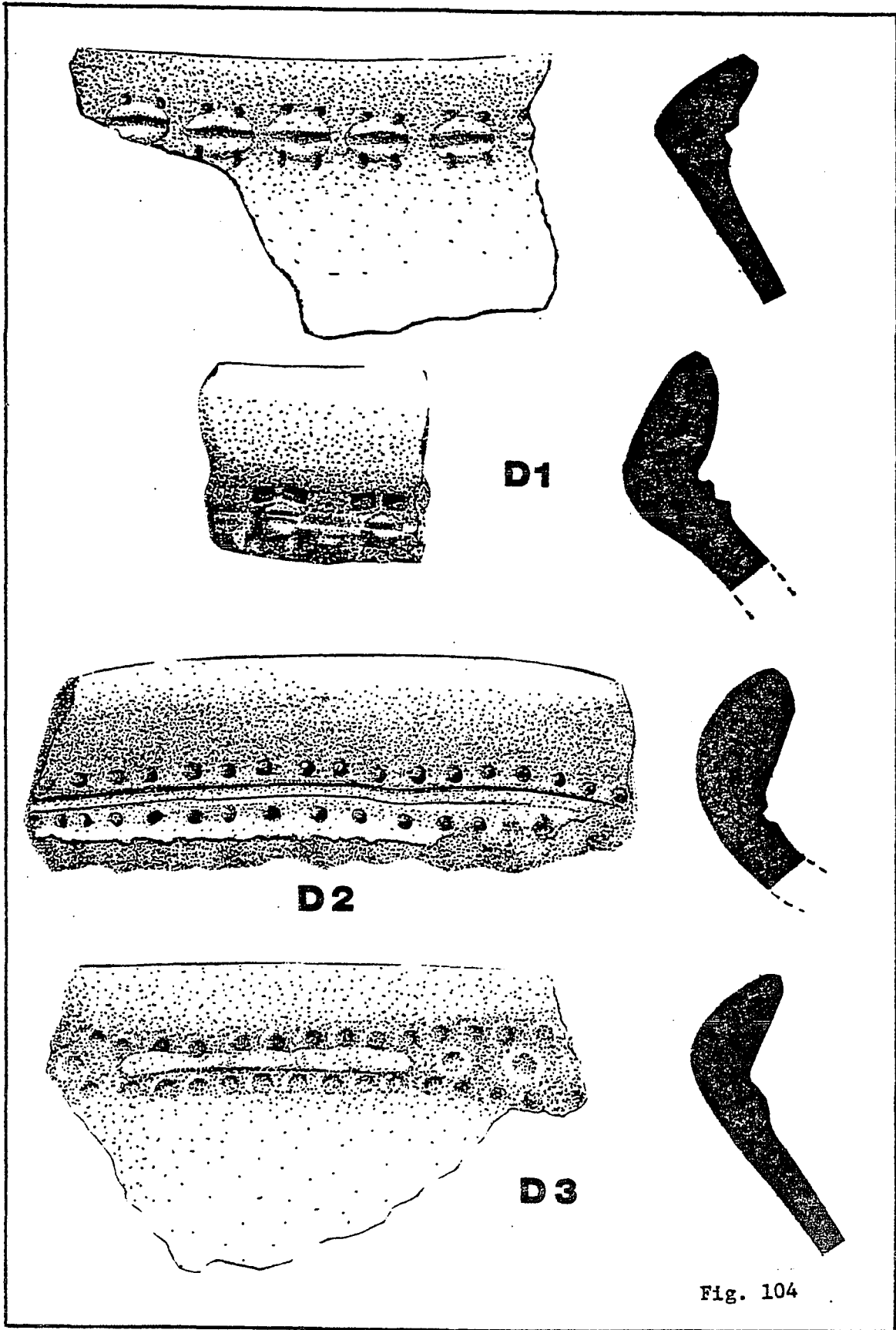


Fig. 104

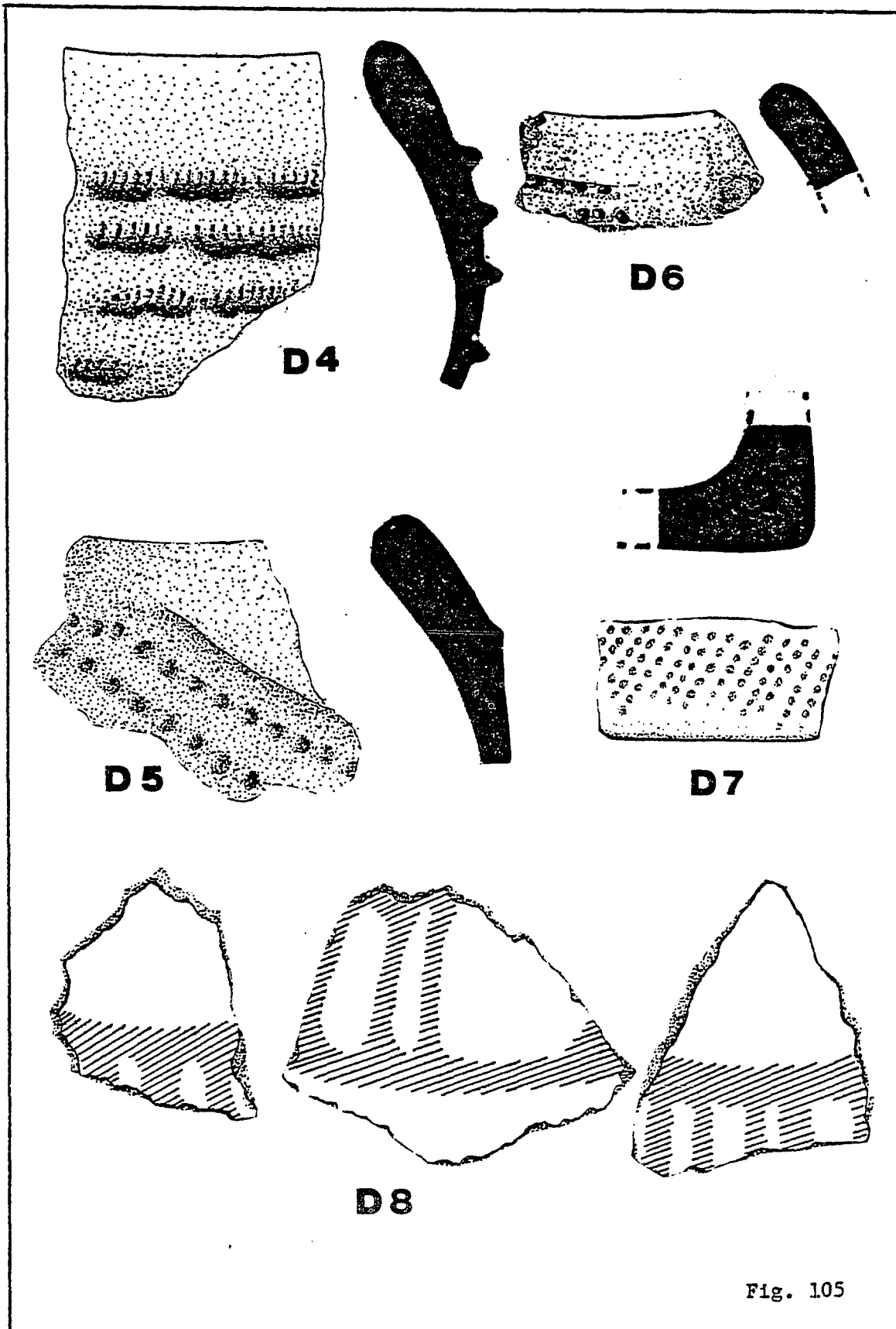
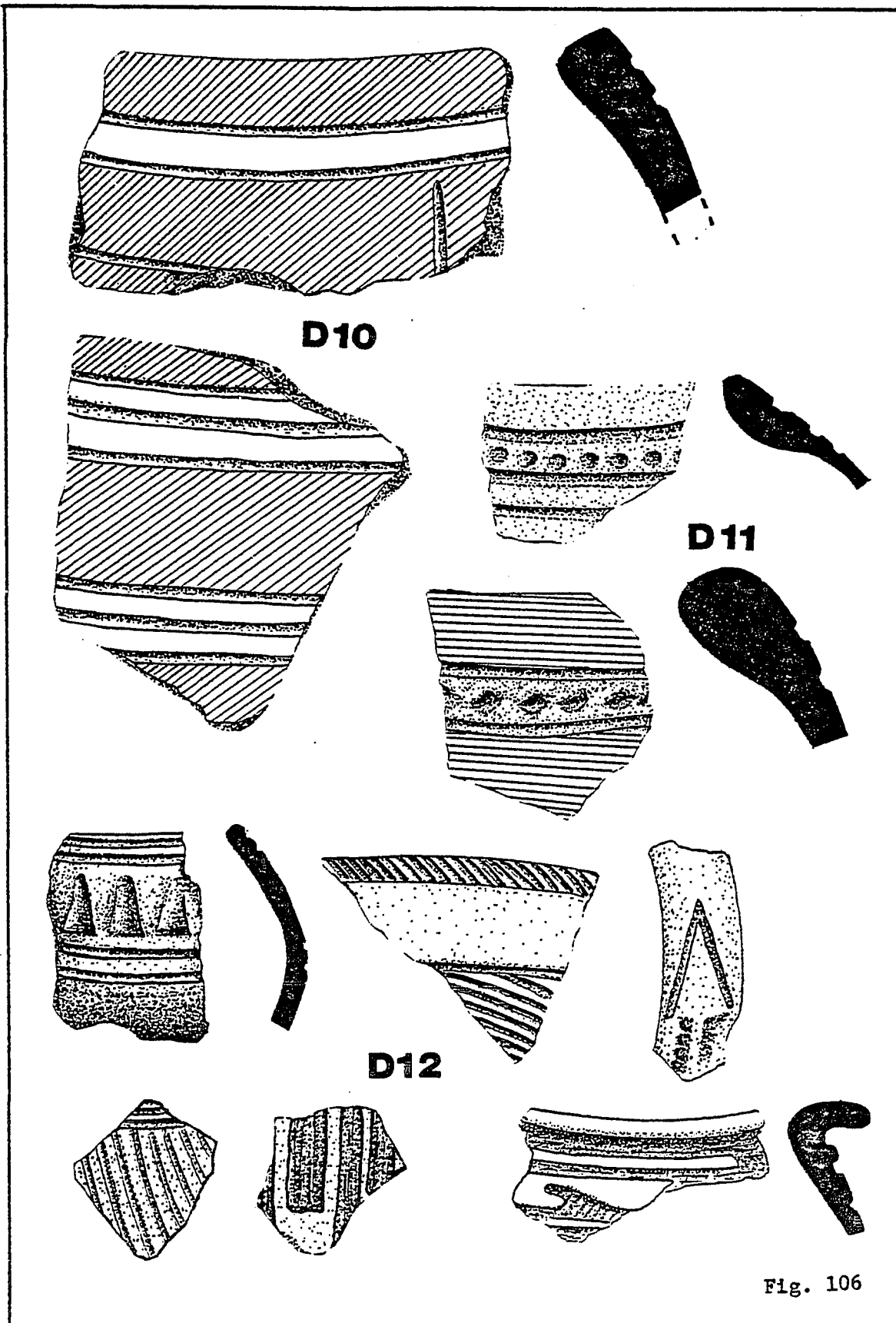
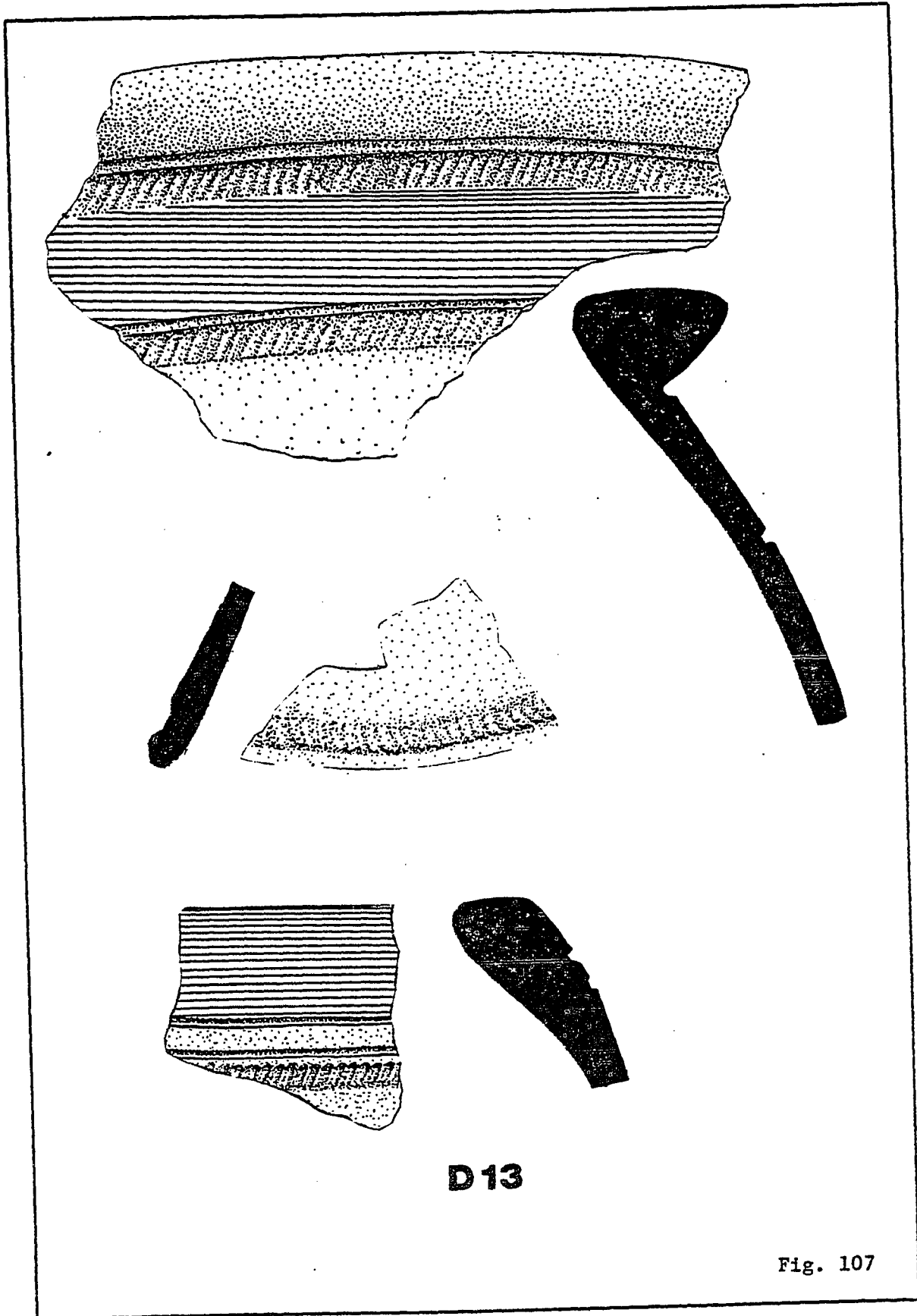


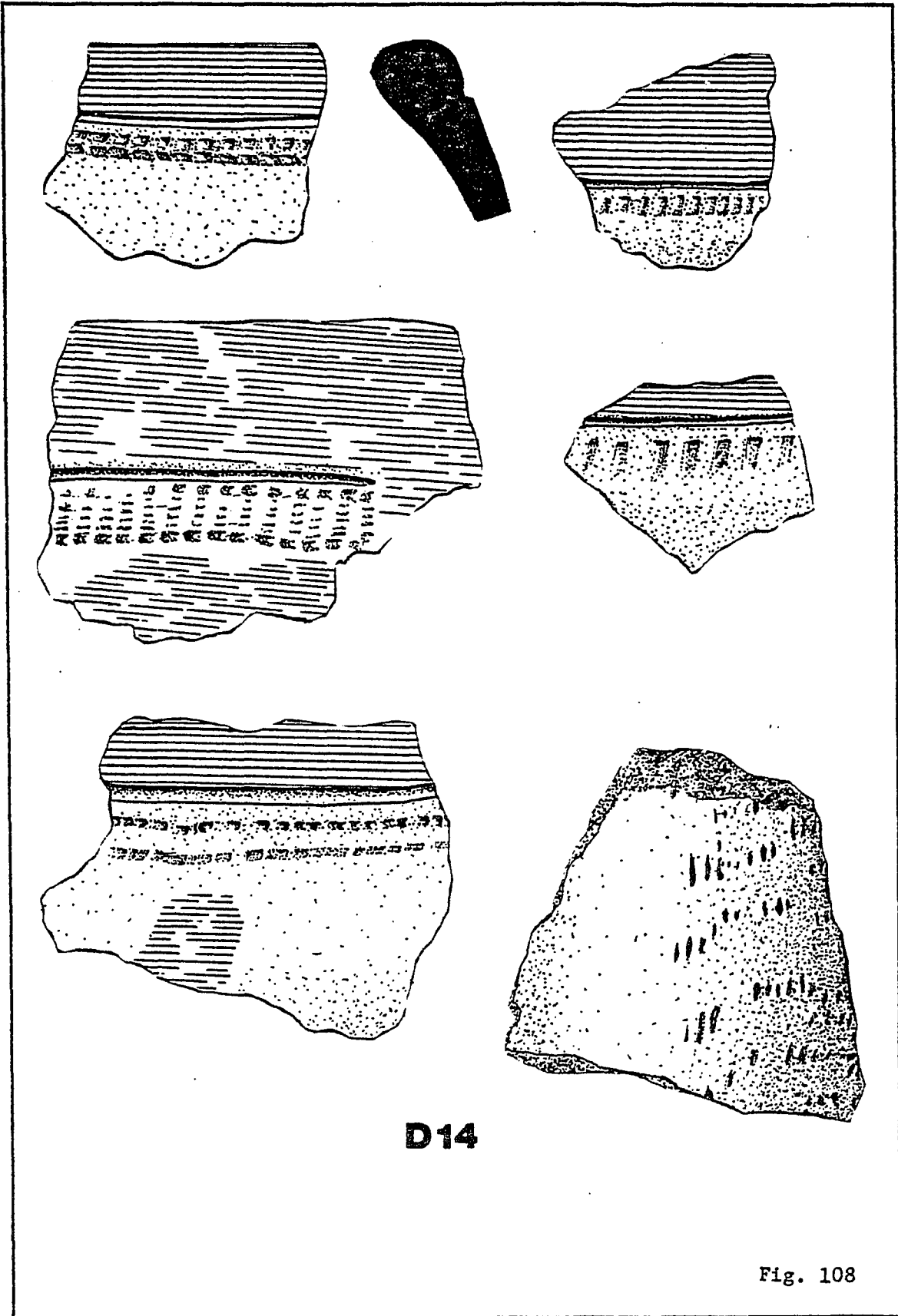
Fig. 105





D13

Fig. 107



D14

Fig. 108

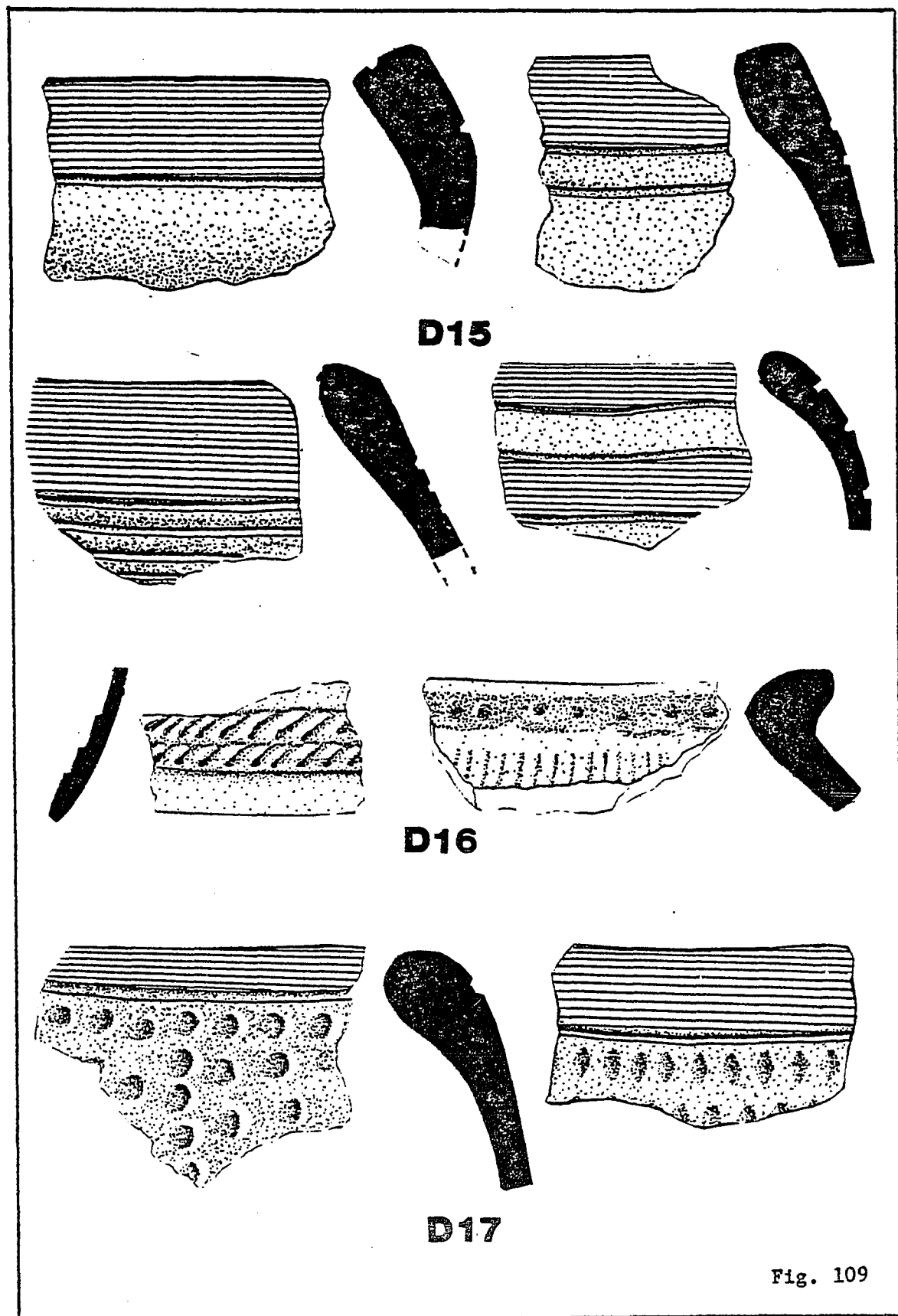


Fig. 109

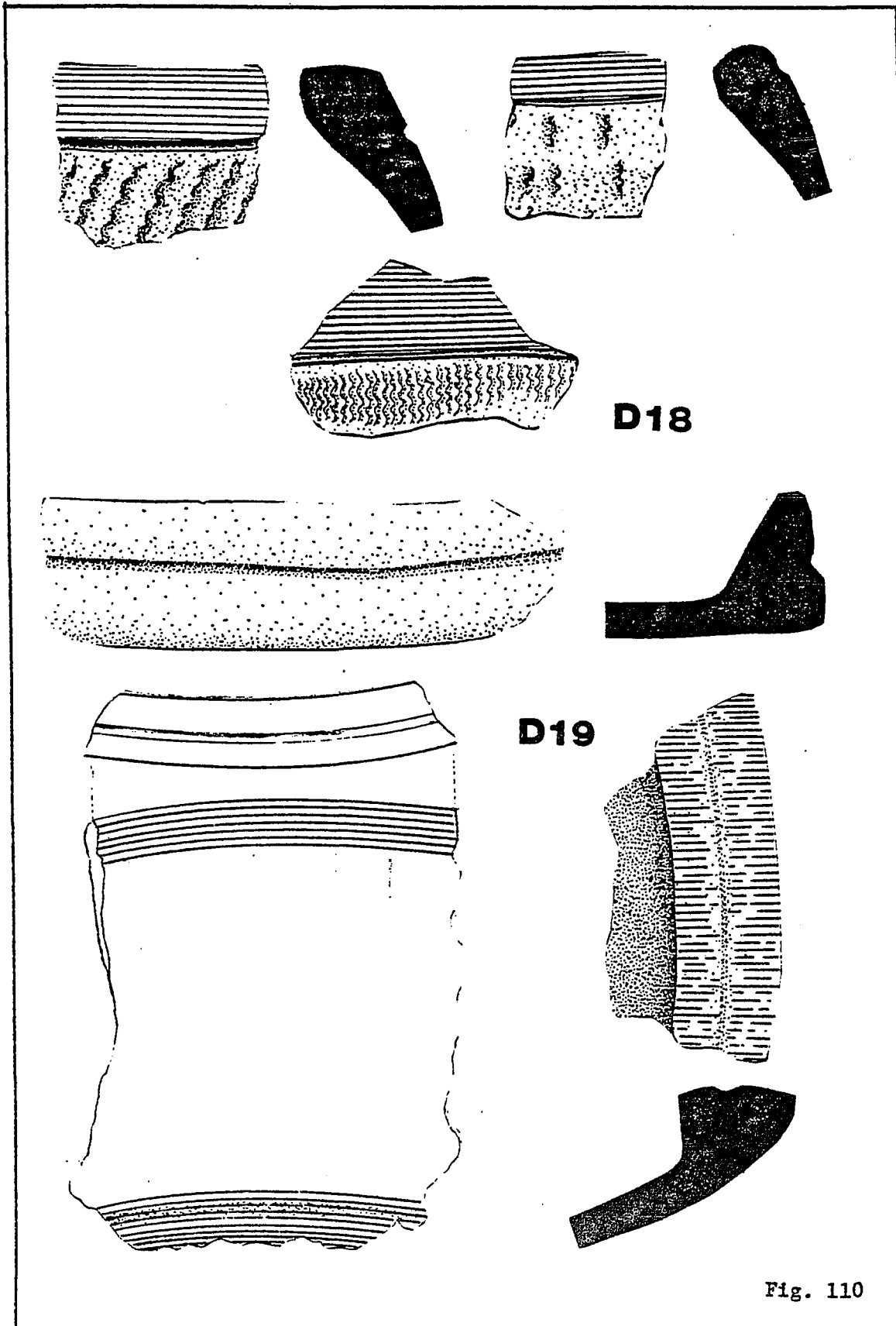


Fig. 110

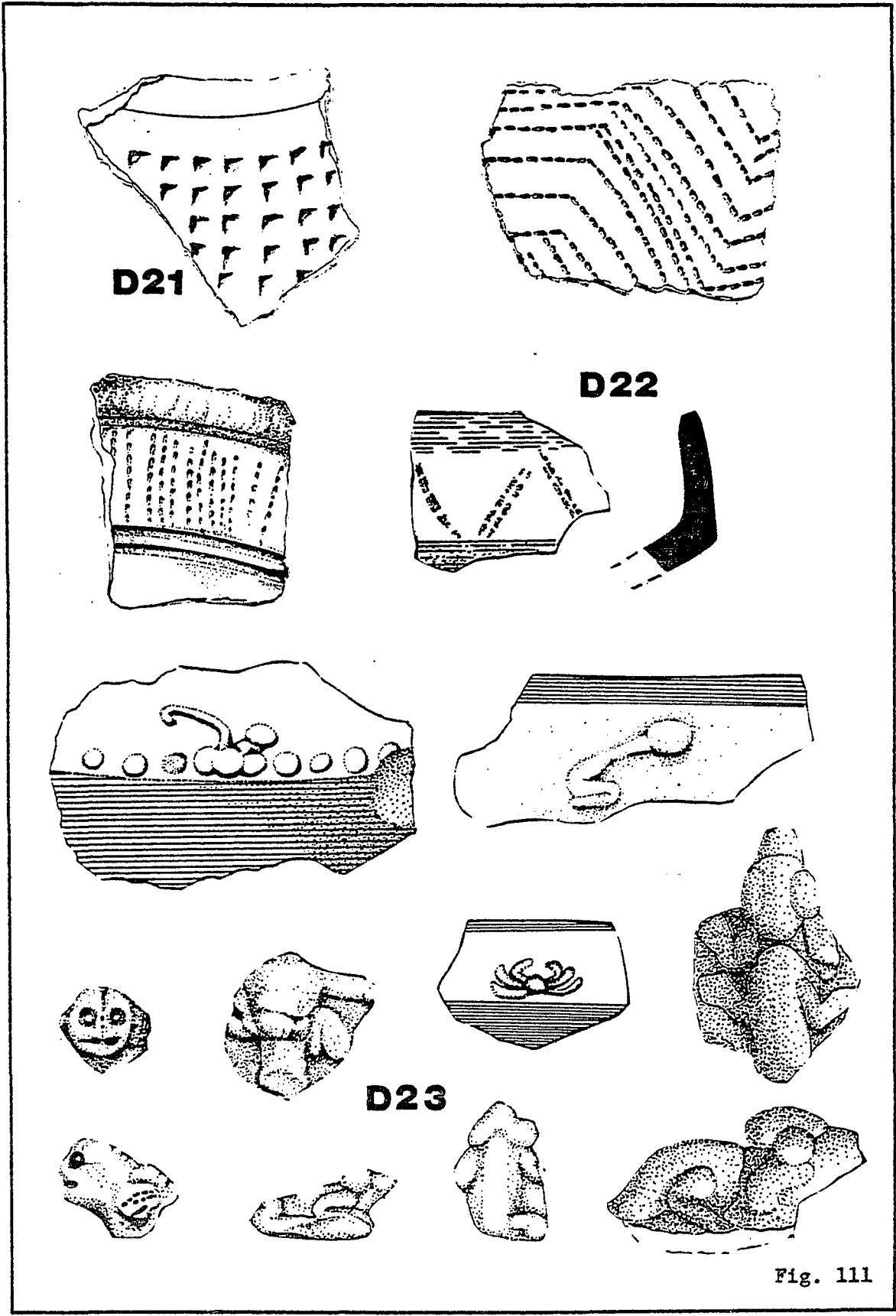


Fig. 111

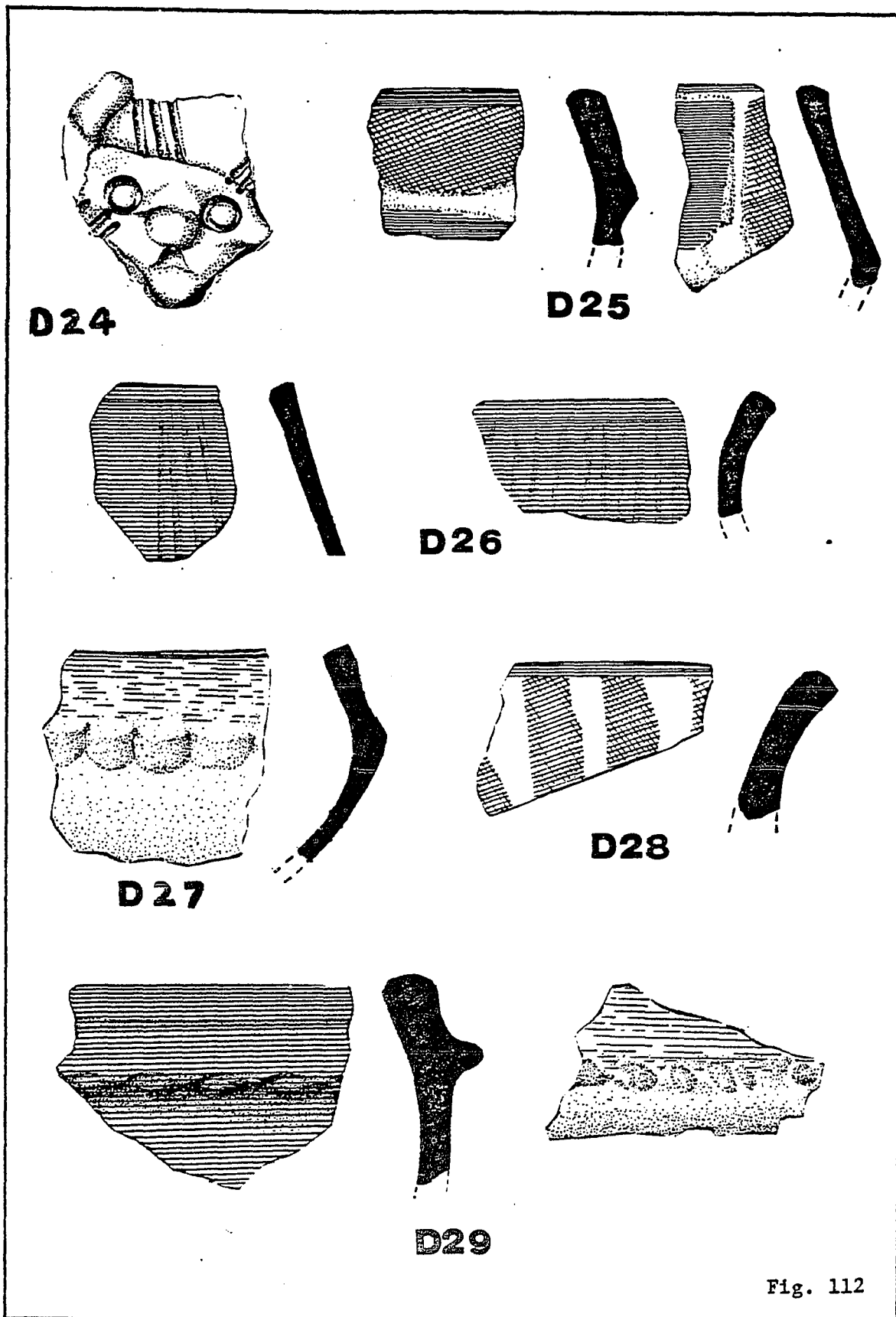


Fig. 112

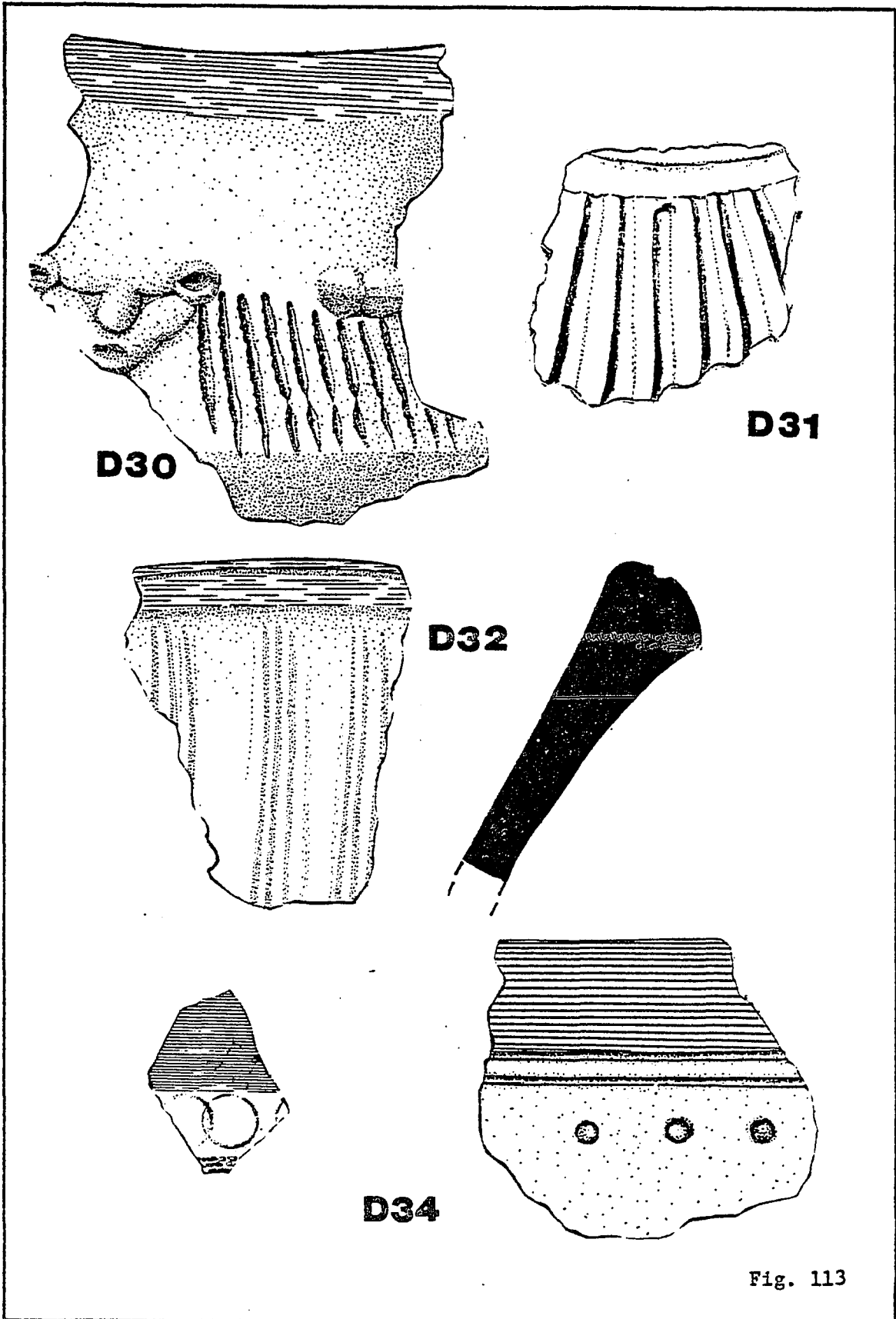
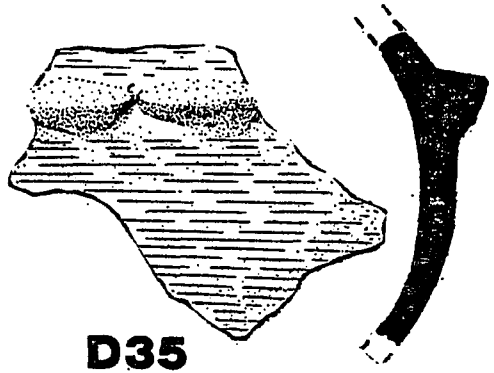
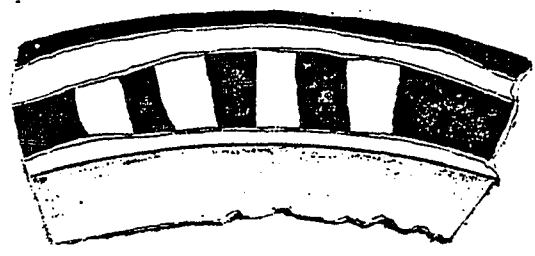


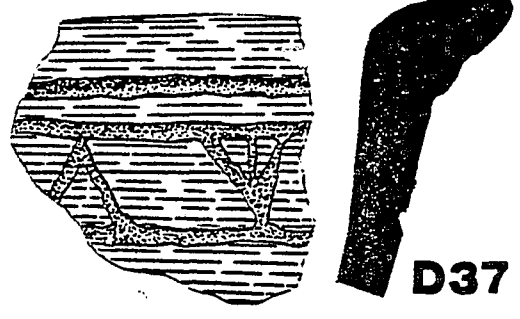
Fig. 113



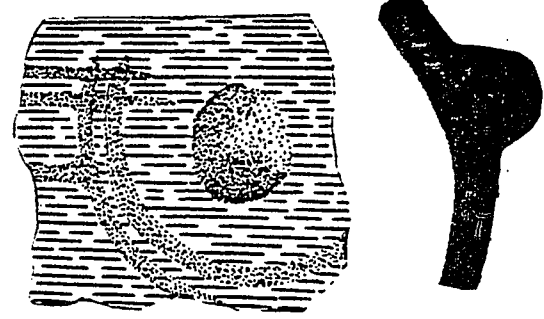
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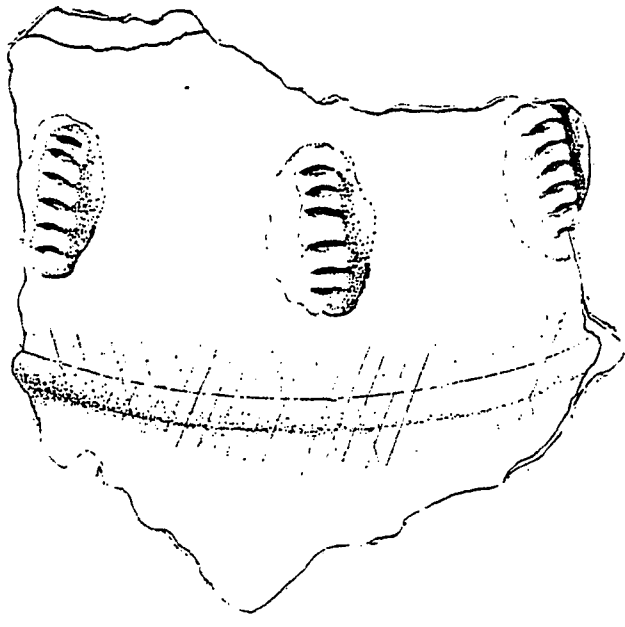
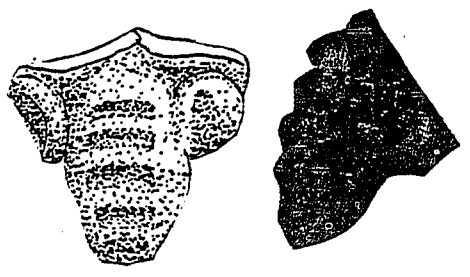
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D37

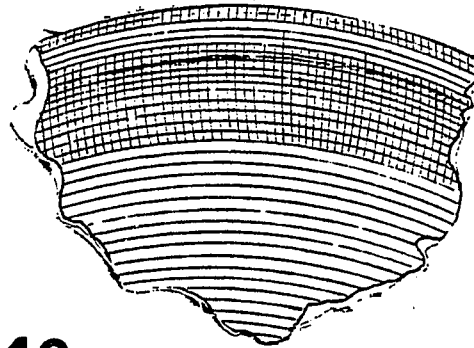
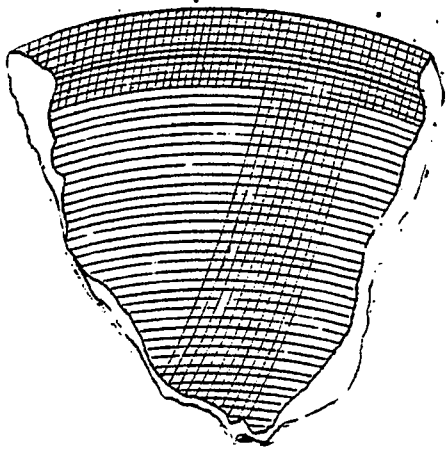


D38

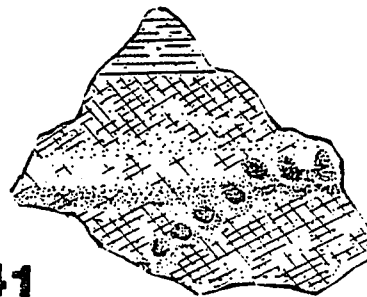
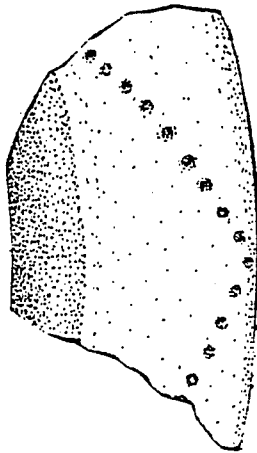


D39,45

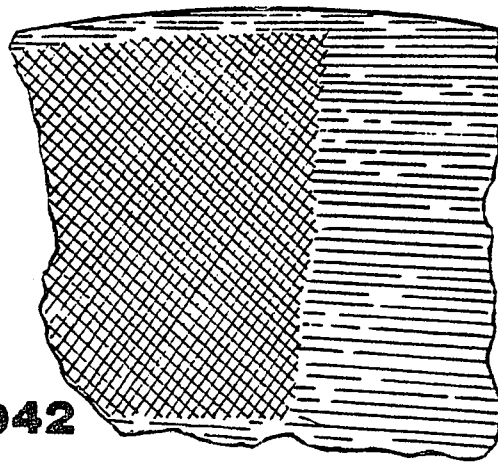
Fig. 114



D40



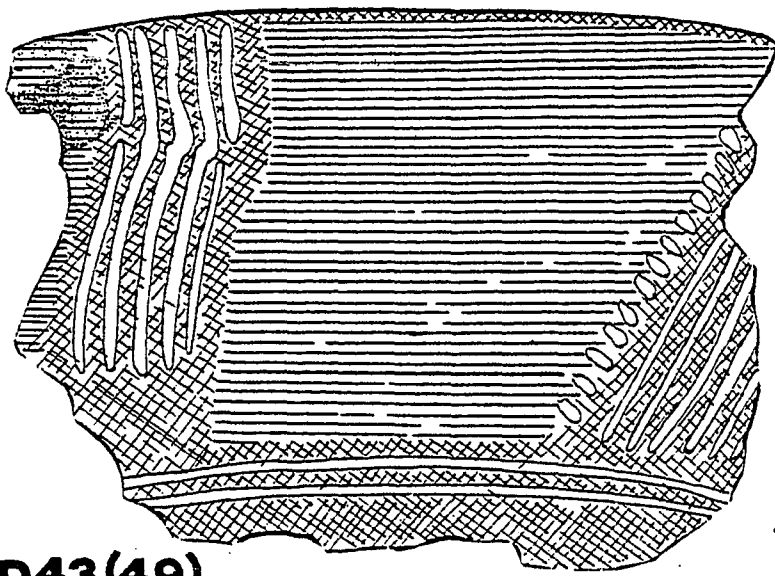
D41



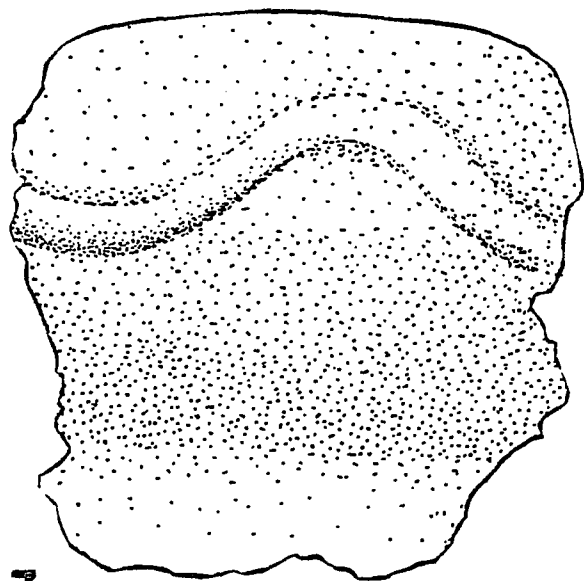
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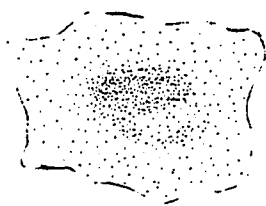
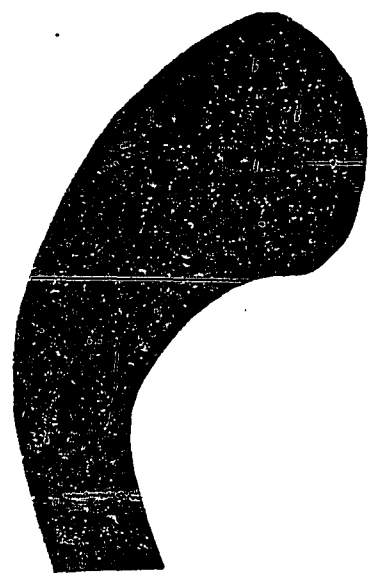
Fig. 115



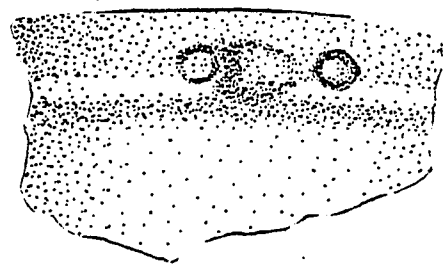
D43(49)



D47



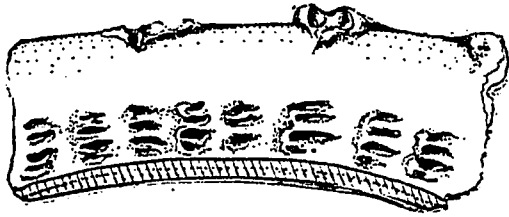
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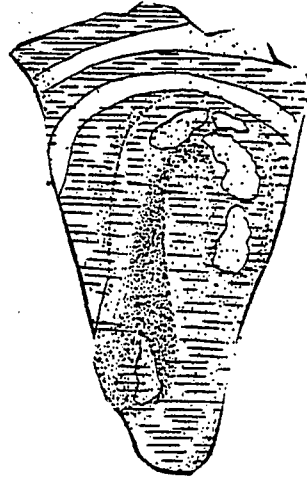
D48



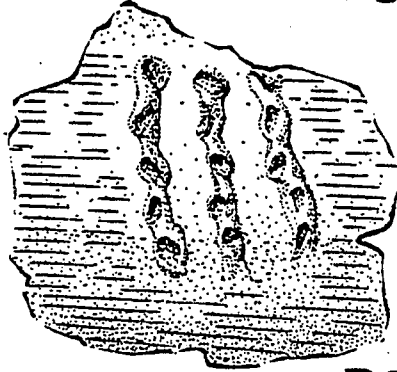
Fig. 116



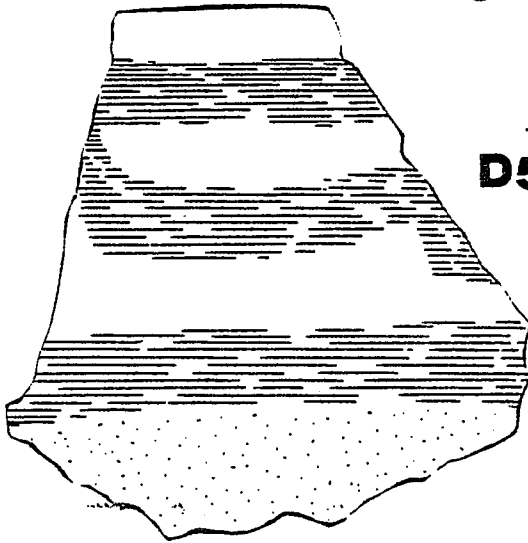
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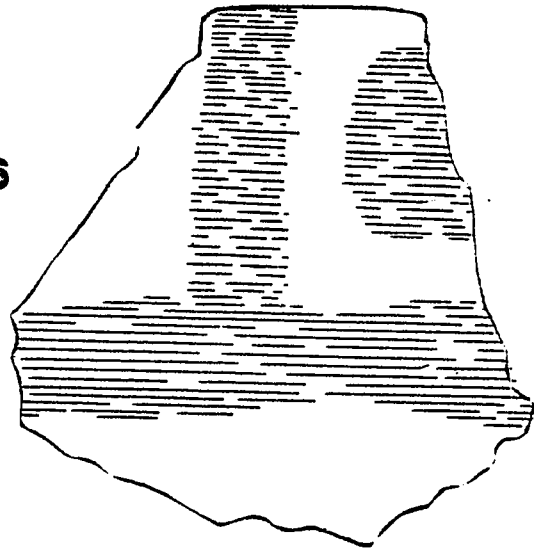
D54



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D56



D57

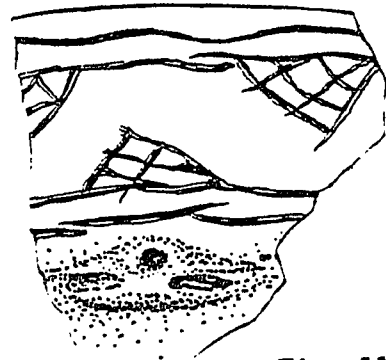
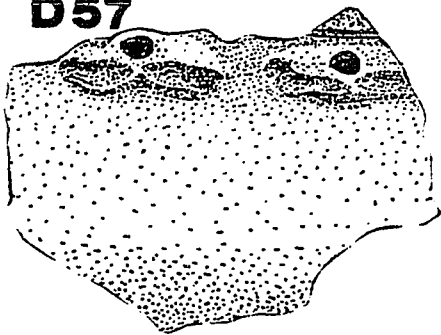


Fig. 117

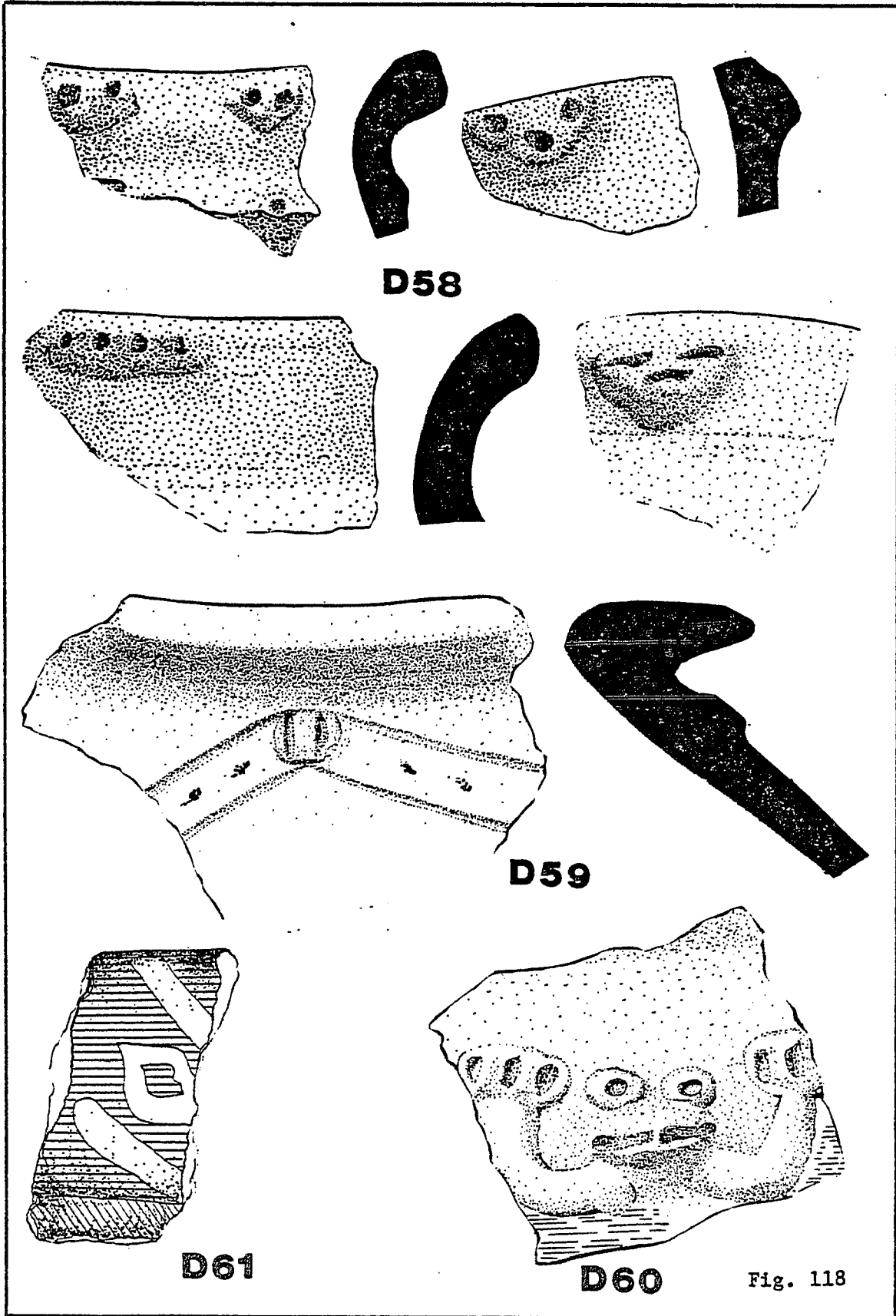


Fig. 118

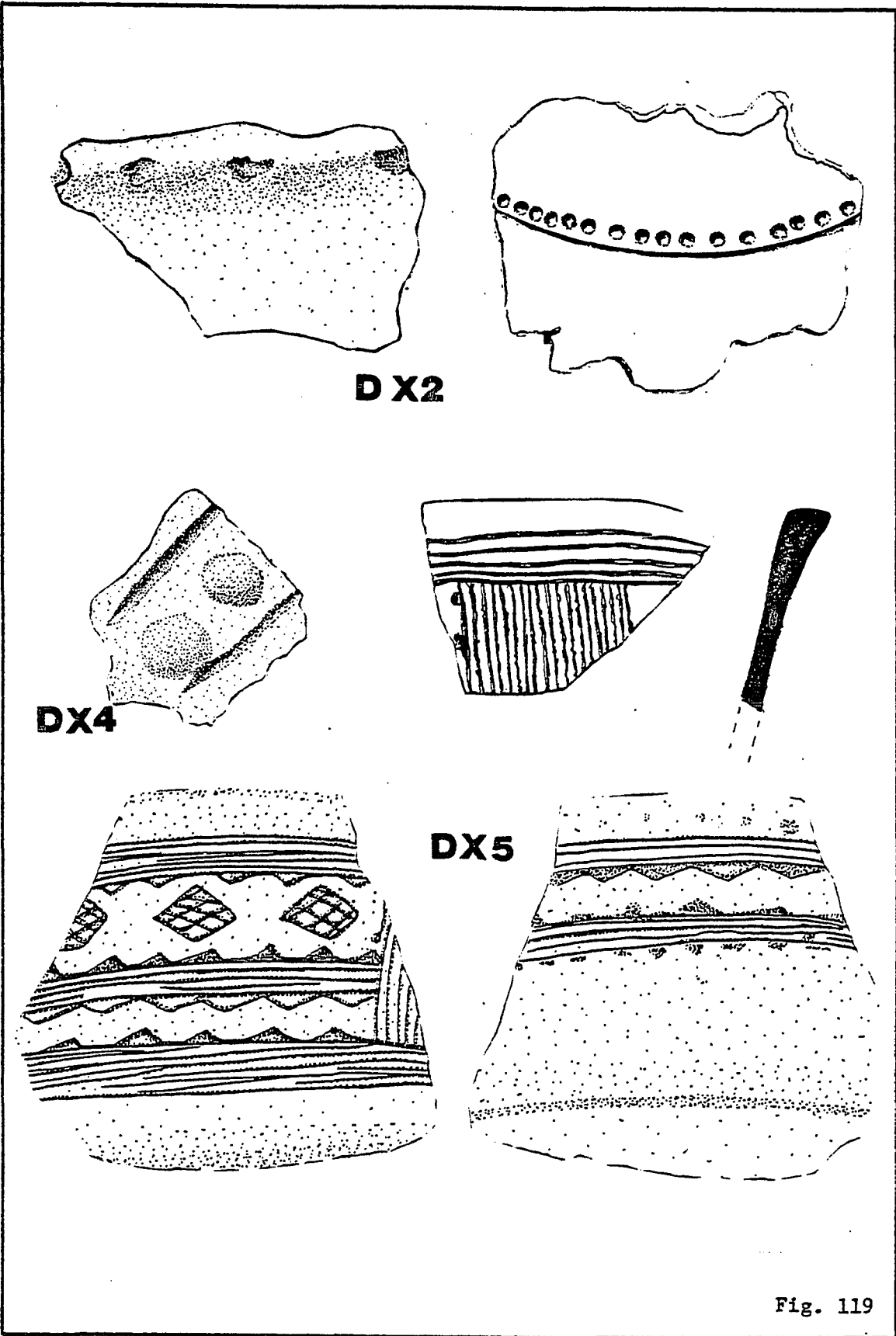
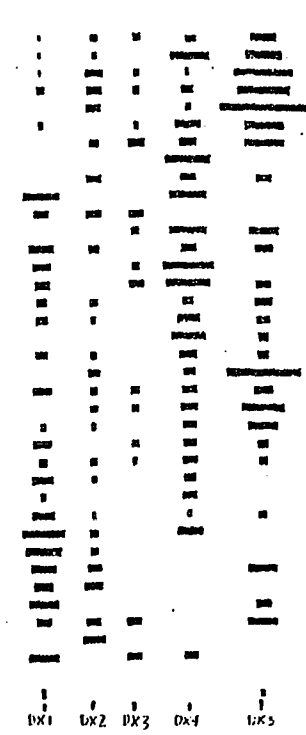
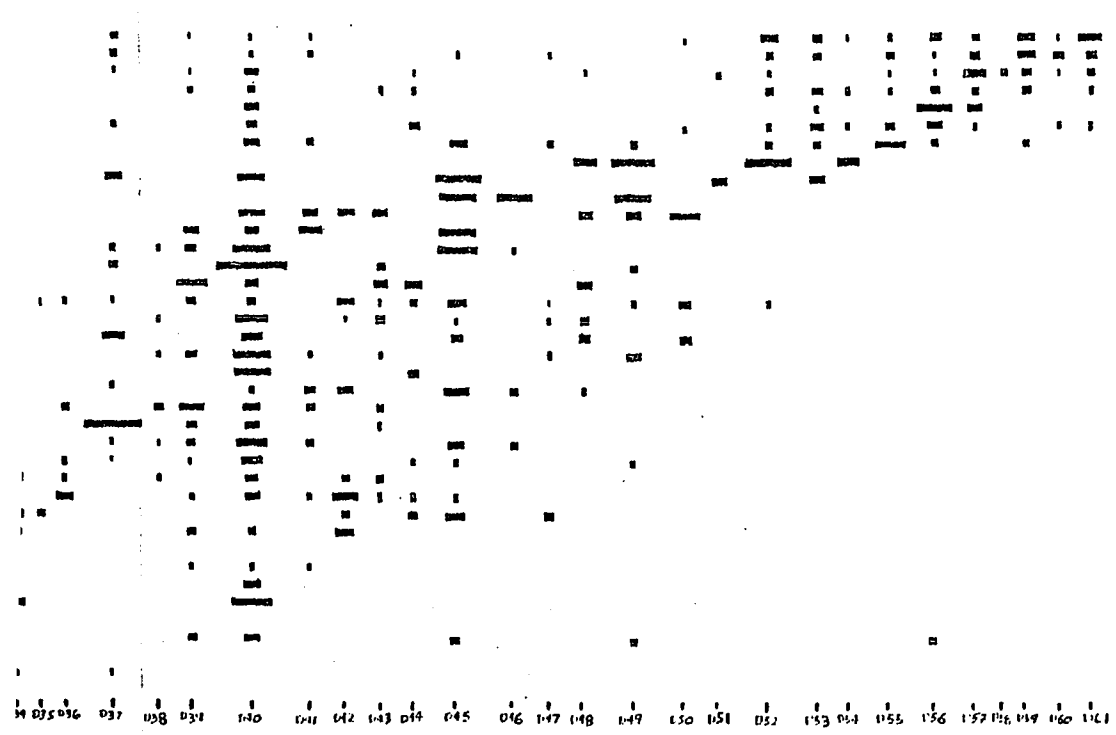


Fig. 119

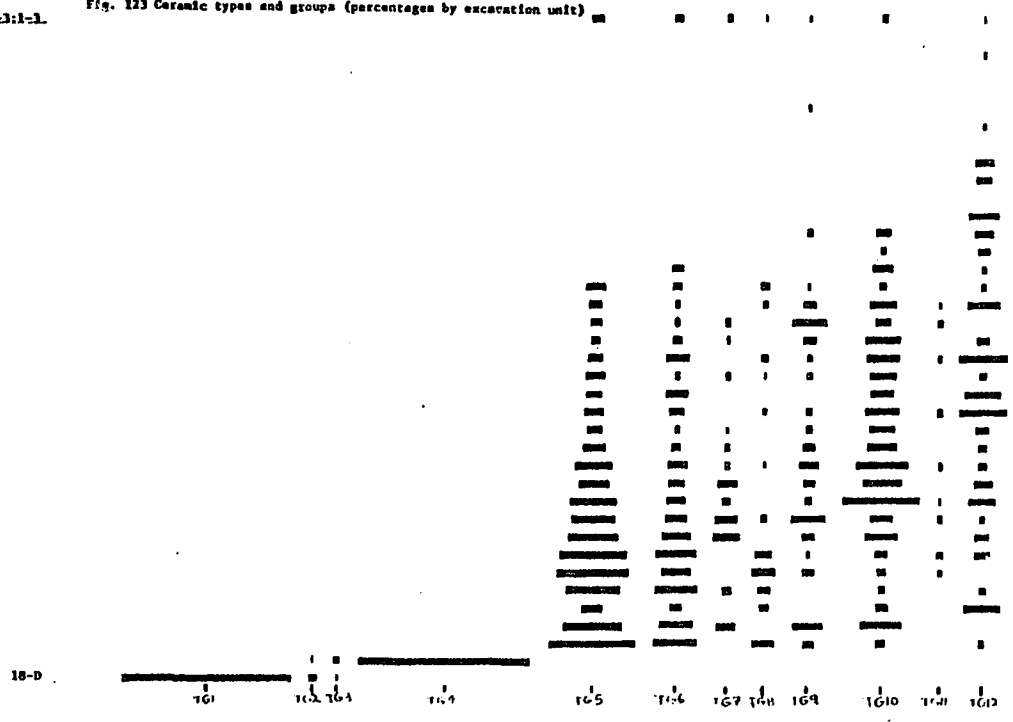
Fig. 120 Modes of decoration (raw counts by excavation unit)

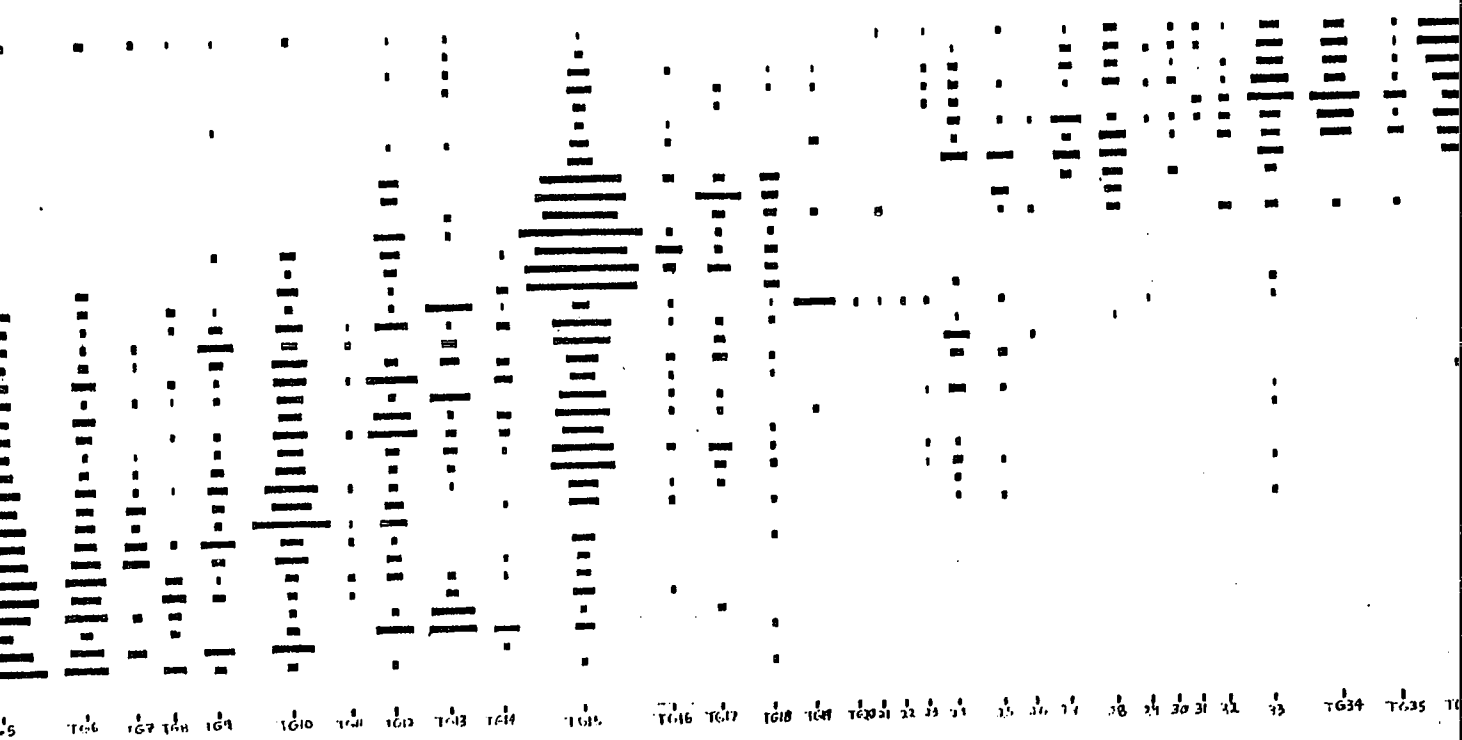
	19-D	35-CS	3-1 5-11	20-3 6-12	3-2 4	3-1 4	3-1 3	3-1 2	7-5 8	7-5 7	4-1 1-3	7-8 5-6	7-5 6	7-8 3-4	7-5 4-5	3-2 3	3-2 2	7-8 1-2	3-2 1	7-5 2-3	7-5 1	20-1 2-11	5-4 7	20-1 1	40-2 16-17	40-2 14-15	40-2 12-13	40-1 13	40-2 10-11	40-2 8-9	40-2 6-7	40-2 4-5	40-2 2-3	40-2 1	40-1 4-5	40-1 2-3	40-1 1	20-3 1-3		
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IX-4			1							3	2	3	3	5	4	3	2	4	1	5	3	10	6	3	1	3	2		1	1		3	5	1	3	1	3	16	10	
IX-3			1		1									2	2	1	2	4	1	1	1	10	6	1	1	2					3	1	1	3	2	2	7	7		
IX-2				3	1		2	3	1	1	2	1	3	3	3	1	1	2	1	1	1	2	4	1	2	2		1	1		2	2	2	1	4	7	5	5		
IX-1	5		2		1	2	2	5	4	5	8	1	6	5	6	1	1	5		3	1	5	5	1	2	5							2	1	2	1	1	2		
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Fig. 123 Ceramic types and groups (percentages by excavation unit)





APPENDIX 7 : TOMB STRUCTURES AND GRAVE LOTSFigure Captions

(All scales are 5 cm)

- Fig. 124 Tomb 1 of the El Bosque component at 20-CB: a - tomb layout (perhaps disturbed) with deposit of broken sherds; b, c - El Bosque Red on Buff vessels.
- Fig. 125 Tomb 2 of the El Bosque component of 20-CB: a, b - the corridor structure before (b) and after (a) excavation;
- Fig. 125A c - view along Tomb 2 with a broken olla at the end; d - fragment of the olla (El Bosque Red on Buff).
- Fig. 126 Tomb 1 of the El Bosque cemetery at 7.1-SL: b, e - El Bosque Red; c, g - El Bosque Red on Buff; d - Ticaban Tripod vessel; f - jade bead.
- Fig. 126A h - Tomb 1; i - jade "beak bird" pendant; j - volcanic stone object; k - penis or mushroom-shaped stone object; l - fragment of utilitarian metate; m - loaf-shaped mano.
- Fig. 127 Tomb 2 of the El Bosque cemetery at 7.1-SL; a, b - during and after excavation of corridor structure (which continued into the walls at each end).
- Fig. 127A c - broken jade object; d - ceramic bead; e, g - El Bosque Red on Buff; f, h - El Bosque Red.

- Fig. 127B i - El Bosque Red; j - small broken stone mortar; k - flared end stone pestle; l - loaf-shaped mano; m - trough-shaped utilitarian metate.
- Fig. 128 Tombs 3, 3a and 3b of the El Bosque cemetery at 7.1-SL; a - before excavation; b, c, d, e - vessels from Tomb 3 (to left) all El Bosque Red on Buff; f - fragment of unfinished metate.
- Fig. 129 a - Tomb 3a with grave goods; b - El Bosque Red; c, d - El Bosque Red on Buff.
- Fig. 130 a - Tombs 3, 3a and 3b after excavations; b, e - El Bosque Red (Tomb 3b); c, d - El Bosque Red on Buff (Tomb 3b).
- Fig. 131 a, b - Tomb 1 (7.2-SL), probably tripartite, after excavation (vessels in place).
- Fig. 131A c - fragment of flying panel metate; d, e - fragments of stirrup-shaped mullers (one with red pigment embedded); f, h, j - El Bosque Red on Buff; g, i - pestle and mortar (all from Tomb 1, 7.2-SL).
- Fig. 131B k, m, n, o, r - El Bosque Red on Buff; p - flared end pestle; q - loaf-shaped mano (all from Tomb 1, 7.2-SL).
- Fig. 132 Salvage tomb excavations at 21-MOPT: a - Pit 2, tomb structure (disordered, probably because the extremely soft soil did not support cobbles); b, c - El Bosque Red on Buff.
- Fig. 133 21- MOPT; a - Pit 1; b, c - vessels of the Africa Tripod group.

- Fig. 134 21-MOPT; a - Pit 3; b - El Bosque frog effigy vessel; c, d - El Bosque Red on Buff.
- Fig. 134A e, f, g, h - El Bosque Red on Buff; i - vessel combining El Bosque Red on Buff and Africa Tripod modes; j - vessel combining El Bosque Red on Buff and Roxana Shiny Maroon and Orange modes (all from Pit 3, 21-MOPT).
- Fig. 135 Sector 1, Transitional cemetery, La Montana (18-LM): a, b - before and during excavation (b shows plate and tripod combination frequently found in this cemetery).
- Fig. 135A c, d, h - Africa Tripod vessels; e - La Selva Sandy Applique; f - Guacimo Red on Buff; g - Roxana Shiny Maroon and Orange; i - large plate (El Bosque or Zoila Red).
- Fig. 136 Sector 2, Transitional cemetery, La Montana (18-LM): a - tomb structure (cobble and laja "street"); b - vessels found beneath lajas.
- Fig. 136A c - excavating the Sector 2 feature; d - cobble fill beneath surface feature.
- Fig. 136B e - vessels beneath cobble section of Sector 2 feature - note tomb fill intrusive into sandy subsoil; f - Roxana Shiny Maroon and Orange; g - La Selva Sandy Applique; h - El Bosque Red; i, j - Africa Tripods.
- Fig. 136C k, p - vessels in earlier burial disturbed by posterior construction of Sector 2 "street" feature; l - Roxana Shiny

Maroon and Orange; m, o - Africa tripods; n - large plate (El Bosque or Zoila Red).

Fig. 137 1977 excavations in the Transitional cemetery, La Montana (18-LM); a - opening excavation unit 2 (5 x 5 m); b - disturbed tomb lines (indicated by tapes) with a common perpendicular head line.

Fig. 137A c, d - Section of the cemetery (13 x 22 m) exposed before excavation of the tombs.

Fig. 137B e - plate and tripod vessel in excavation unit 4; f - excavation of a tomb containing a necklace of jade and soft greenstone (barely visible at 4 o'clock from arrow).

Fig. 137C g - view of well-made tomb lines (stone feature at left is a modern drain); h - view of 1977 excavation after removing grave goods.

Fig. 142 Artifacts from excavation unit 2 (18-LM): a, b, c, d, f, g, h - La Selva Sandy Applique; e - Zoila Red incised; i - Roxana Shiny Maroon and Orange.

Fig. 142A Artifacts from excavation unit 2 (18-LM): j, k - La Selva Sandy Applique; l - El Bosque or Zoila Red plate; m - Roxana Shiny Maroon and Orange; n, o - Africa tripods.

Fig. 142B Artifacts from excavation unit 2 (18-LM): p - Ticaban tripod; q, r, s - Africa tripods; t - La Selva Sandy Applique.

- Fig. 143 Artifacts from excavation unit 3 (18-LM): a - Roxana Shiny Maroon and Orange; b - Africa Tripod; c, d - Zoila Red; e - La Selva Sandy Applique; f - carbonized maize cob fragment found inside Africa Tripod.
- Fig. 144 Artifacts from excavation unit 4 (18-LM): a, b, c, f, h - La Selva Sandy Applique; d - Zoila Red incised; e, i - Roxana Shiny Maroon and Orange; g - Lajas-Yacuare.
- Fig. 144A Artifacts from excavation unit 4 (18-LM): j, p, q - Africa Tripods; k, l, n, r - La Selva Sandy Applique; o - Roxana Shiny Maroon and Orange.
- Fig. 145 Artifacts from excavation unit 5 (18-LM): a, b, d, e, g - Africa Tripods; c, l - Zoila Red incised; f, h, i, k - La Selva Sandy Applique; j - Roxana Shiny Maroon and Orange.
- Fig. 146 Artifacts associated with special burial in excavation units 5 and 7: a, b, c - La Selva Sandy Applique; e - Zoila Red incised; f, d, g, h, i, j, k - Santa Clara Figurines and ocarinas.
- Fig. 146A Artifacts associated with special burial in excavation units 5 and 7: l, m - Santa Clara ceramic effigy heads; n, o, p, q, r - polished axes or celts of different sizes.
- Fig. 146B Artifacts associated with special burial in excavation units 5 and 7: s - small double-bitted axe, purposefully broken; t - necklace of soft greenstone beads with jade (and one resin) pendants.

- Fig. 147 Artifacts from excavation units 6 and 7 (18-LM): a, b - Roxana Shiny Maroon and Orange; c - circular raised rim metate; d - Guacimo Red on Buff; e, f, g, h - Africa Tripods.
- Fig. 148 Artifacts from excavation units 7 and 8 (18-LM): a, i - Africa Tripods; b, c - decorated stirrup mullers; d, g, h, j - La Selva Sandy Applique; e, f - Zoila Red; k - hammerstone.
- Fig. 149 Artifacts from excavation units 10 and 11 (18-LM): a, b, f, i - Roxana Shiny Maroon and Orange; c, d, g, h, l - La Selva Sandy Applique; e, k - Zoila Red incised; j - Africa Tripods.
- Fig. 150--- Stone Cist tomb with auxiliary tomb lines (4-IT); a - after excavation; b - chipped quartz celt along one of the lines.
- Fig. 150A c - vessel along one of the stone lines; d - chipped celt; e - late La Selva Brown or early Tayutic Brown Incised; f - Tuis Negative.
- Fig. 151 Tomb group 2-4 (4-IT): a - during excavation (stone cist to left was looted); b - after excavation; two rectangular tombs to right are probably earlier than the others.
- Fig. 152 Artifacts from Tomb 2a: a - late variety of La Selva Sandy Applique; b - rimless metate (armadillo effigy).
- Fig. 153 a - Tomb 3b; b - late variety of La Selva Sandy Applique.
- Fig. 154 a - Tomb 3a; b - late variety of La Selva Sandy Applique; c - Tayutic Brown Incised/Engraved.

- Fig. 155 a - Tomb 3; b, d - La Cabana Fine Slipped; c - Cartago Red Line.
- Fig. 156 a - stone cist tomb 6a (5-ZT); b - polished celt; c - La Cabana Coarse; d - Bere Red.
- Fig. 157 a - stone cist tomb 6b (5-ZT); b - Mercedes White Line; c - Tayutic Brown Incised/Engraved.
- Fig. 158 a - stone cist tomb 7 (5-ZT); b, c - La Cabana Fine Slipped; d - polished celt; e - La Cabana Coarse; f - Bere Red.
- Fig. 159 a, b - stone cist tomb 8 (5-ZT).
- Fig. 159A c, d, e - La Cabana Fine Slipped.
- Fig. 160 a - stone cist tomb 9 (5-ZT); b, c - La Cabana Fine Slipped; d - Tayutic Brown Incised/Engraved.
- Fig. 161 Vessels from other stone cist tombs (5-ZT): a, b (Tomb 2) - Bere Red, stone mortar; c, d, e, f (Tomb 4) - Irazu Yellow Line, Tayutic Brown Incised/Engraved, La Cabana Fine Slipped.
- Fig. 162 Vessels from other stone cist tombs (5-ZT): a - Tayutic Brown Incised/Engraved; b, e, f - Bere Red; c - La Cabana Fine Slipped; d - La Cabana Coarse.
- Fig. 163 Stone cist tomb 10 (5-ZT): a - with laja cover; b - excavated (contained no grave goods).
- Fig. 164 Stone cist tomb 11 (5-ZT): a - with laja cover; b - excavated; c - Tayutic Brown Incised/Engraved.

- Fig. 165 a - Tomb 12; not stone cist (5-ZT); b - polished celt; c - Reventazon Cream Washed; d, e - La Cabana Fine Slipped.
- Fig. 166 a - stone cist tomb 13 (5-ZT); b - La Cabana Fine Slipped.
- Fig. 167 a - stone cist tomb 14 (5-ZT); b, c - Tayutic Brown Incised/Engraved.
- Fig. 168 a - stone cist tomb 16; without grave goods (5-ZT); b - looted tomb (cleaned; 3-MT).
- Fig. 169 a - stone cist tomb 17 (5-ZT); b - Reventazon Cream Washed.
- Fig. 170 Complex of three stone cist tombs (20, 21, 22) at 5-ZT: a - before excavation (tomb 21 has lajas); b - after excavation.
- Fig. 171 a - tomb 21; b - La Cabana Fine Slipped; c - Tayutic Brown Incised/Engraved.
- Fig. 171A Tomb 21 artifacts: d, h - Tayutic Brown Incised/Engraved; f - La Cabana Coarse; e - chipped axe; g, i - small polished celts.
- Fig. 172 a - tomb 20, note petroglyph; b - Reventazon Cream Washed; c - La Cabana Fine Slipped.
- Fig. 173 a - first level of tomb 22; b - Irazu Yellow Line; c - La Cabana Coarse.
- Fig. 174 a - second level of tomb 22; b - Bere Red; c - La Cabana Fine Slipped.

Fig. 175 Stone cist tomb 1 at 8-NJ: a - before excavation; b - after excavation.

Fig: 175A Artifacts from Tomb 1 (8-NJ): c - La Cabana Fine Slipped; d, e - Tayutic Brown Incised/Engraved; f - flaked chert projectile point.

Fig. 176 Stone cist tombs at 14-VF.

Fig. 176A Stone cist tomb at 14-VF with unclassified ceramics.

Fig. 177 Tomb 1 from the stone cist cemetery (20.1-CB) at La Cabana: a - partially looted (tomb was beneath a large stump); b - after excavation.

Fig. 177A Artifacts from Tomb 1 (20.1-CB): c, e, f - Reventazon Cream Washed; d - La Cabana Fine Slipped.

Fig. 178 a - tombs 2a and 2b (20.1-CB); b, c, d - La Cabana Fine Slipped.

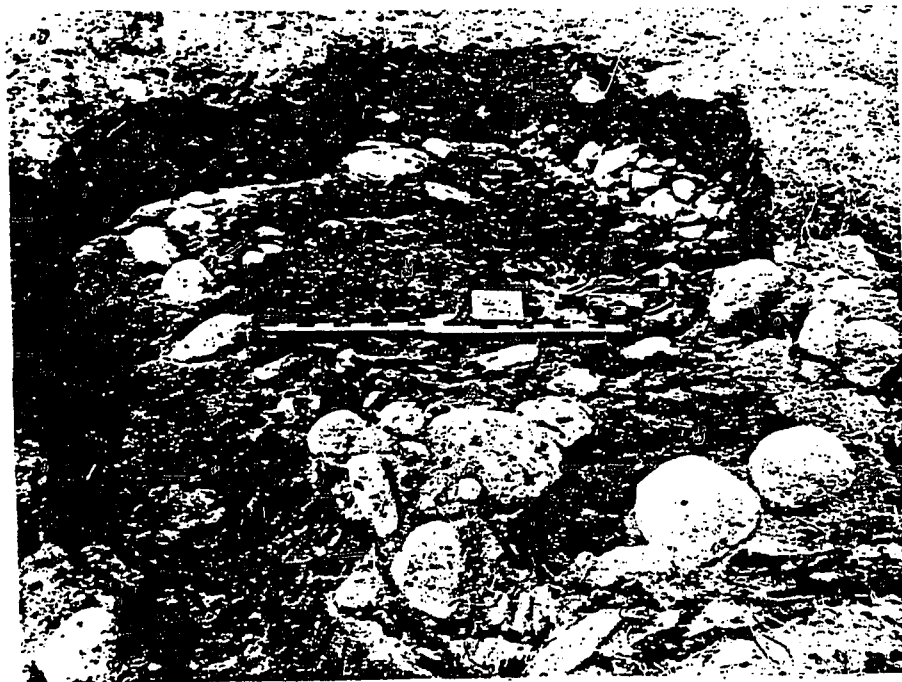
Fig. 179 a - tomb 3 (20.1-CB); b, c - La Cabana Fine Slipped.

Fig. 180 Tomb 4 (20,1-CB); contained no grave goods.

Fig. 181 a - tiny stone cist tomb (3) along enclosure surrounding empty plaza at La Cabana; b, c - La Cabana Fine Slipped; d - base of large jar; e - Tayutic Brown Incised/Engraved ocarina.

Fig. 182 a - tombs 5 and 6 along enclosure (20-CB); b, c - Cartago Red Line; d, e - La Cabana Fine Slipped.

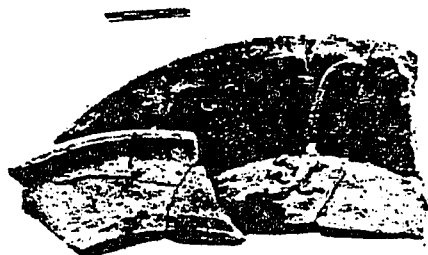
Fig. 183 a - tomb 9 along western arm of enclosure; b, c - La Cabana
Fine Slipped.



a



b



c

Fig. 124



a



b

Fig. 125



c



d

Fig. 125A



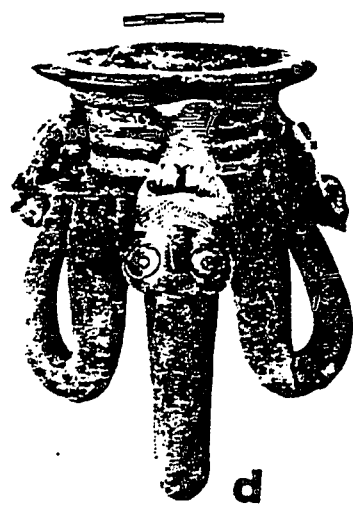
a



b



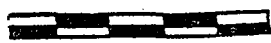
c



d



e



f



g

Fig. 126

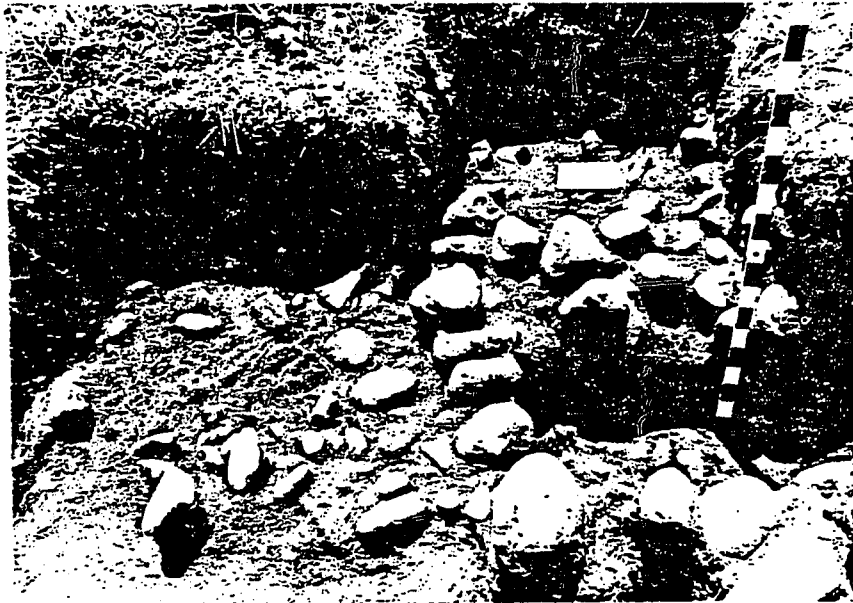
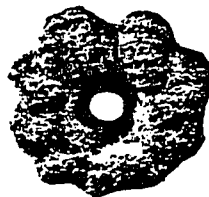
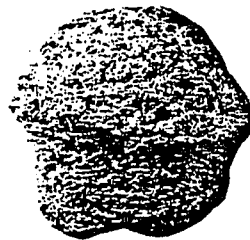
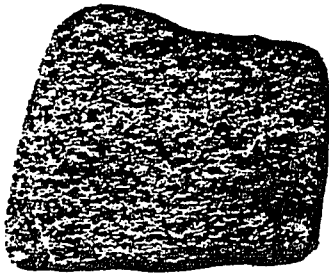
**h****i****j****k****l****m**

Fig. 126A



a



b

Fig. 127



c



d



e



f



g



h

Fig. 127A

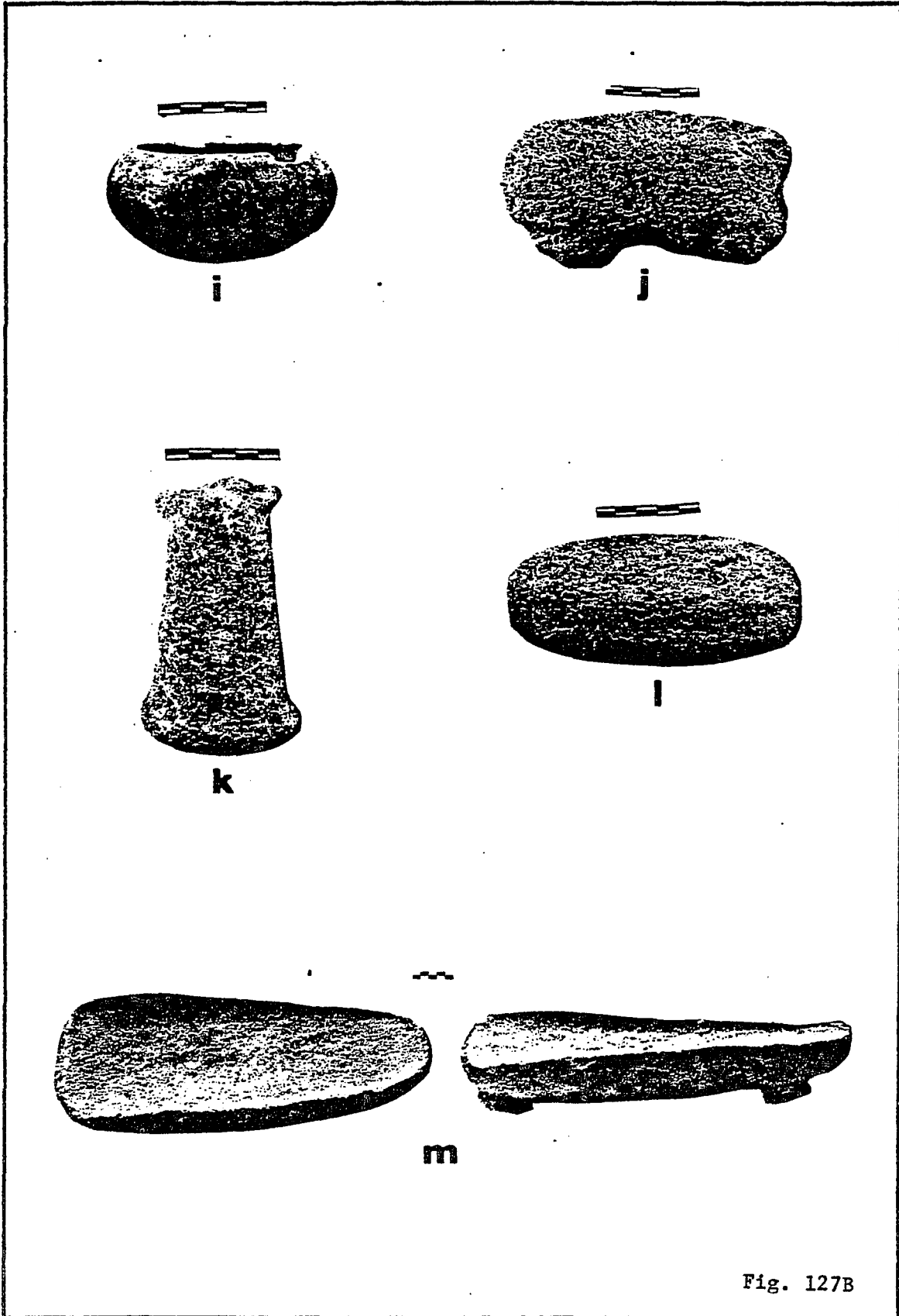


Fig. 127B



a



b



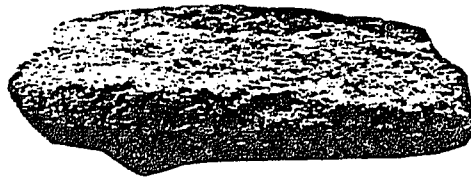
c



d



e



f

Fig. 128



a



b

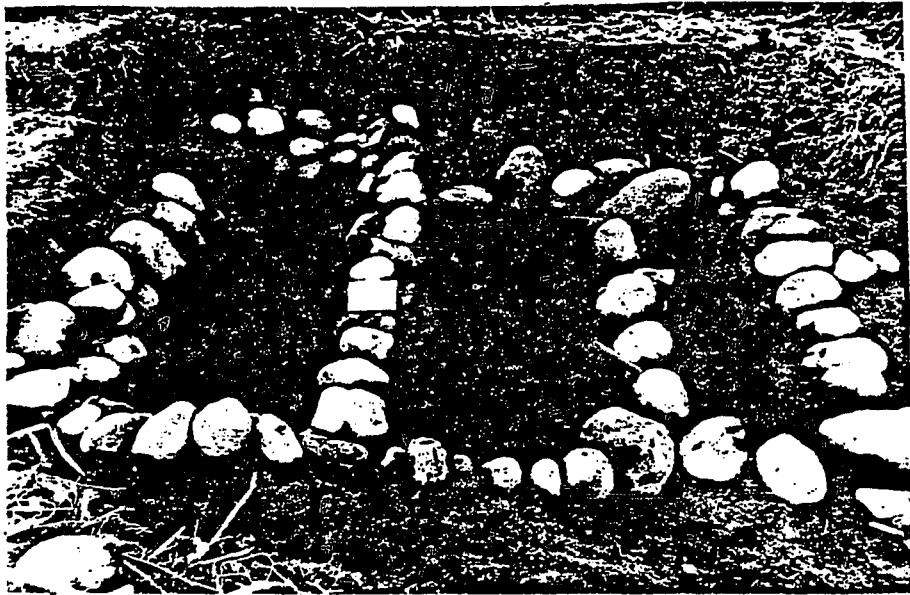


c



d

Fig. 129



a



b



c



d

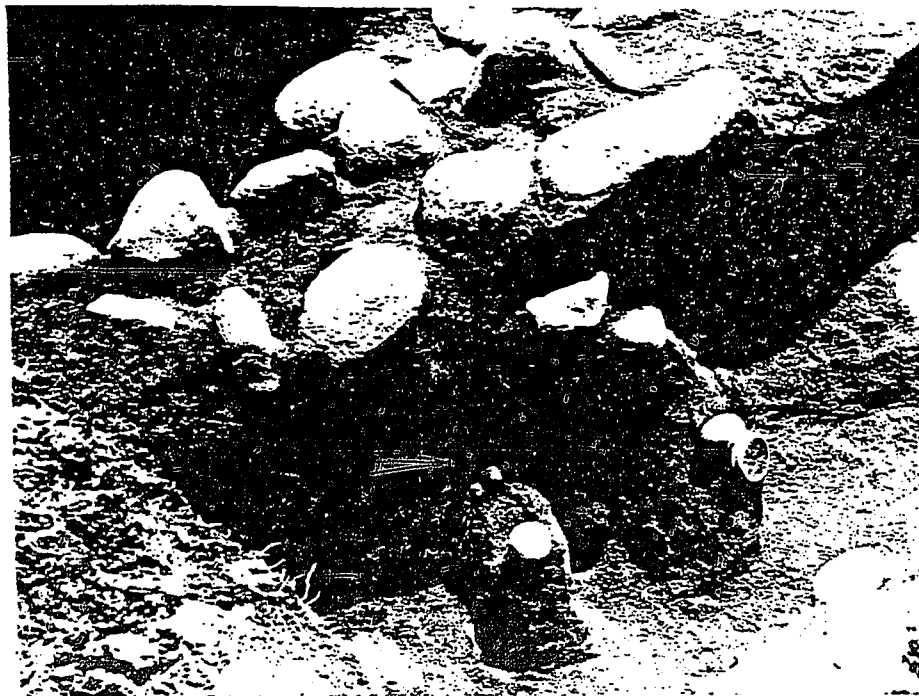


e

Fig. 130



a



b

Fig. 131

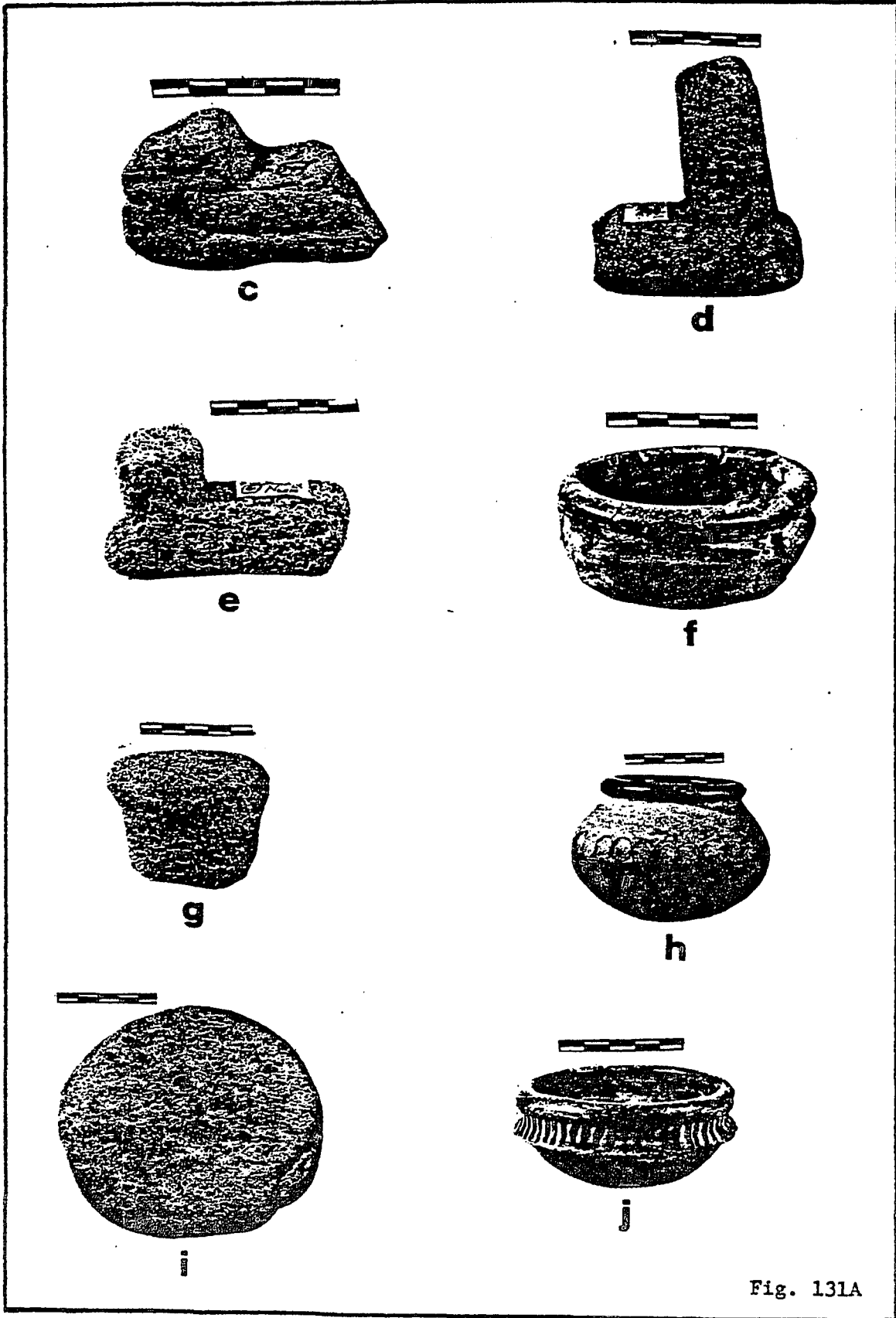
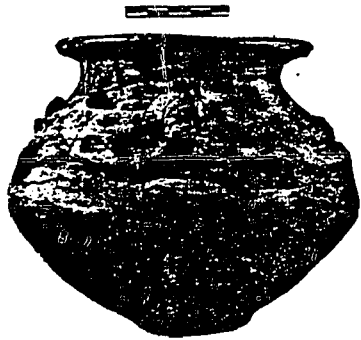
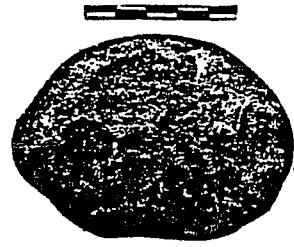


Fig. 131A



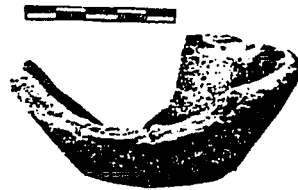
k



l



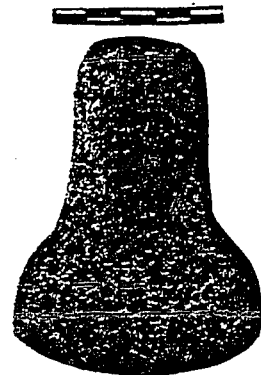
m



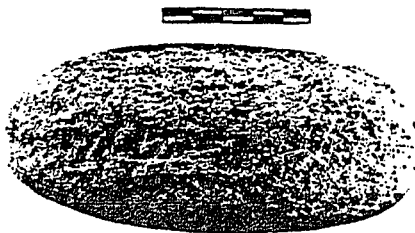
n



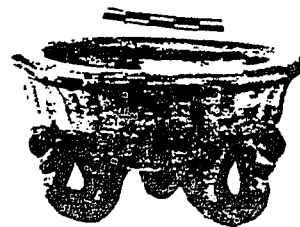
o



p



q

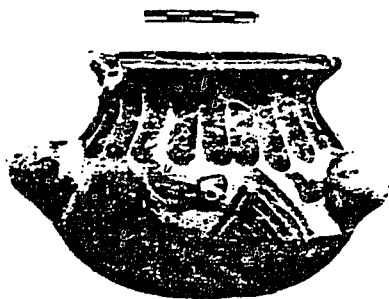


r

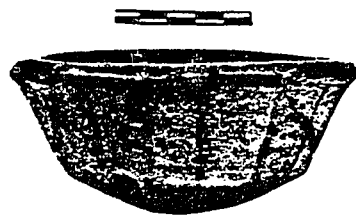
Fig. 131B



a



b



c

Fig. 132



a



b

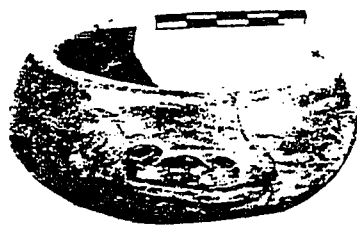


c

Fig. 133



a



b

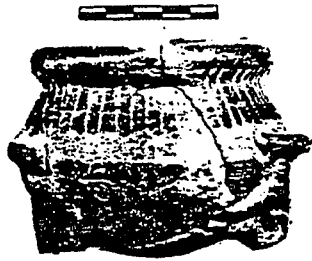


c

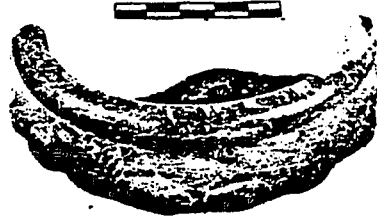


d

Fig. 134



e



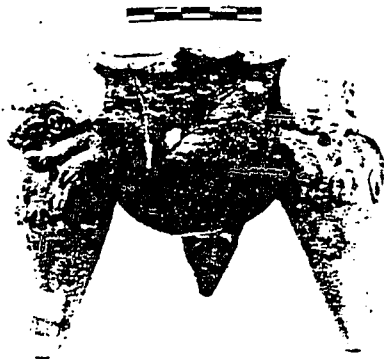
f



g



h



i



j

Fig. 134A



Fig. 135

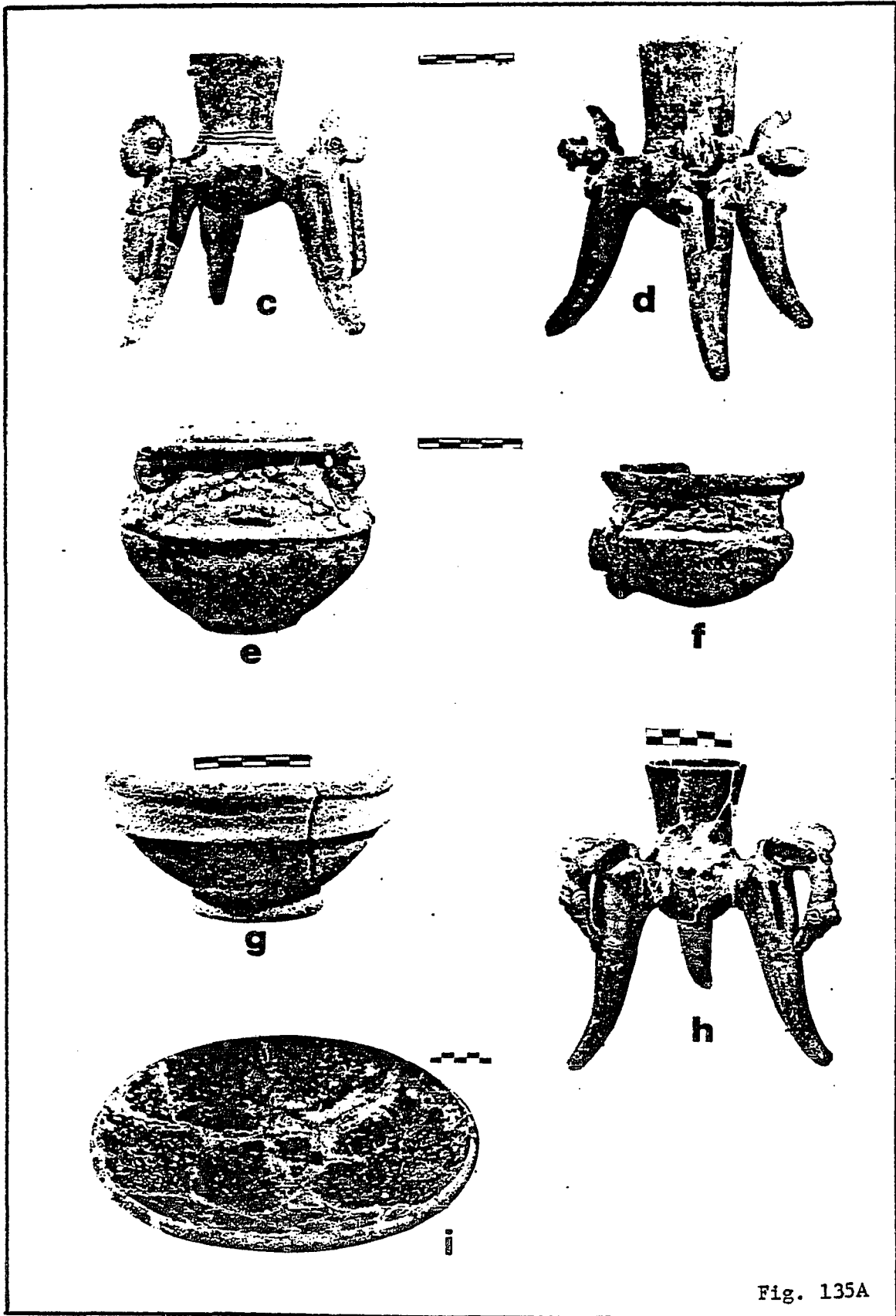


Fig. 135A

a



b

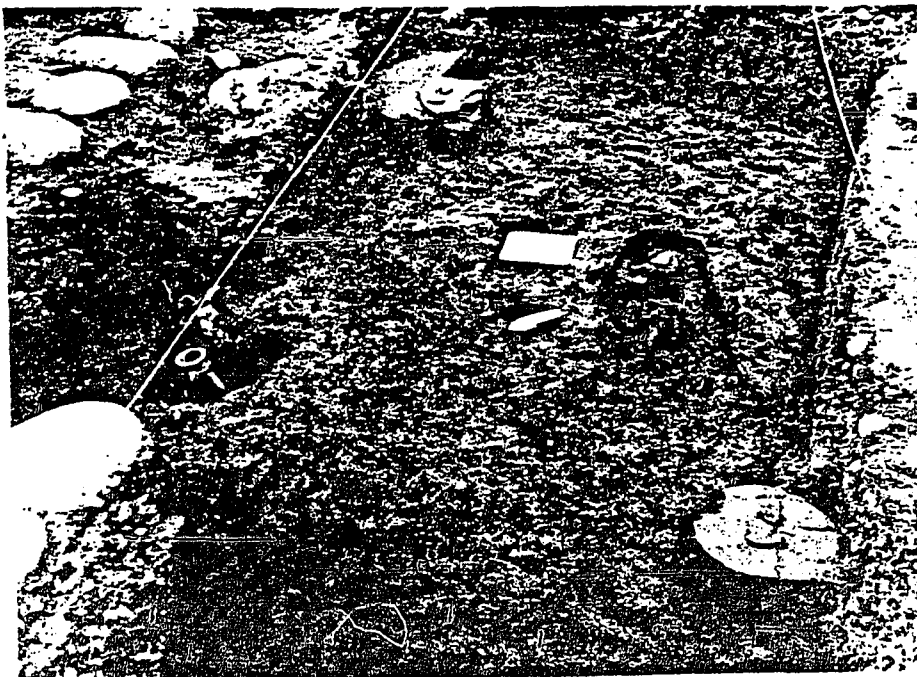


Fig. 136

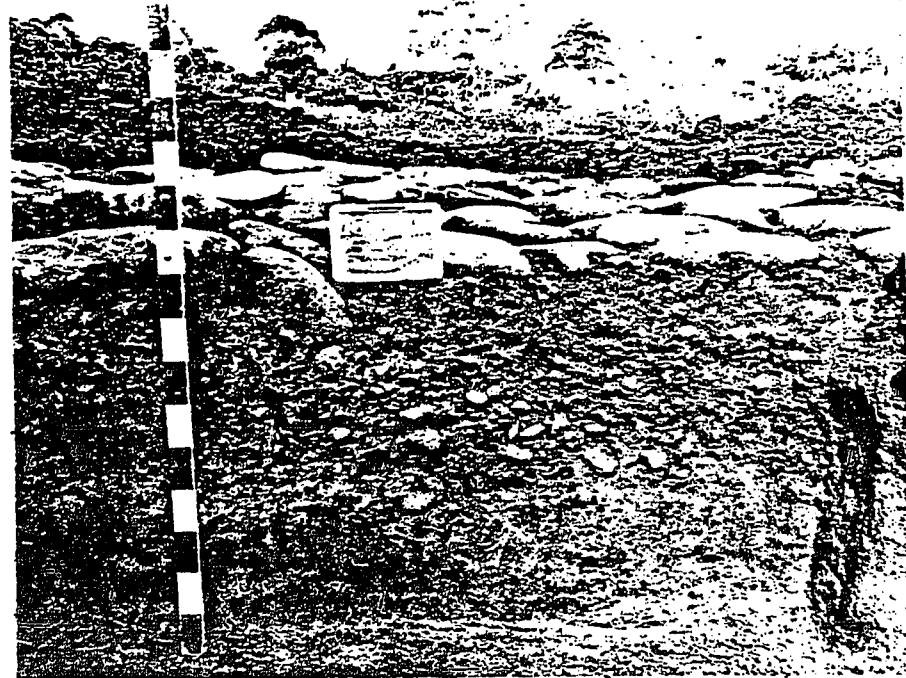


Fig. 136A

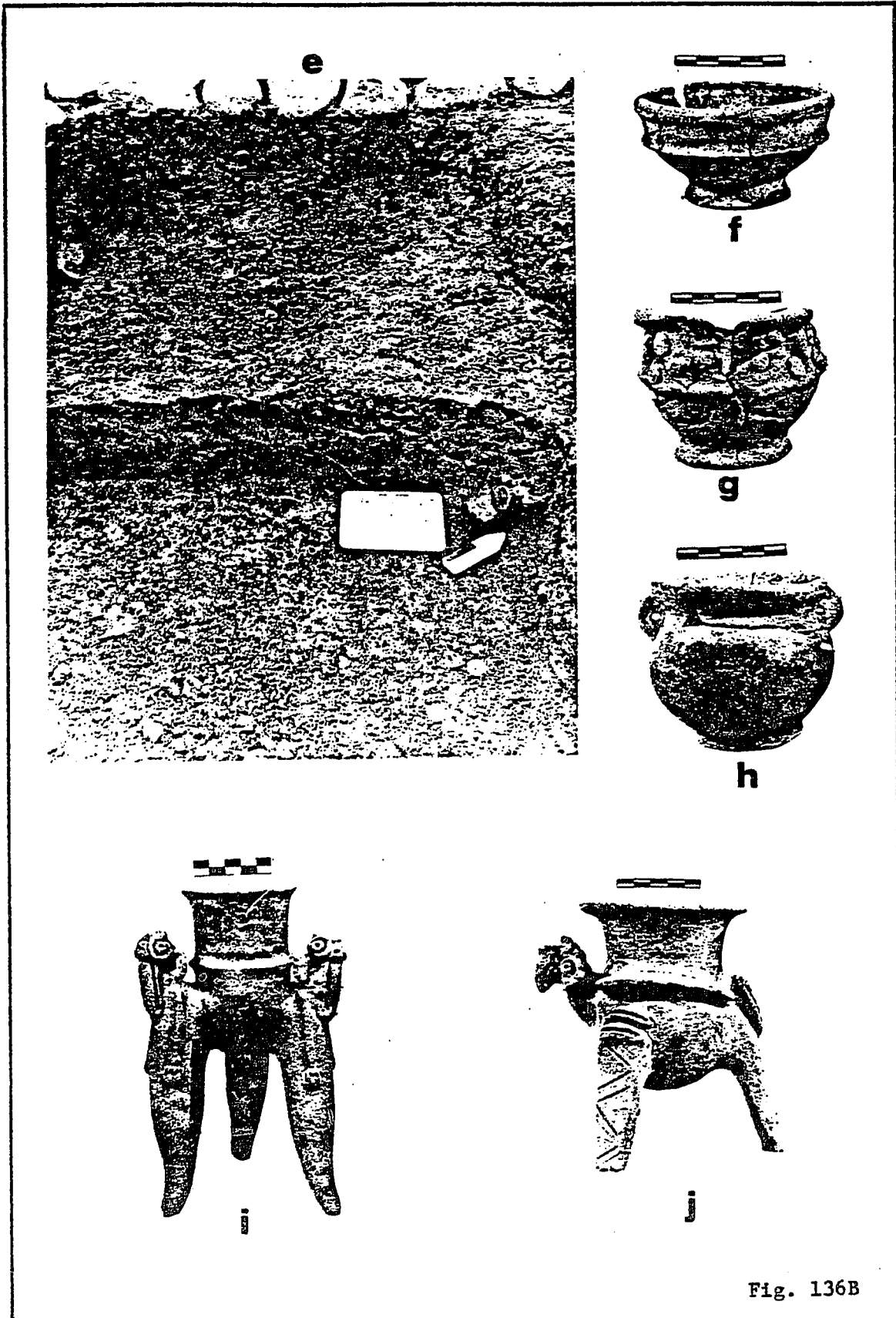
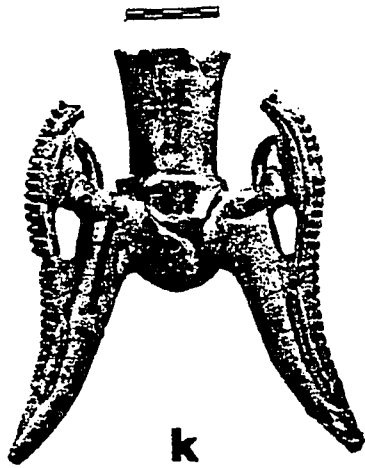
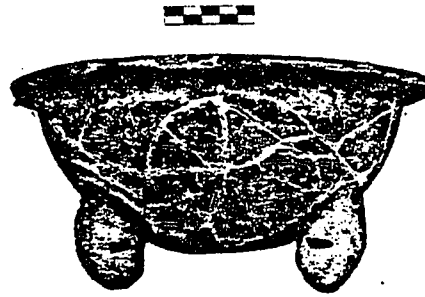


Fig. 136B



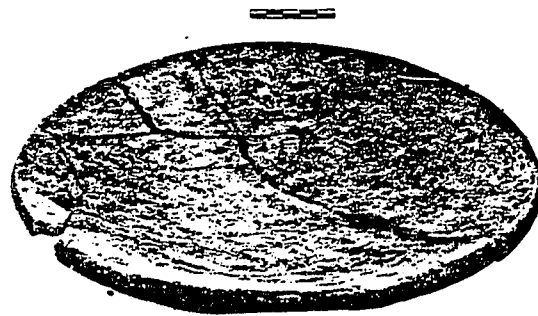
k



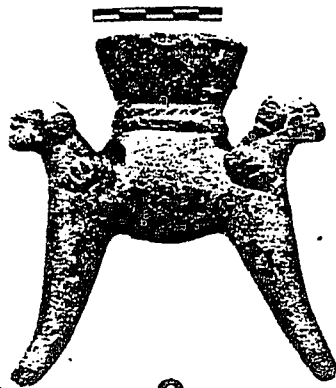
l



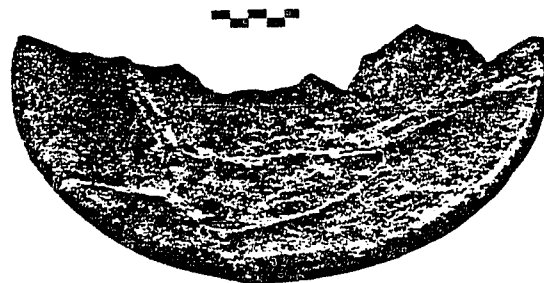
m



n



o

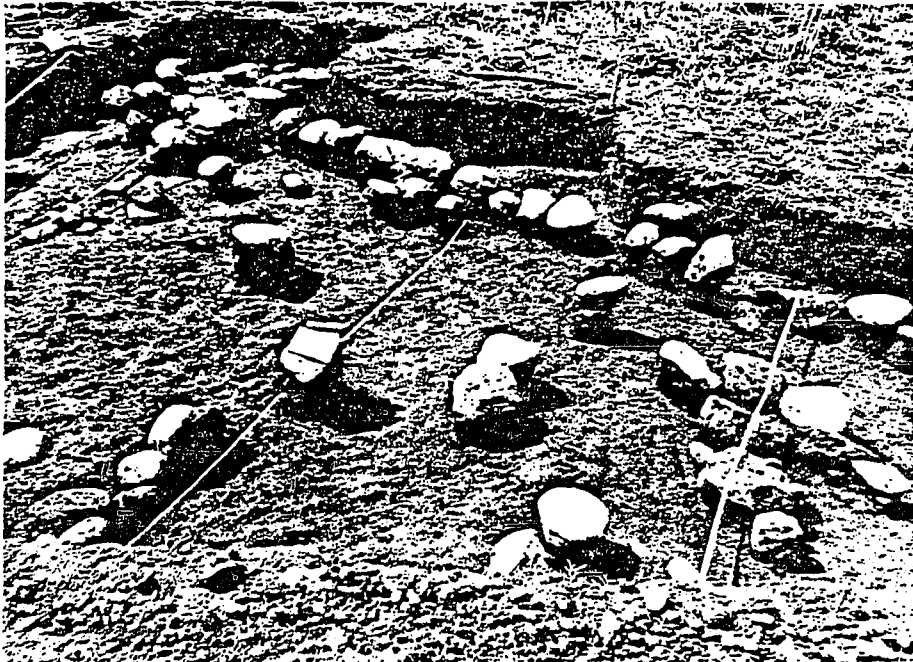


p

Fig. 136C



a

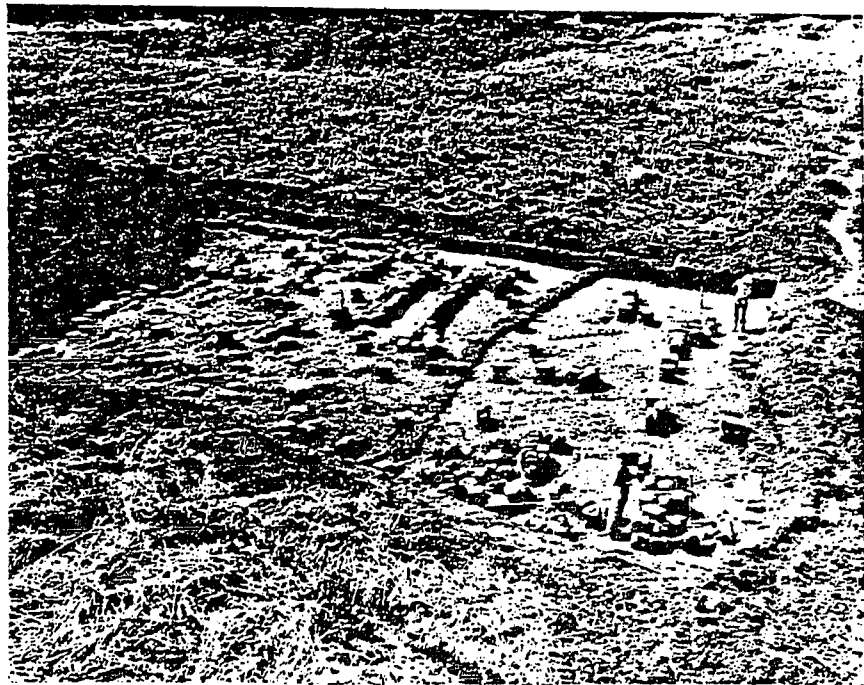


b

Fig. 137



c



d

Fig. 137A

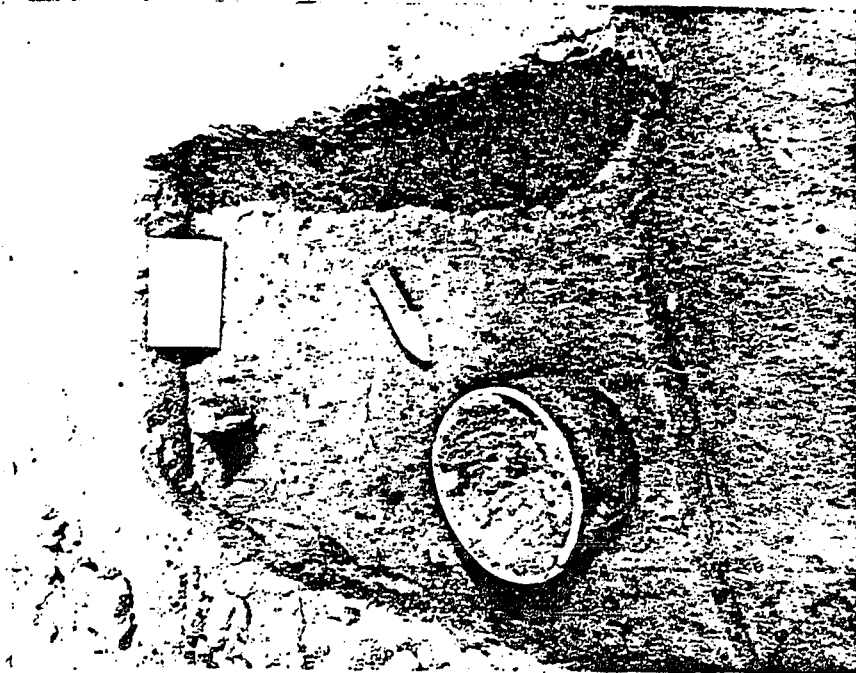
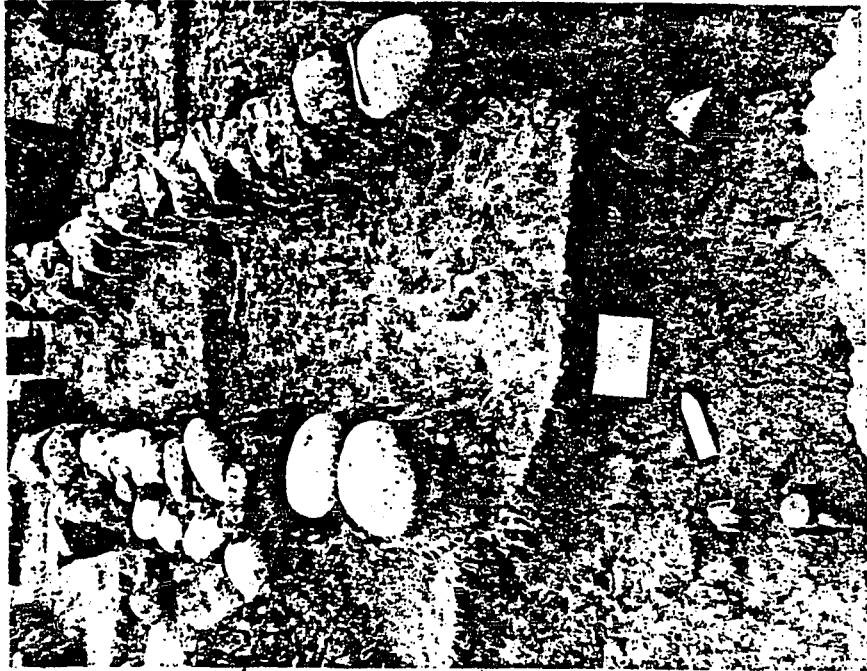
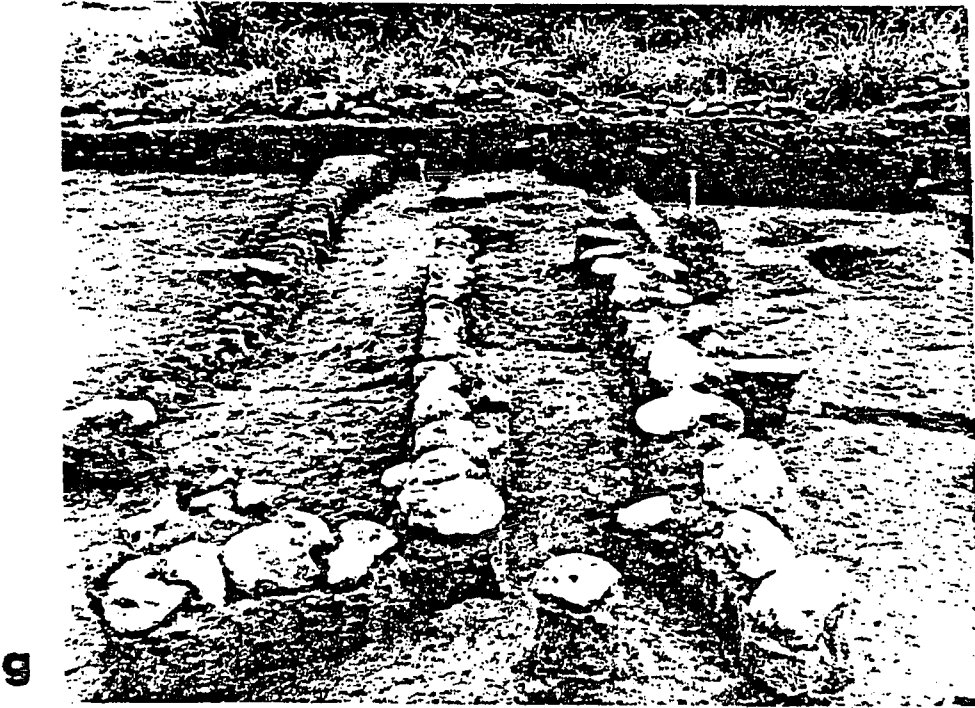


Fig. 137B



g



h

Fig. 137C

Transitional Cemetery La Montaña (18-LM)

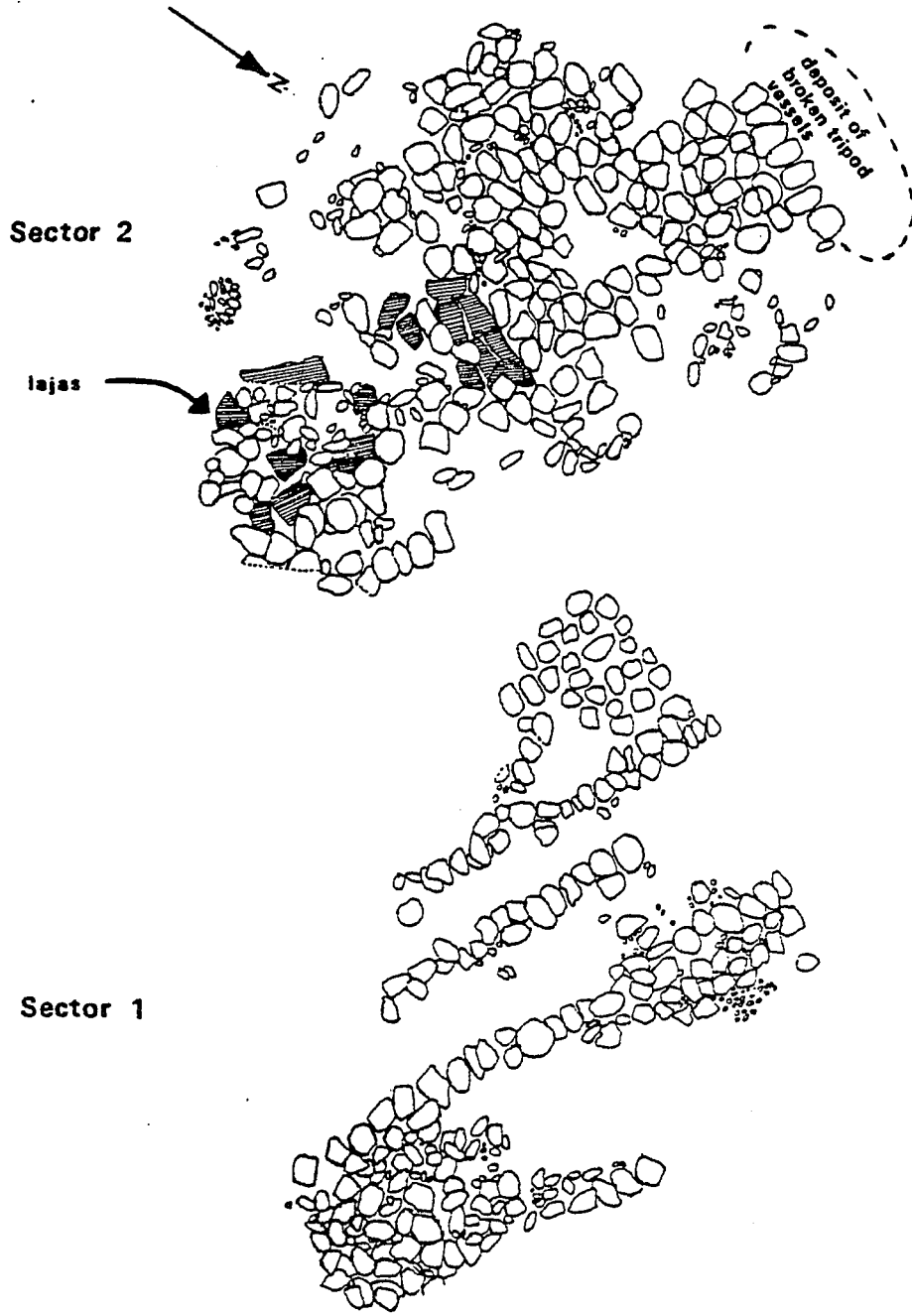
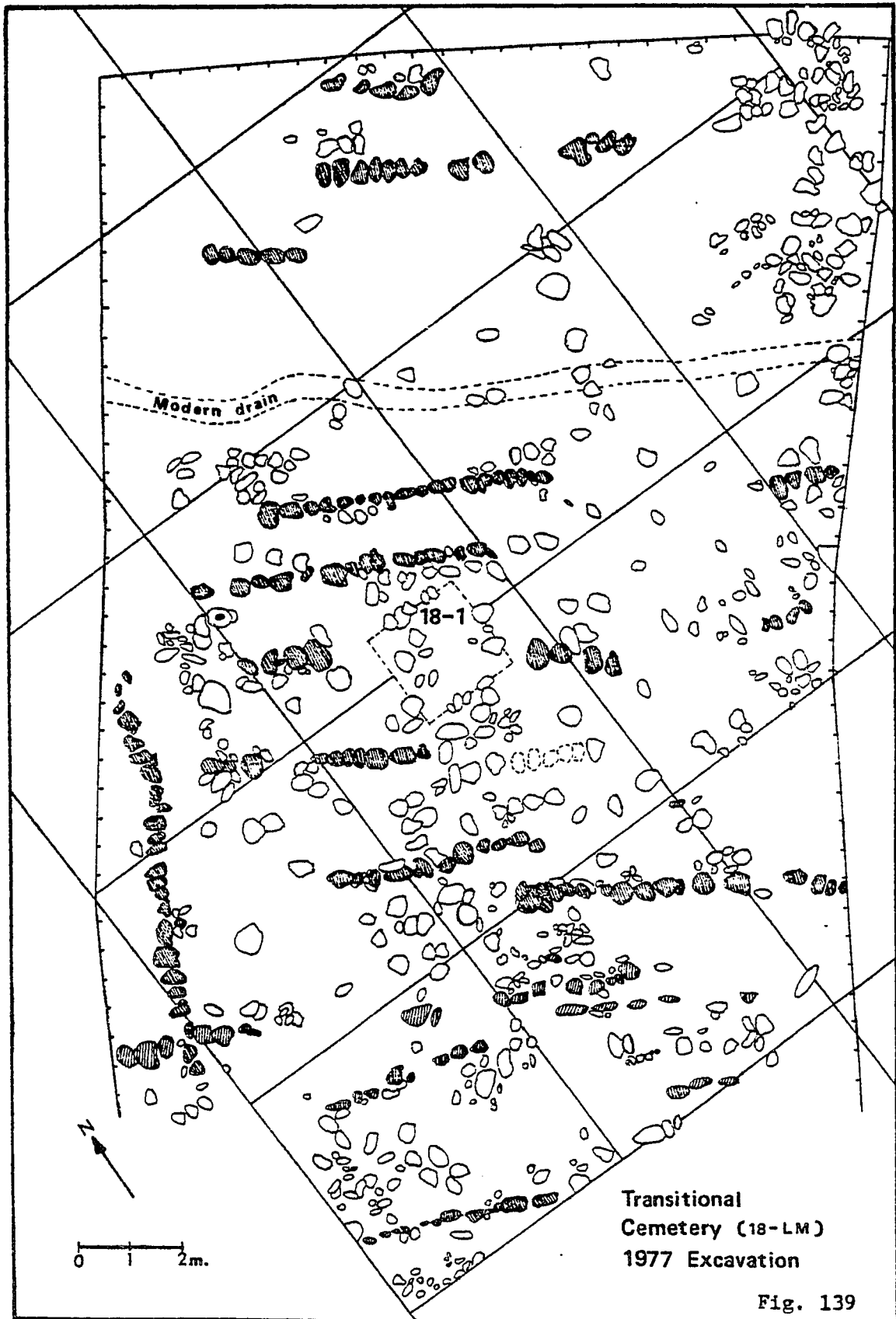


Fig. 138



Transitional
Cemetery (18-LM)
1977 Excavation

Fig. 139

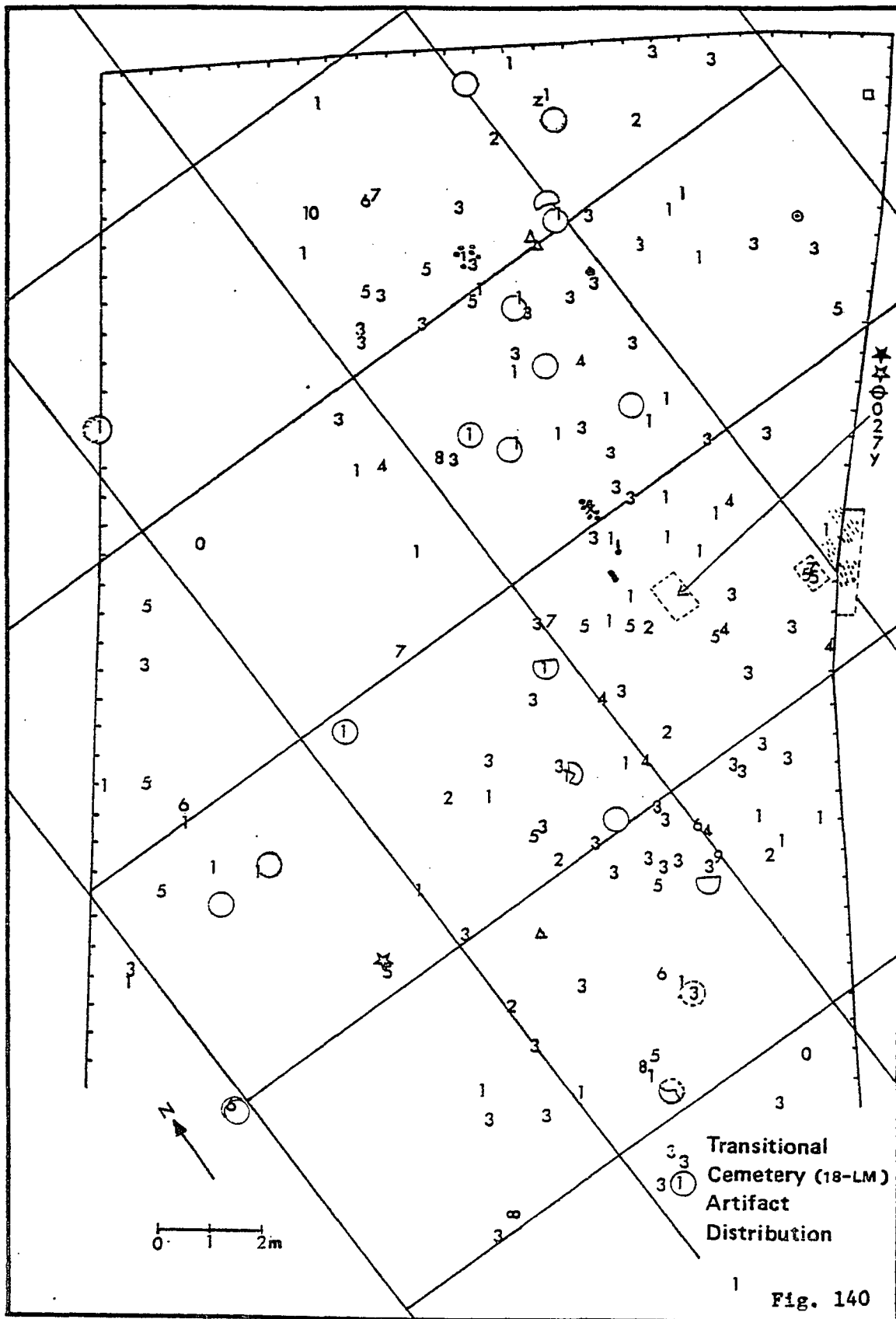









Fig. 140

KEY TO FIG. 139

	Excavation units
	Limits of excavation
	Modern drain
	Deeper cobbles
	Lines of cobbles
	Cobbles on edge
	Pit 18-1 (1976)

KEY TO FIG. 140













1	Africa tripod		Mano
2	Zoila Red incised vessel		Pestle
3	Olla (mostly La Selva Sandy Appliqué)		Polished axe
4	Tripod olla		Double bitted axe
5	Dish with annular base	Z	Handled axe
6	Deep bowl with egg-shaped supports		Hammerstone
7	Tripod dish		Flint knife (Layer D)
8	Raised rim metate	'	Jade pendant
9	Ticaban tripod	::	Soft greenstone beads
10	Cup	∞	Soft greenstone pendants
0	Ocarina		Large sherd concentration
	Stirrup muller		Ceramic effigy head
	Large plate	Y	Ceramic zoomorphic figurine
			Excavation units
			Limits of excavation

Fig. 141

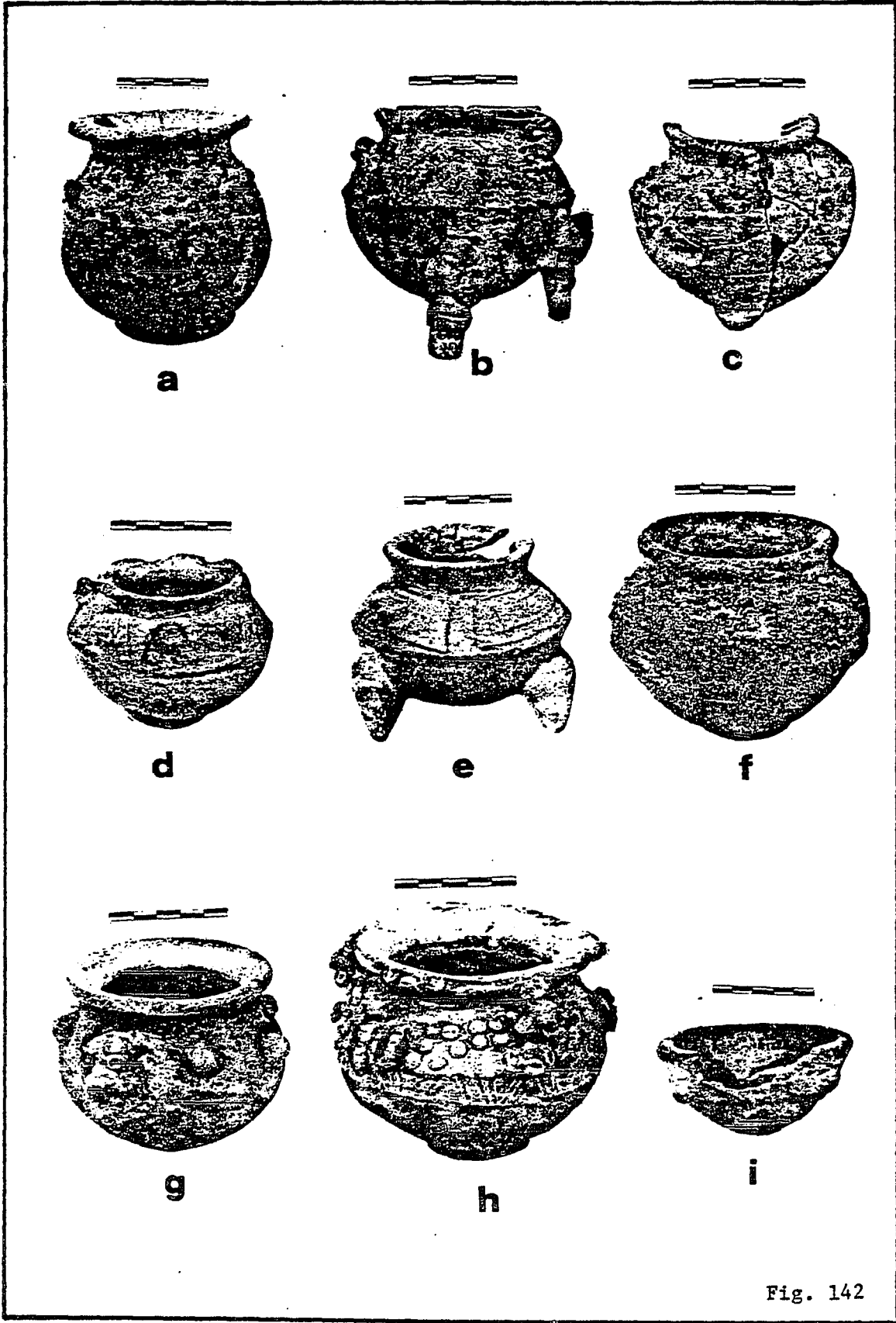
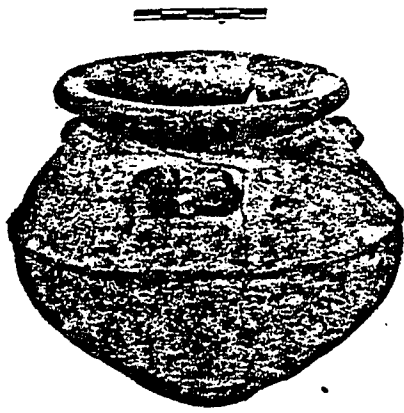
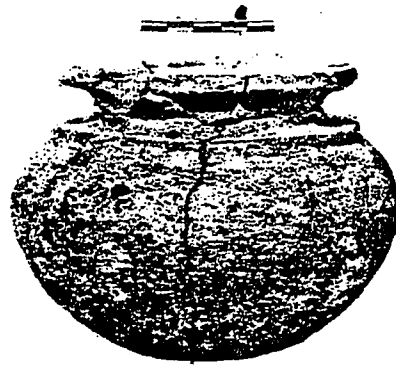


Fig. 142



j



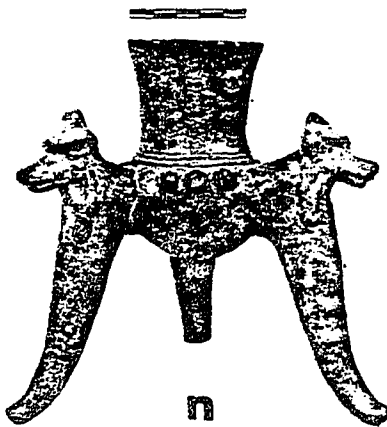
k



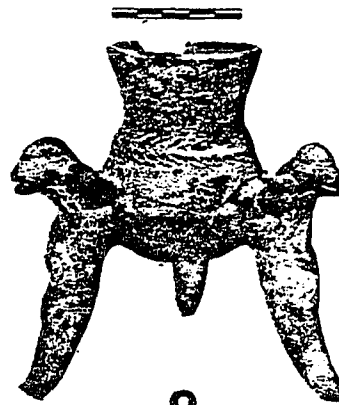
l



m



n



o

Fig. 142A

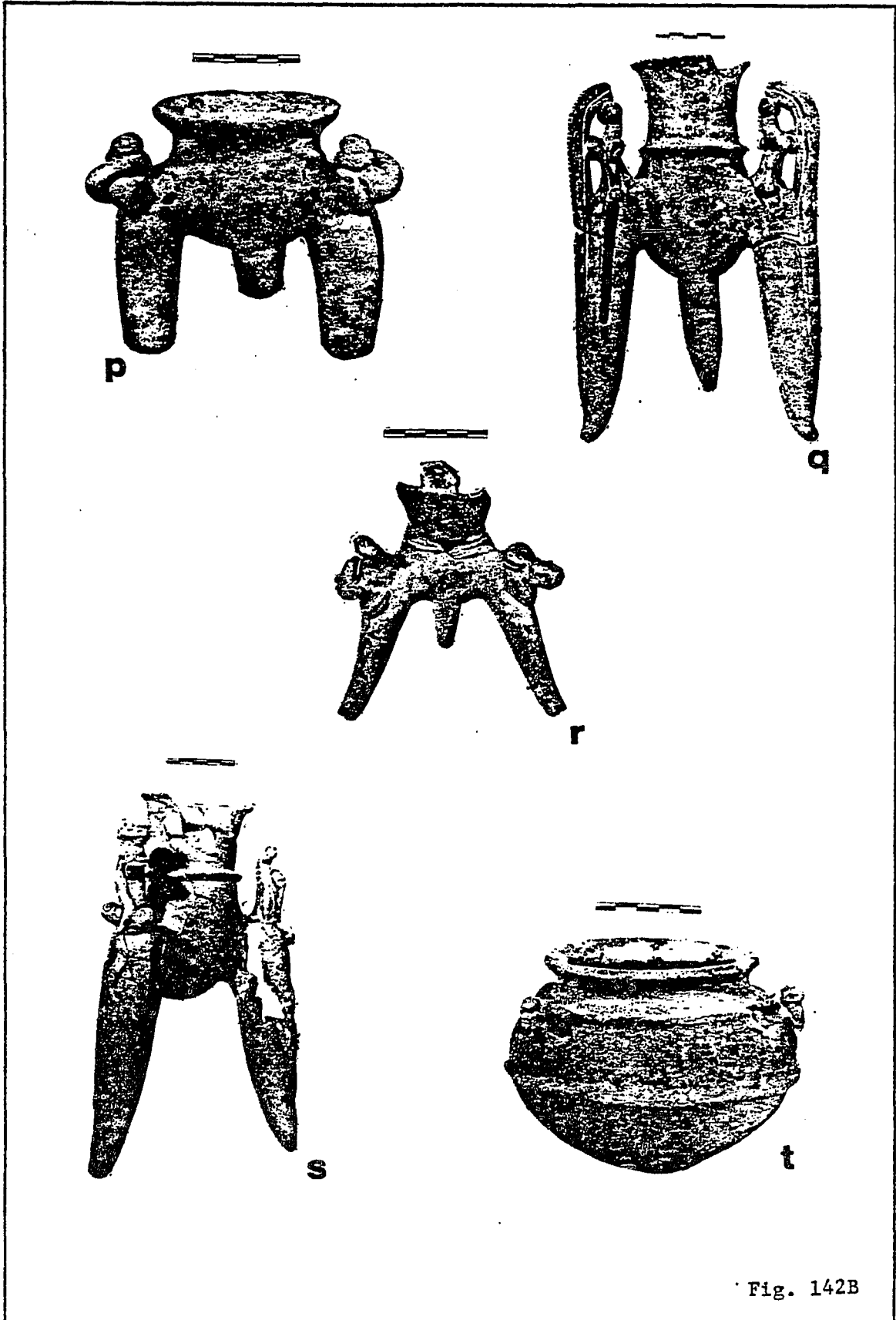


Fig. 142B

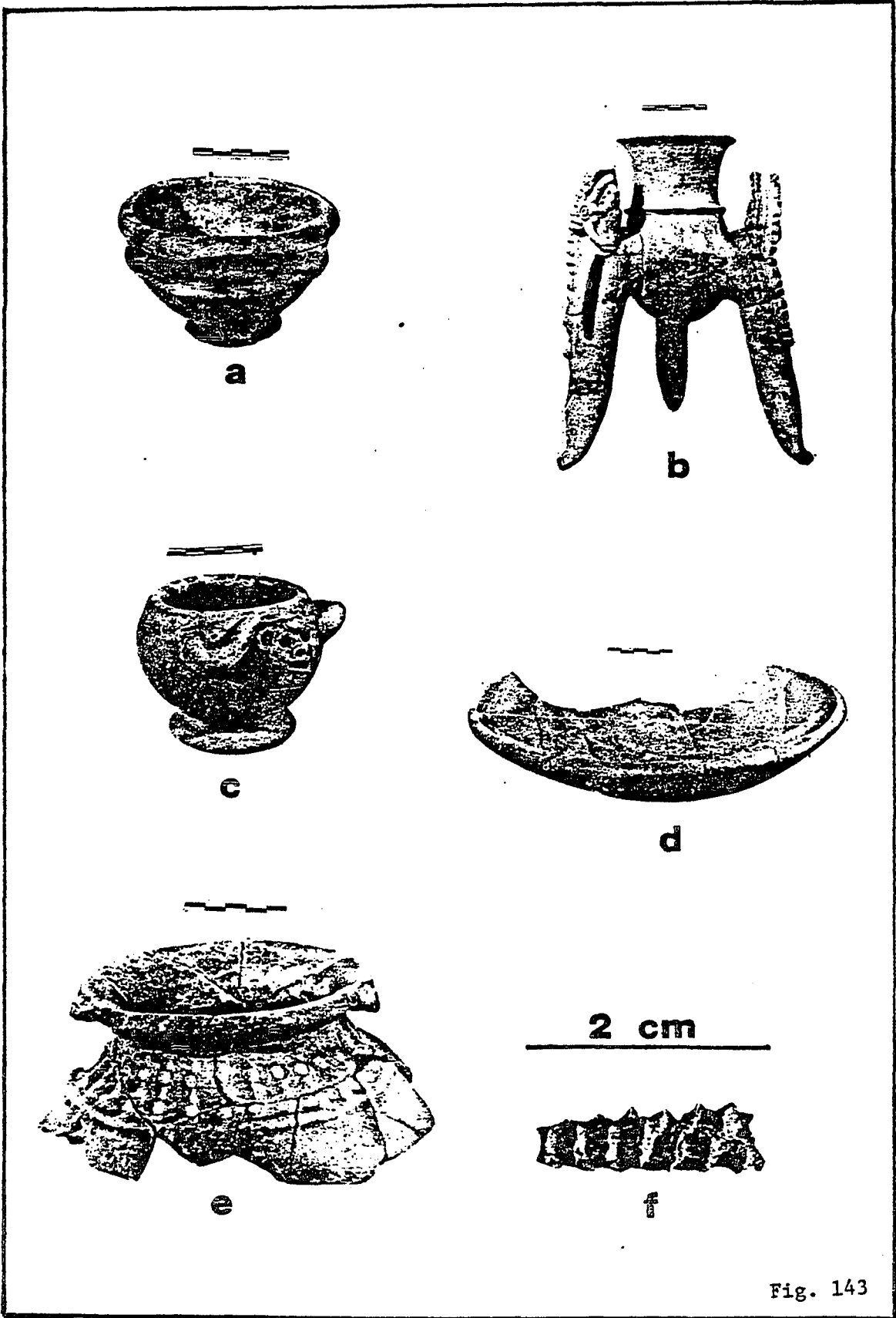


Fig. 143

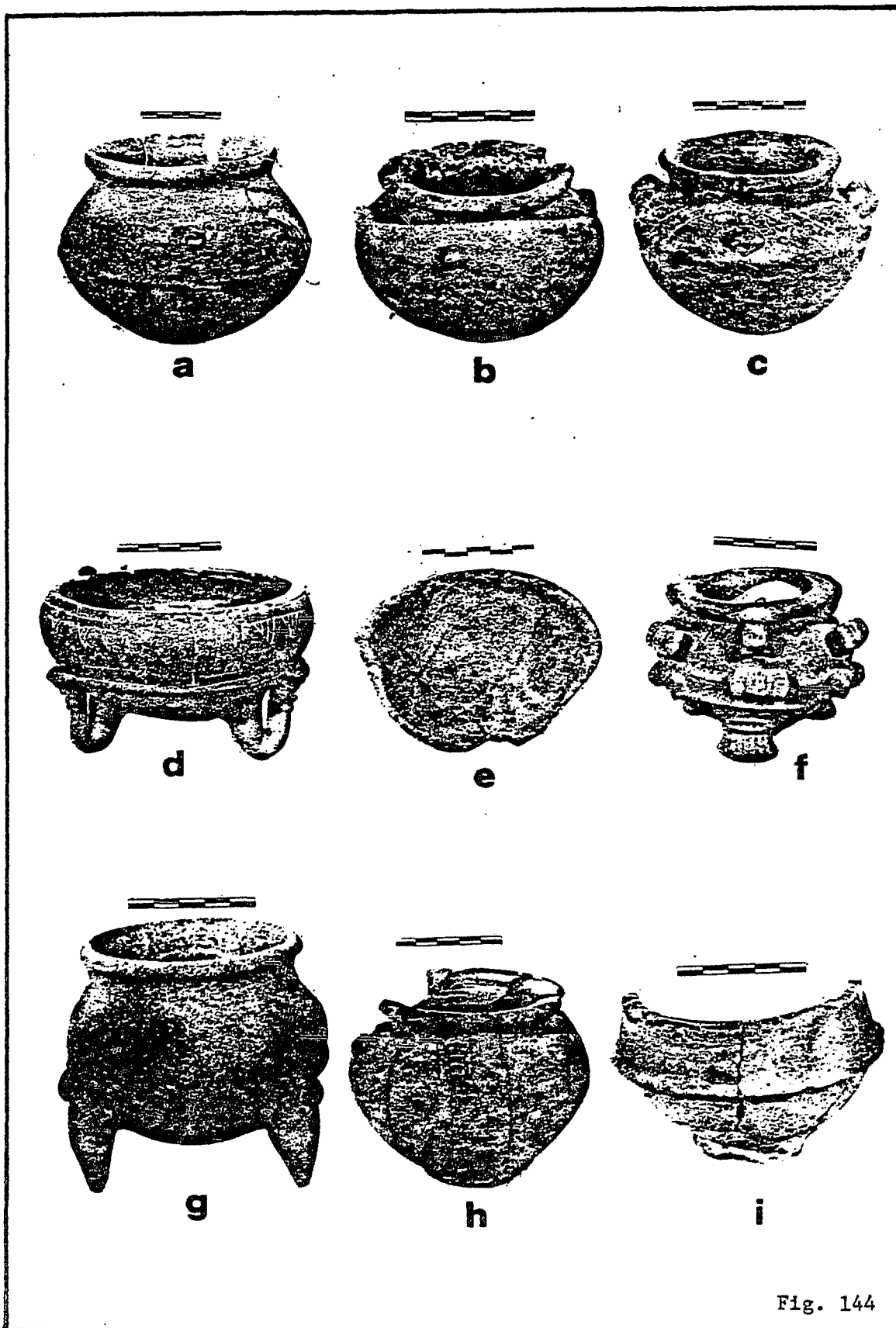


Fig. 144

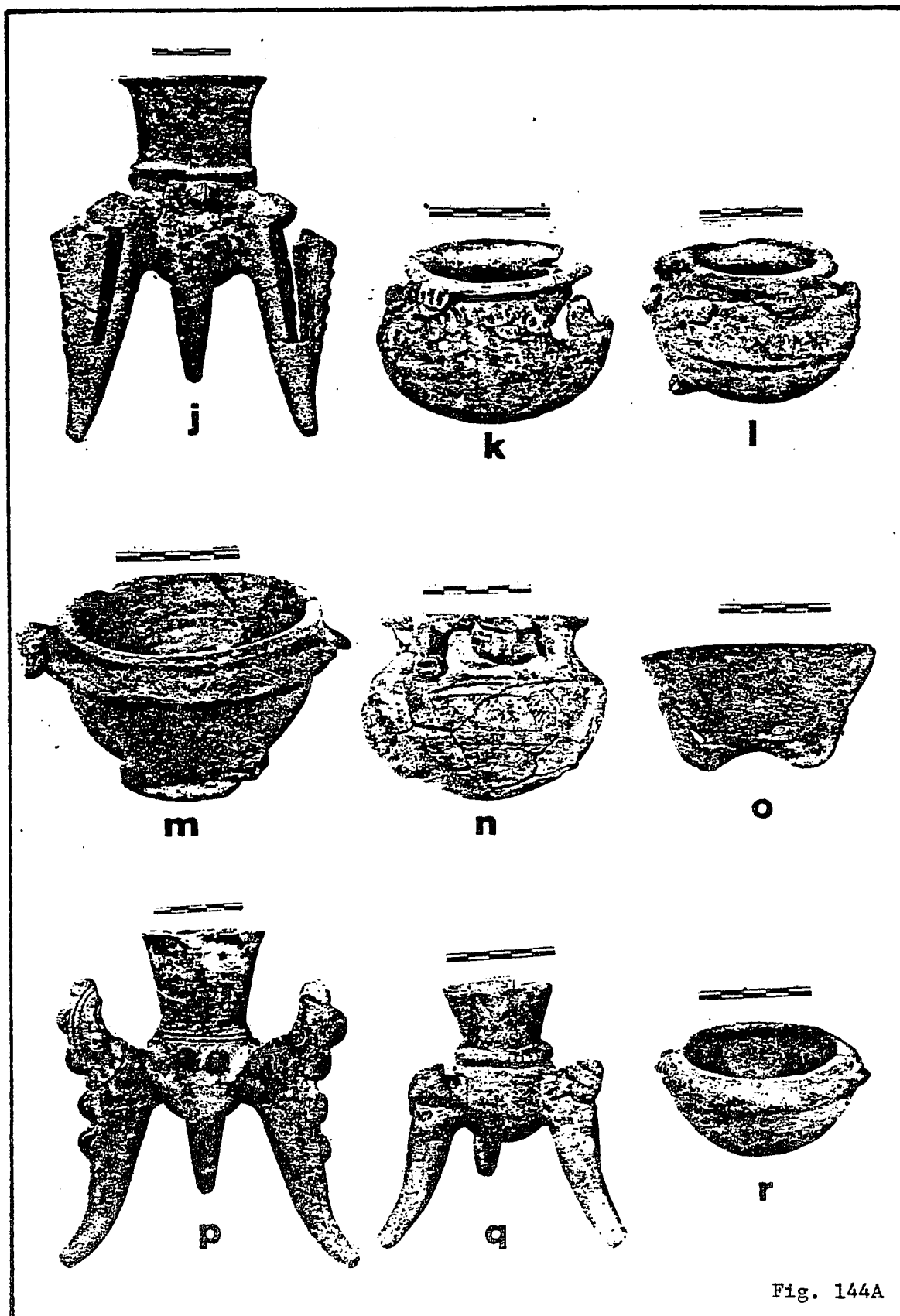


Fig. 144A

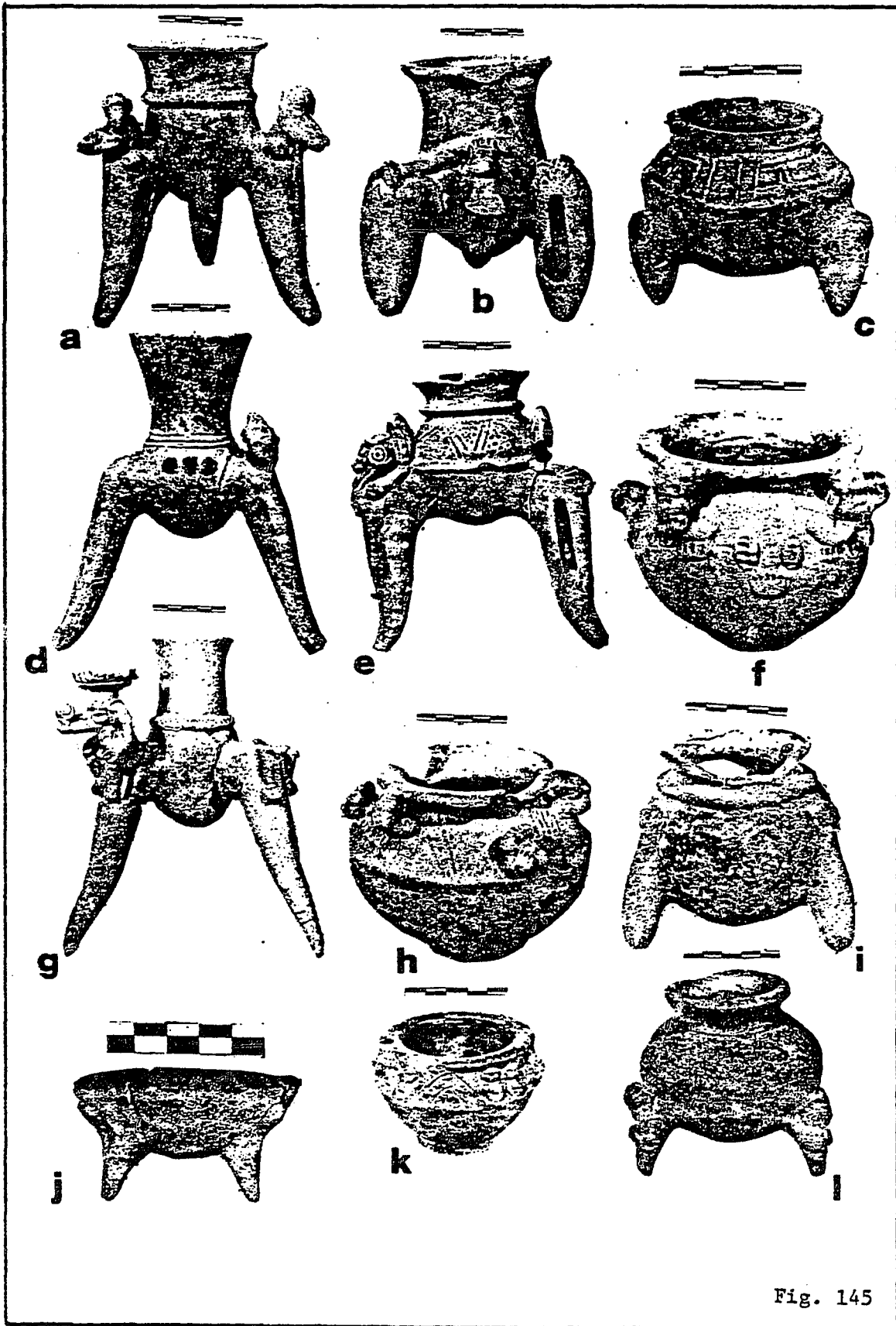


Fig. 145

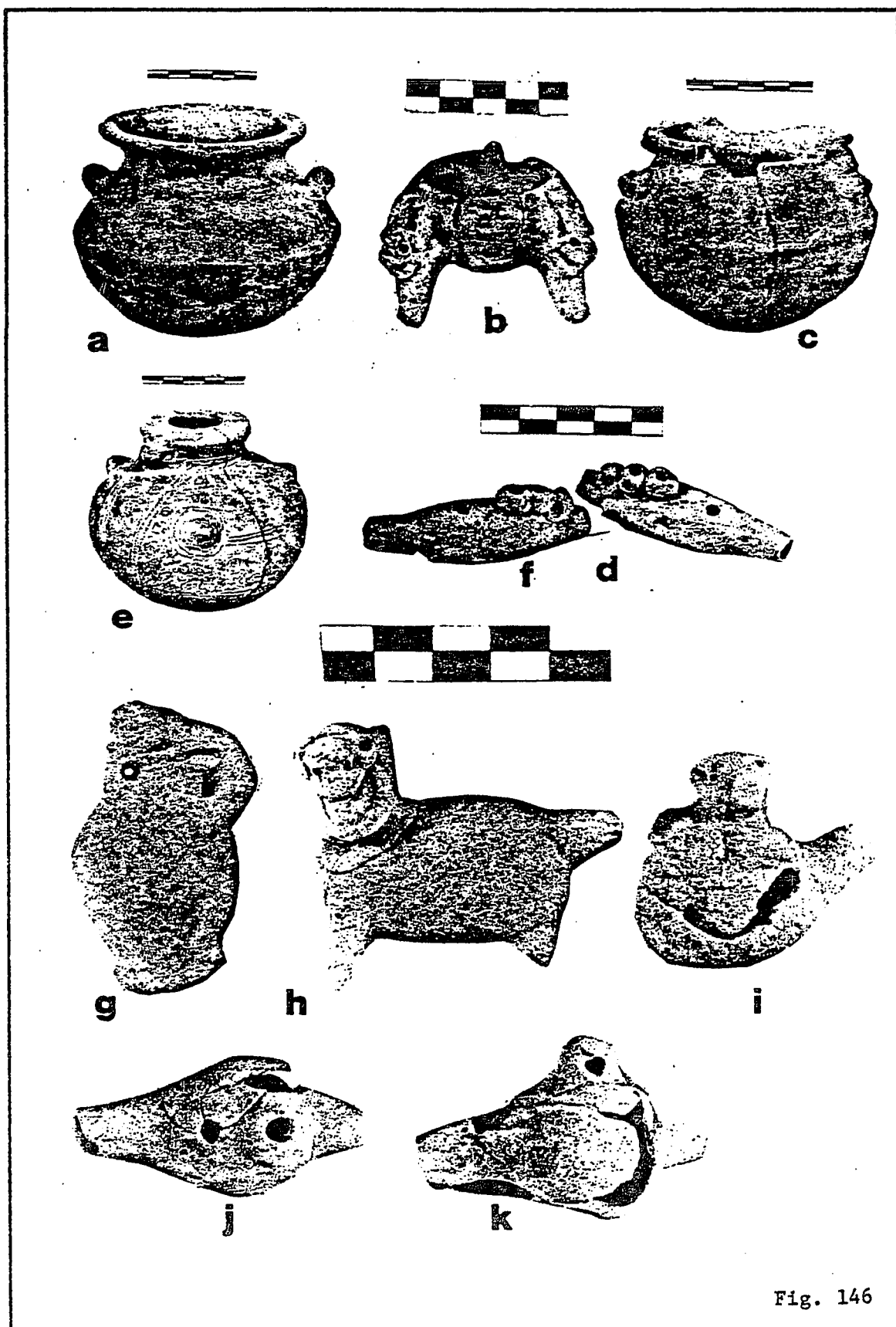


Fig. 146

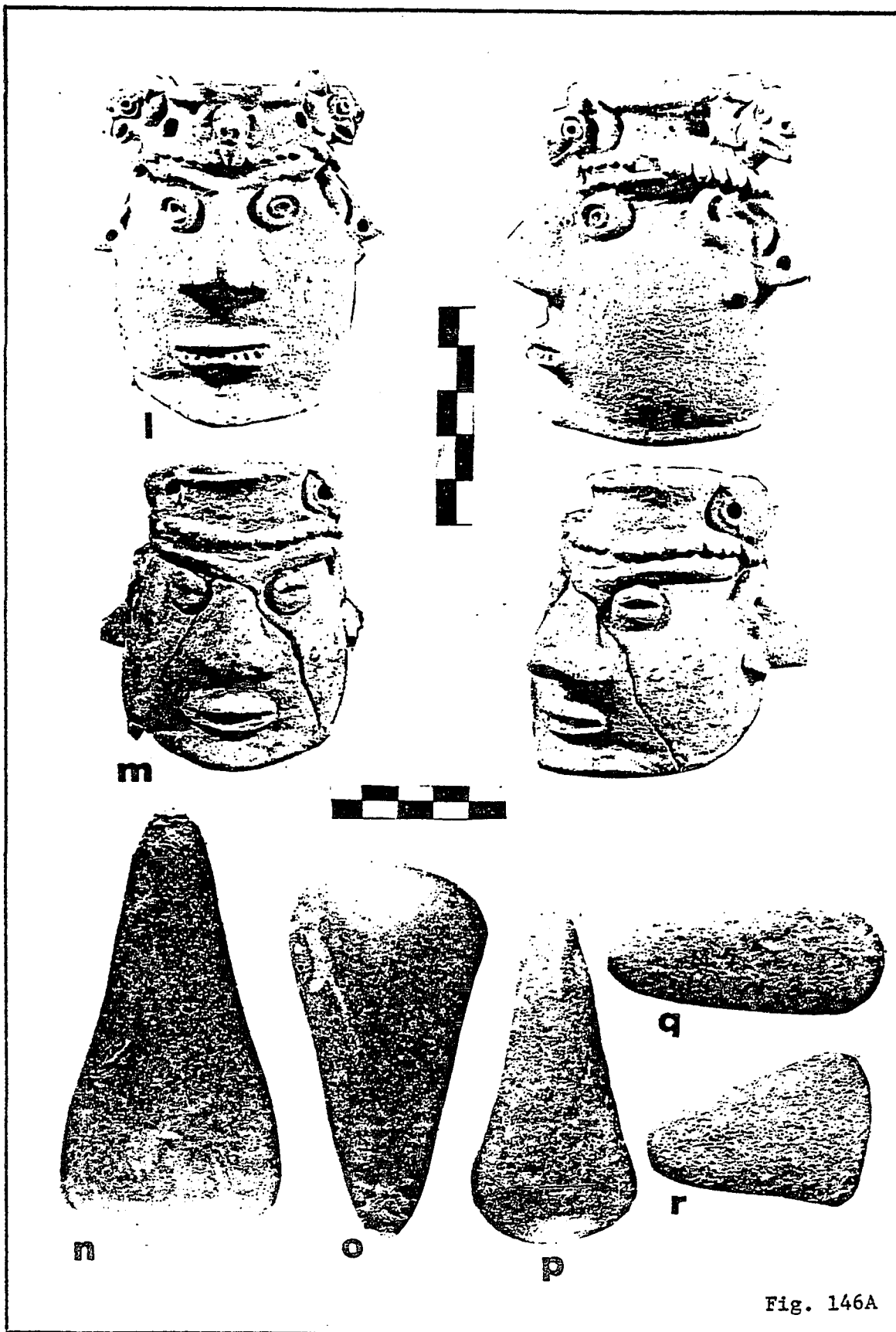


Fig. 146A

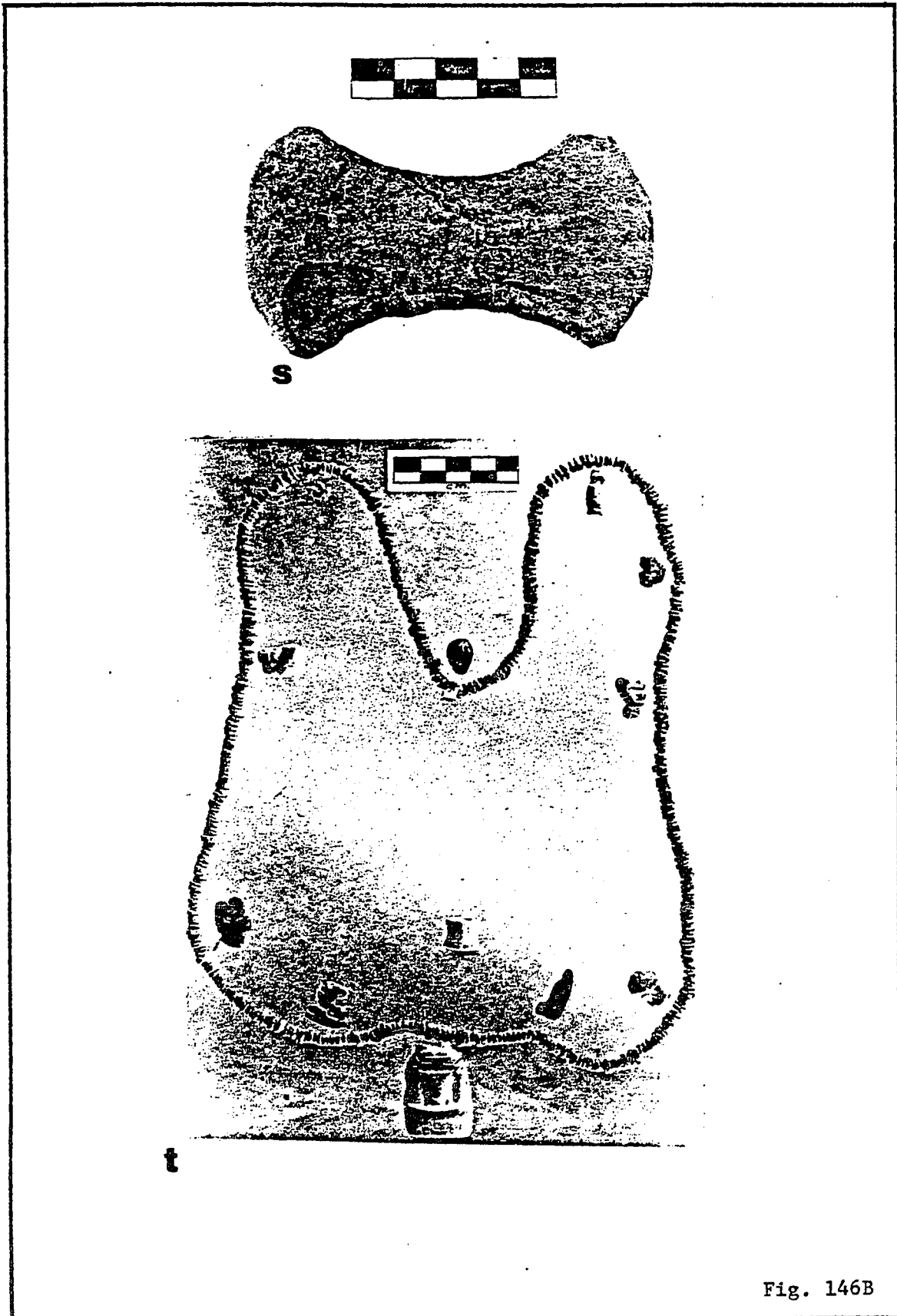


Fig. 146B

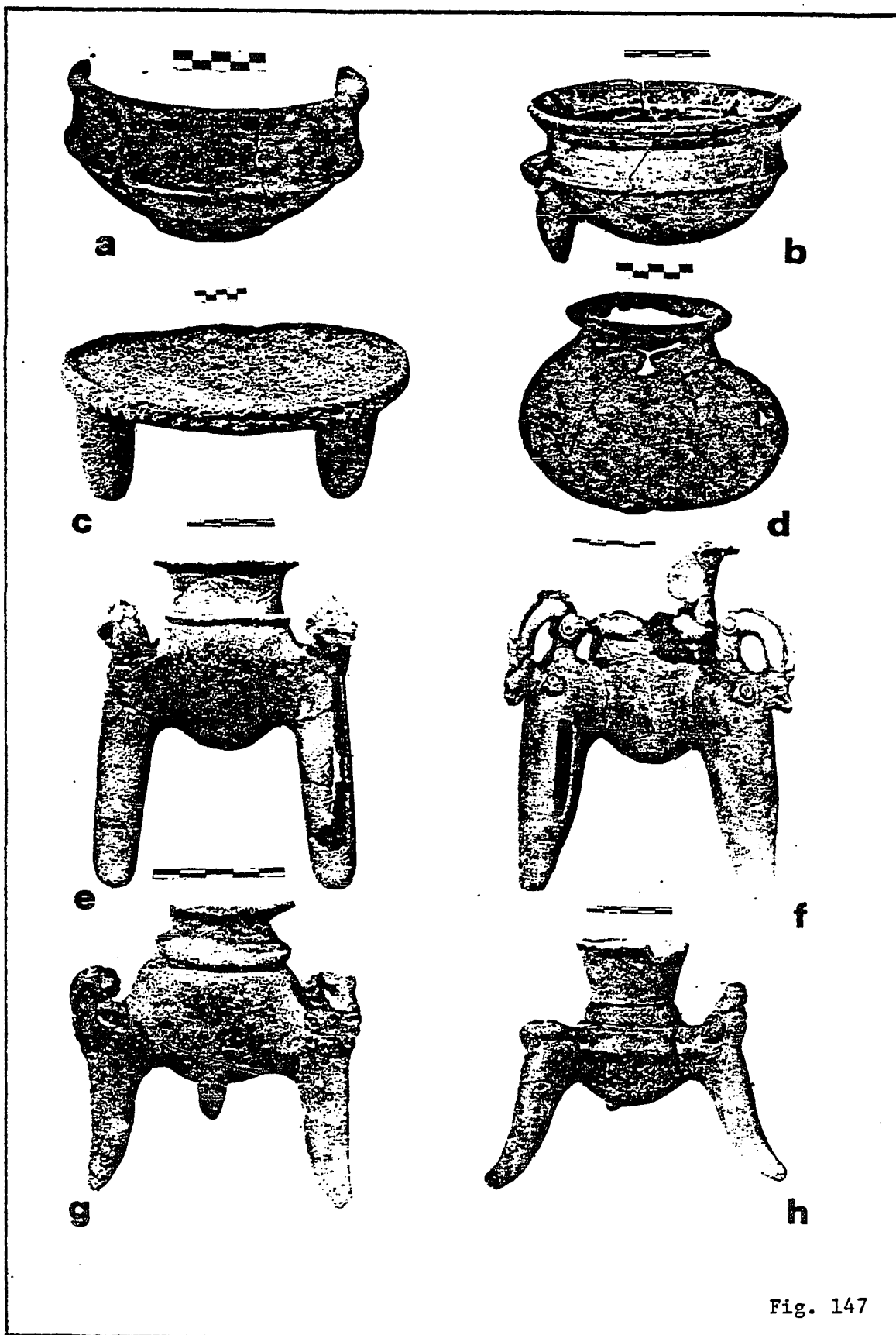


Fig. 147

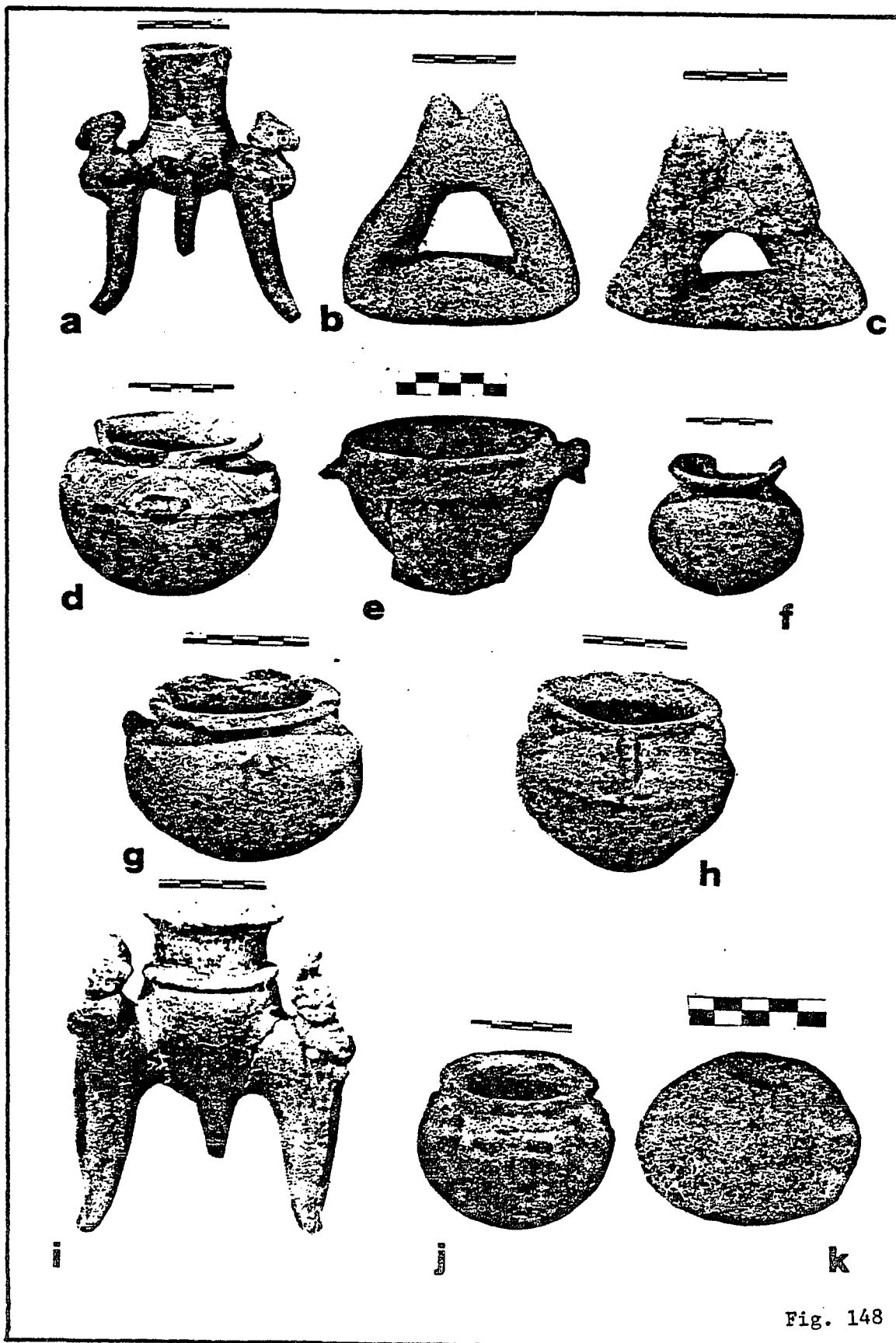


Fig. 148

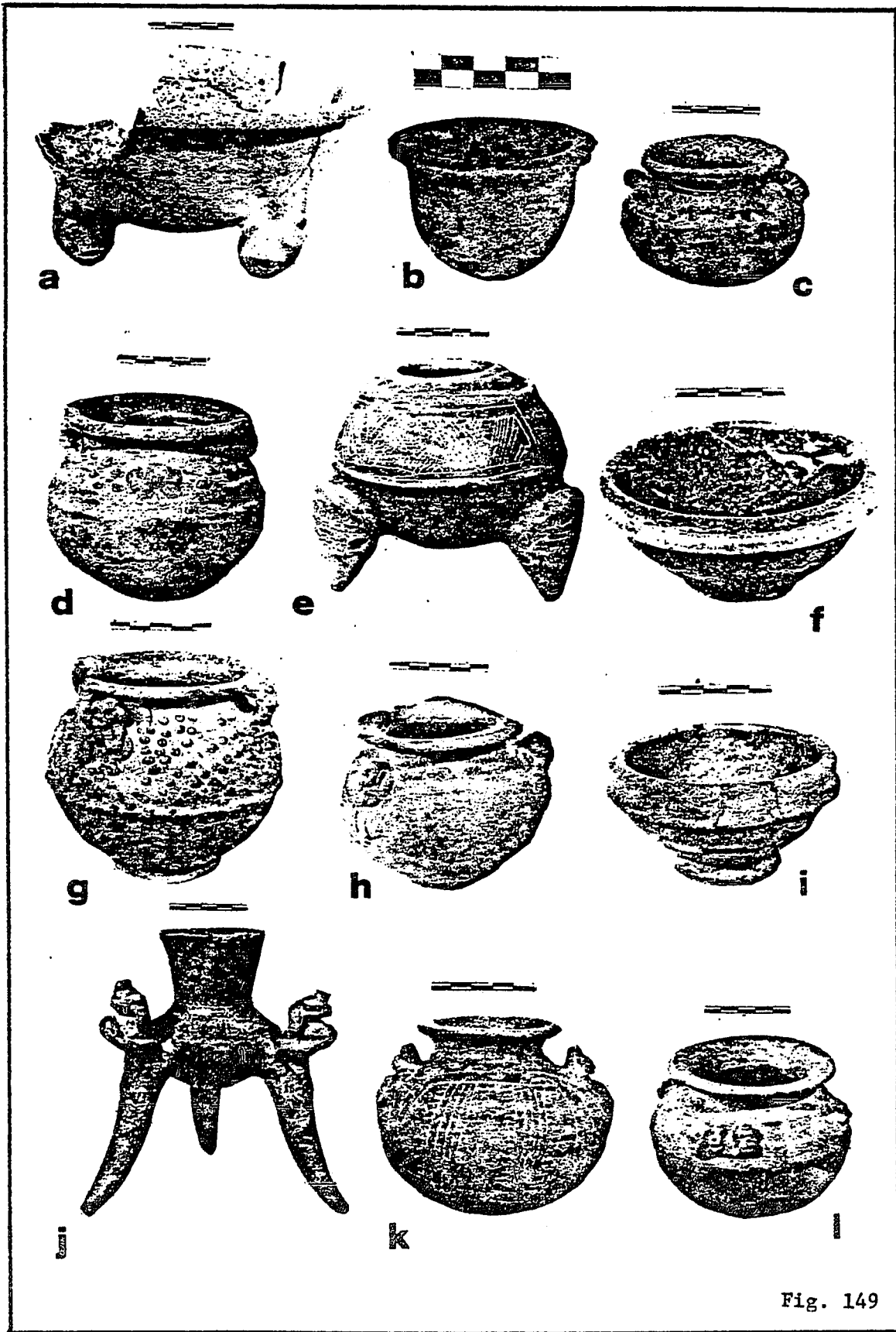


Fig. 149

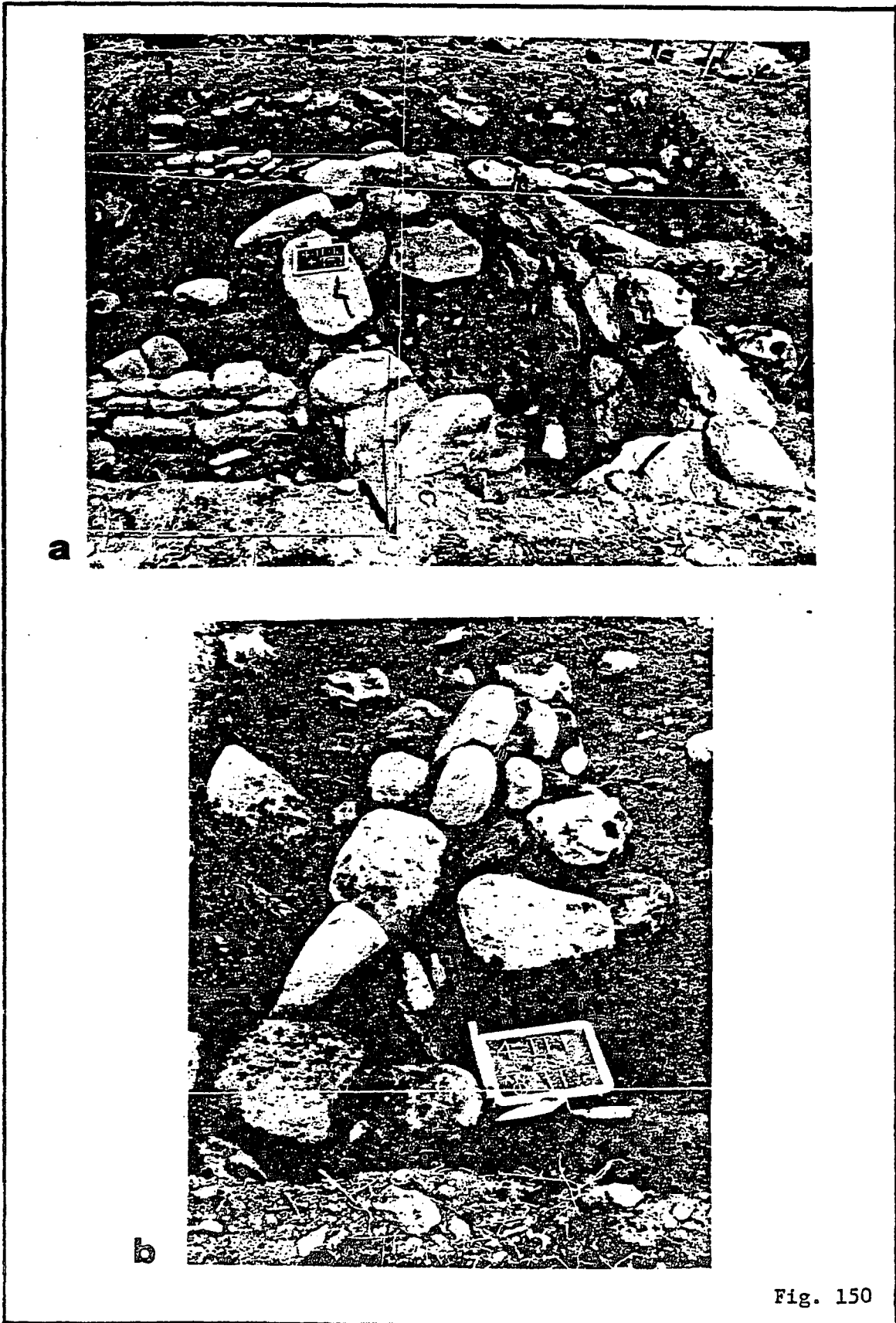
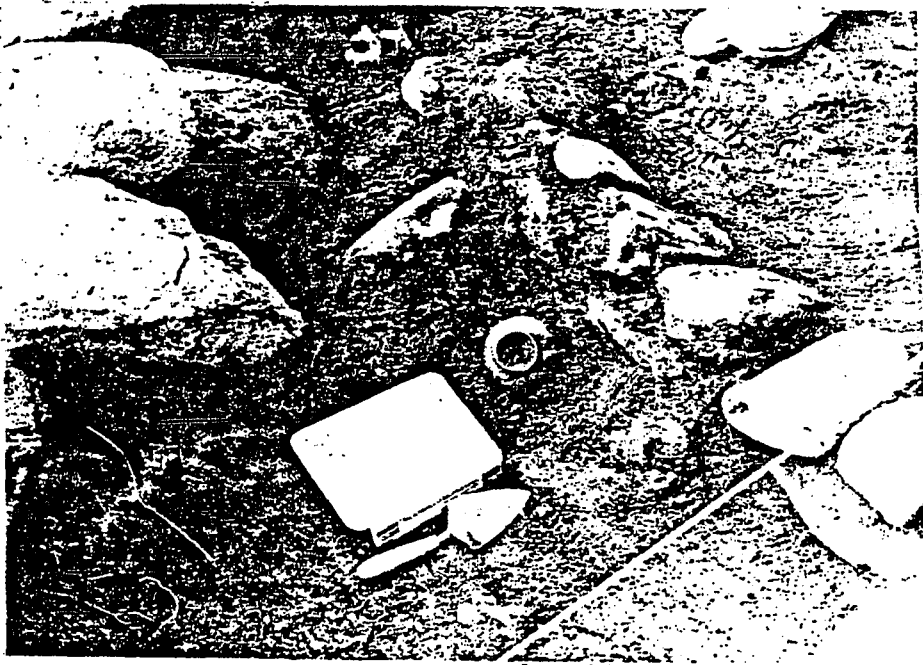


Fig. 150



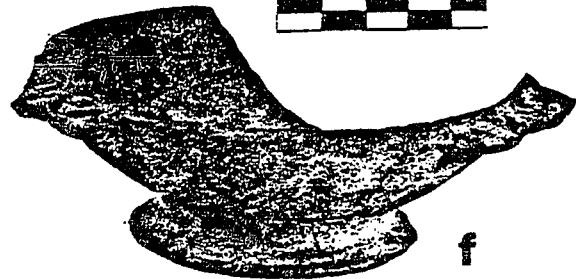
c



d



e



f

Fig. 150A

a



b

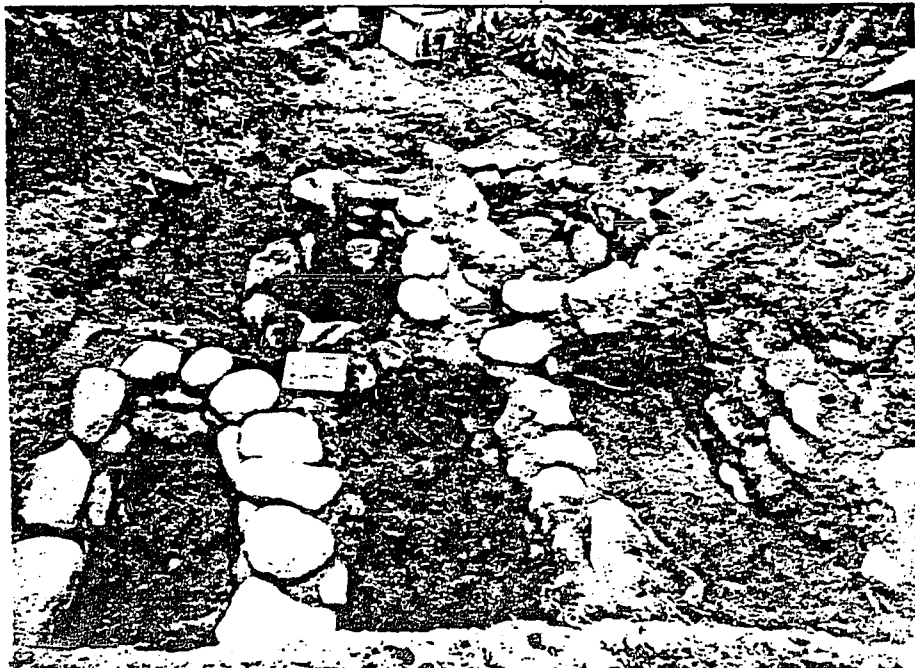
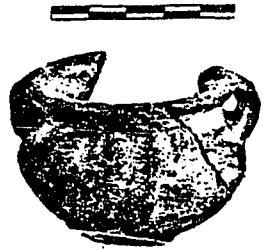
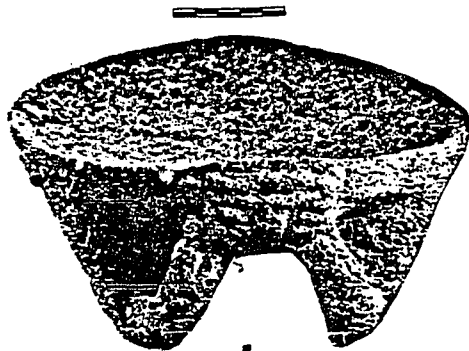


Fig. 151



a



b

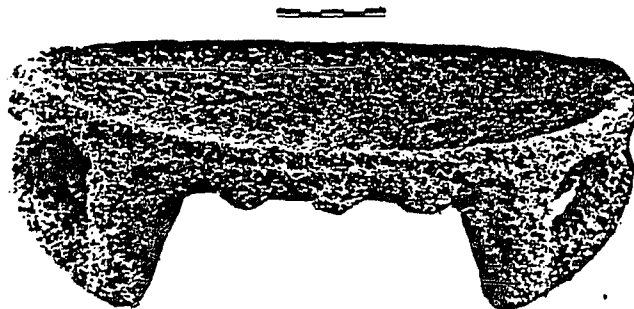
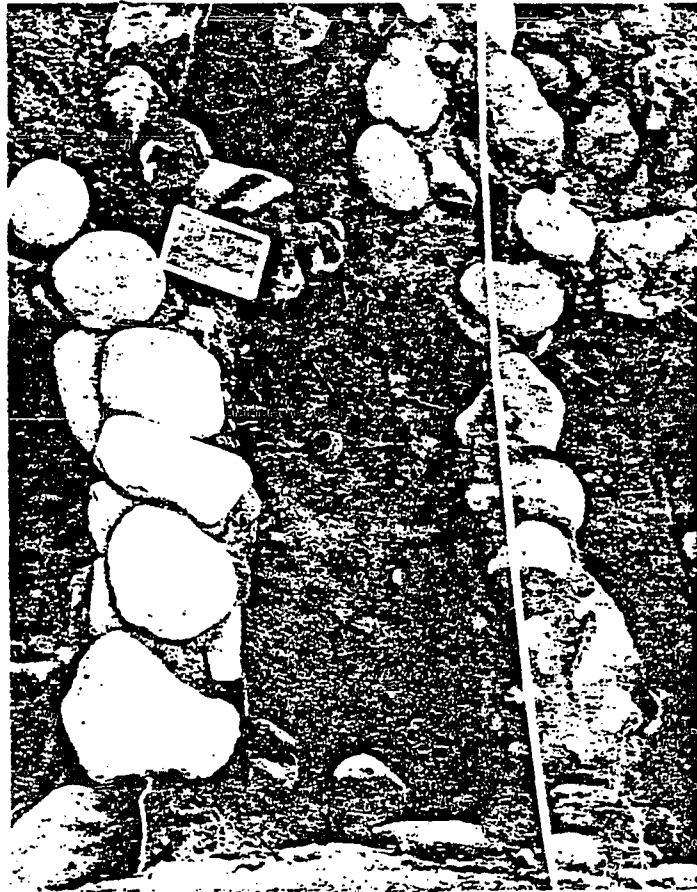
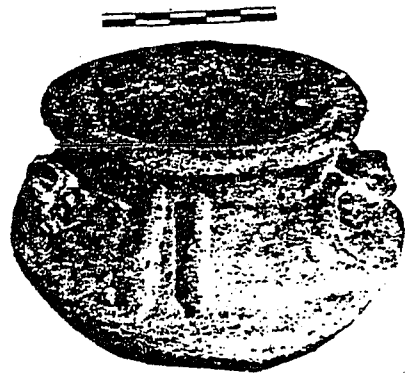


Fig. 152

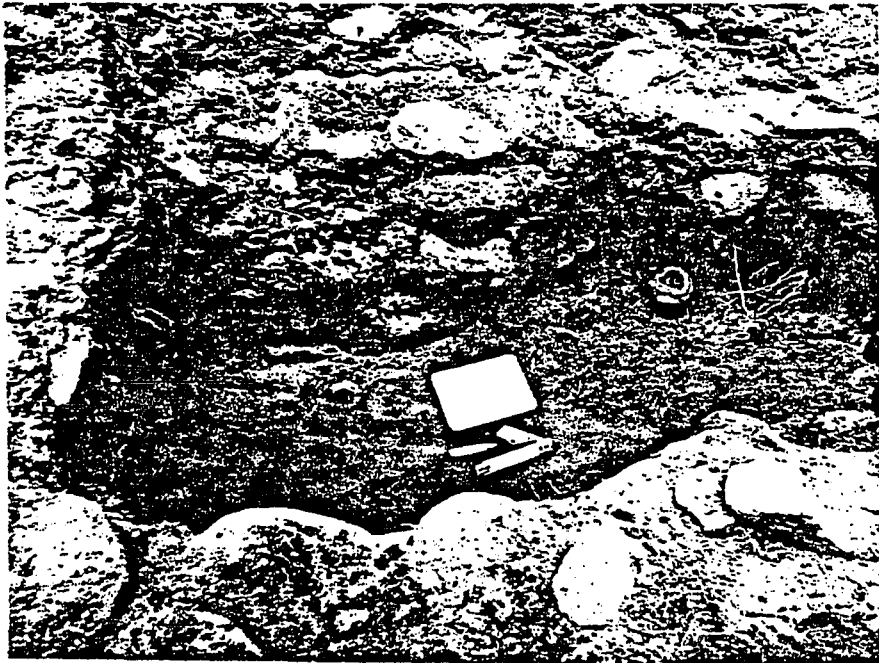


a



b

Fig. 153



a



b



c

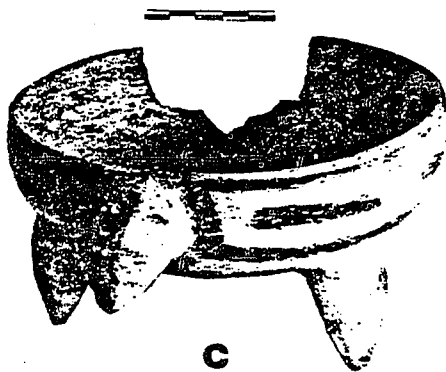
Fig. 154



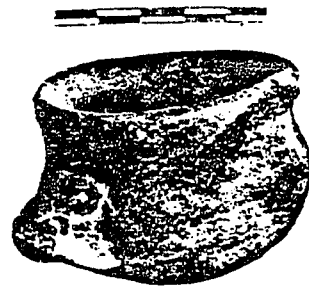
a



b



c

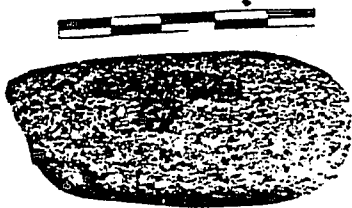


d

Fig. 155



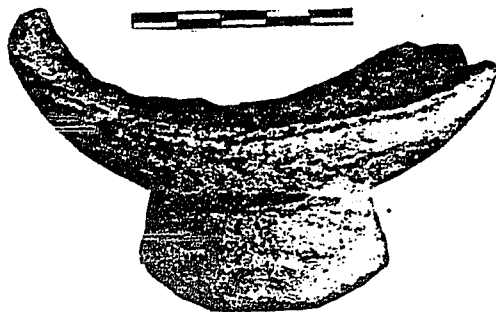
a



b



c

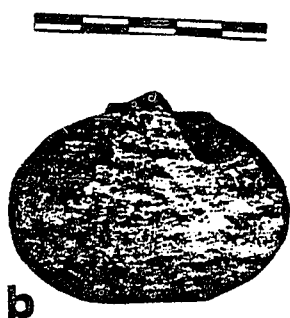


d

Fig. 156



a



b



c

Fig. 157

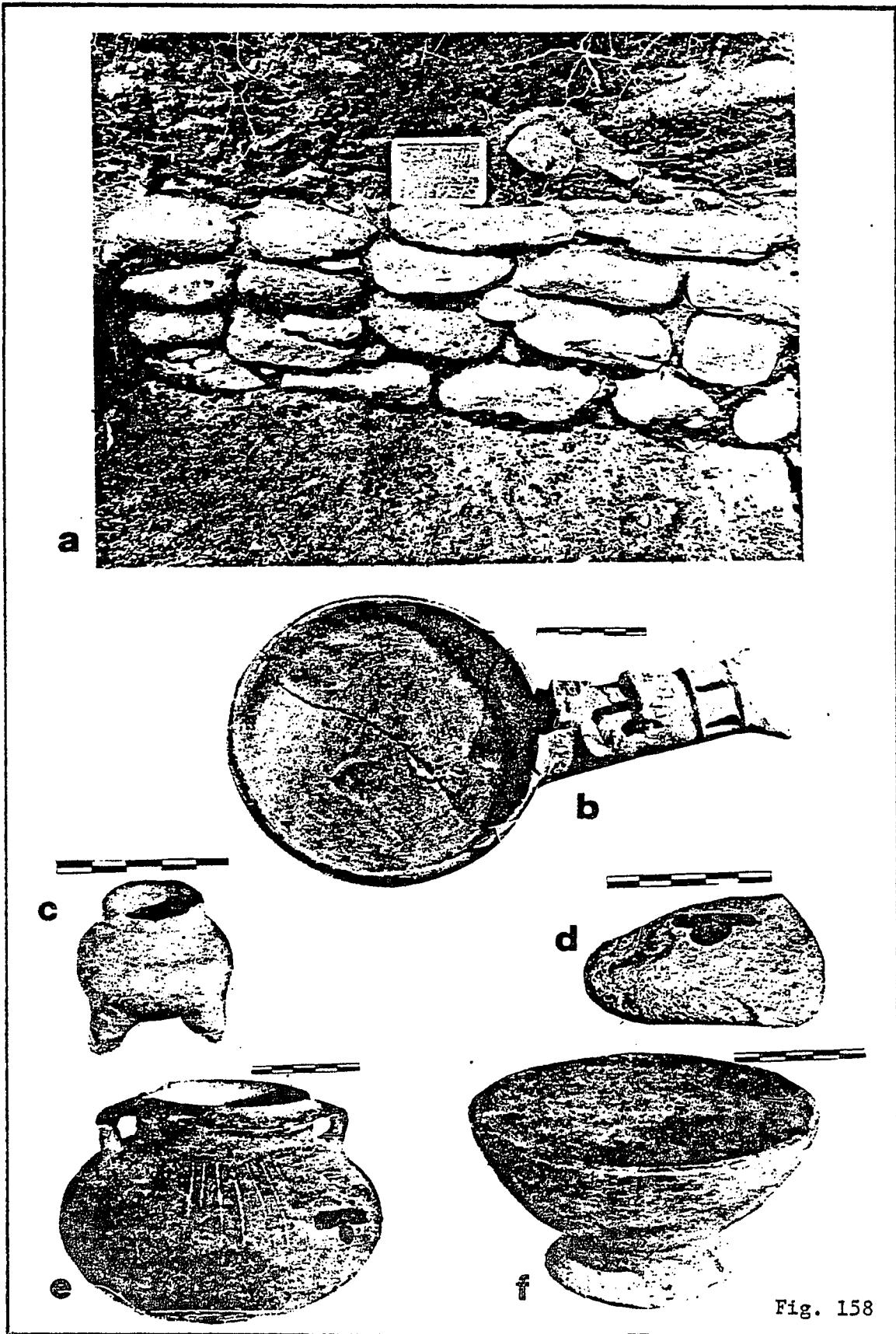


Fig. 158

a



b



Fig. 159

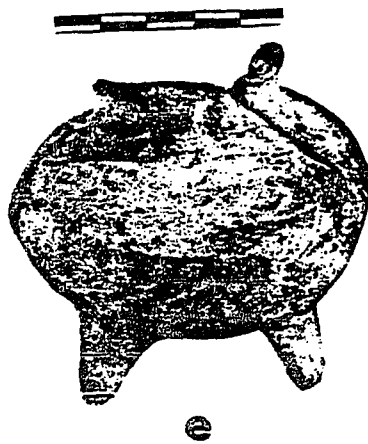
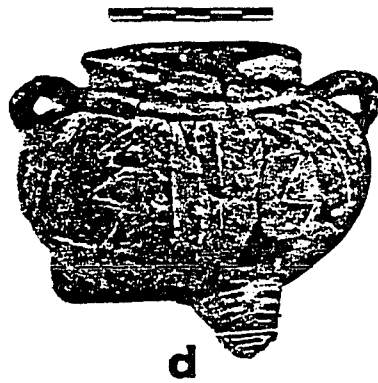
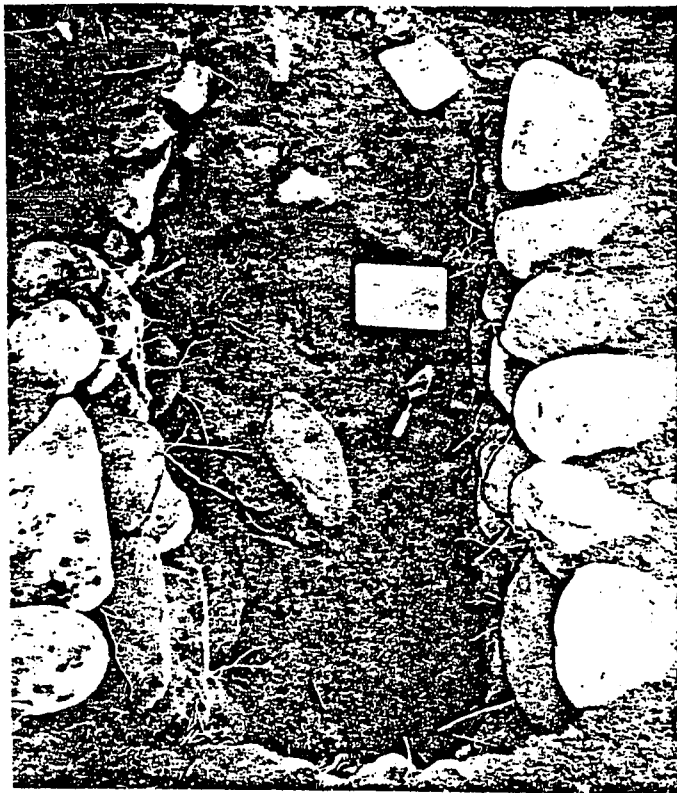


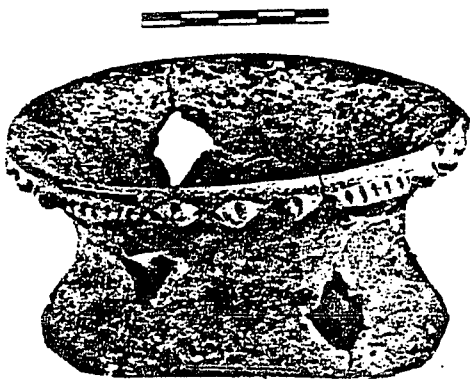
Fig. 159A



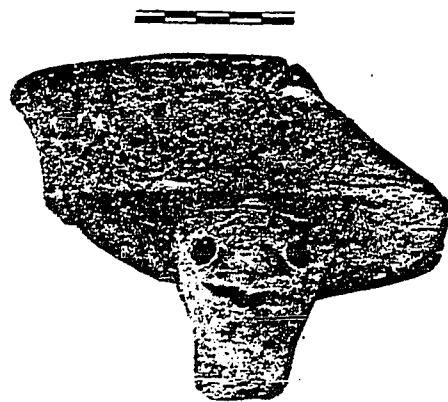
a



b



c



d

Fig. 160

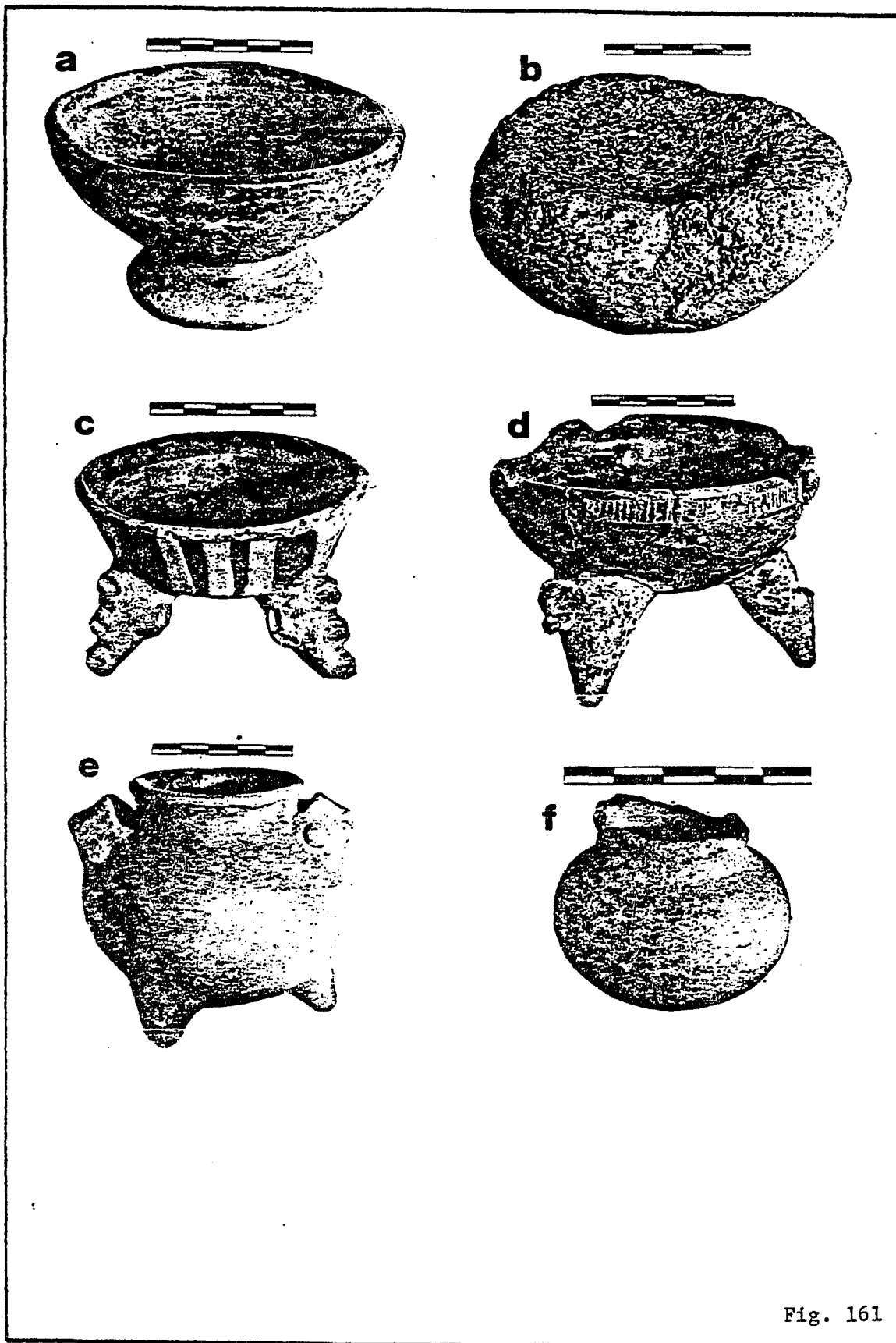


Fig. 161

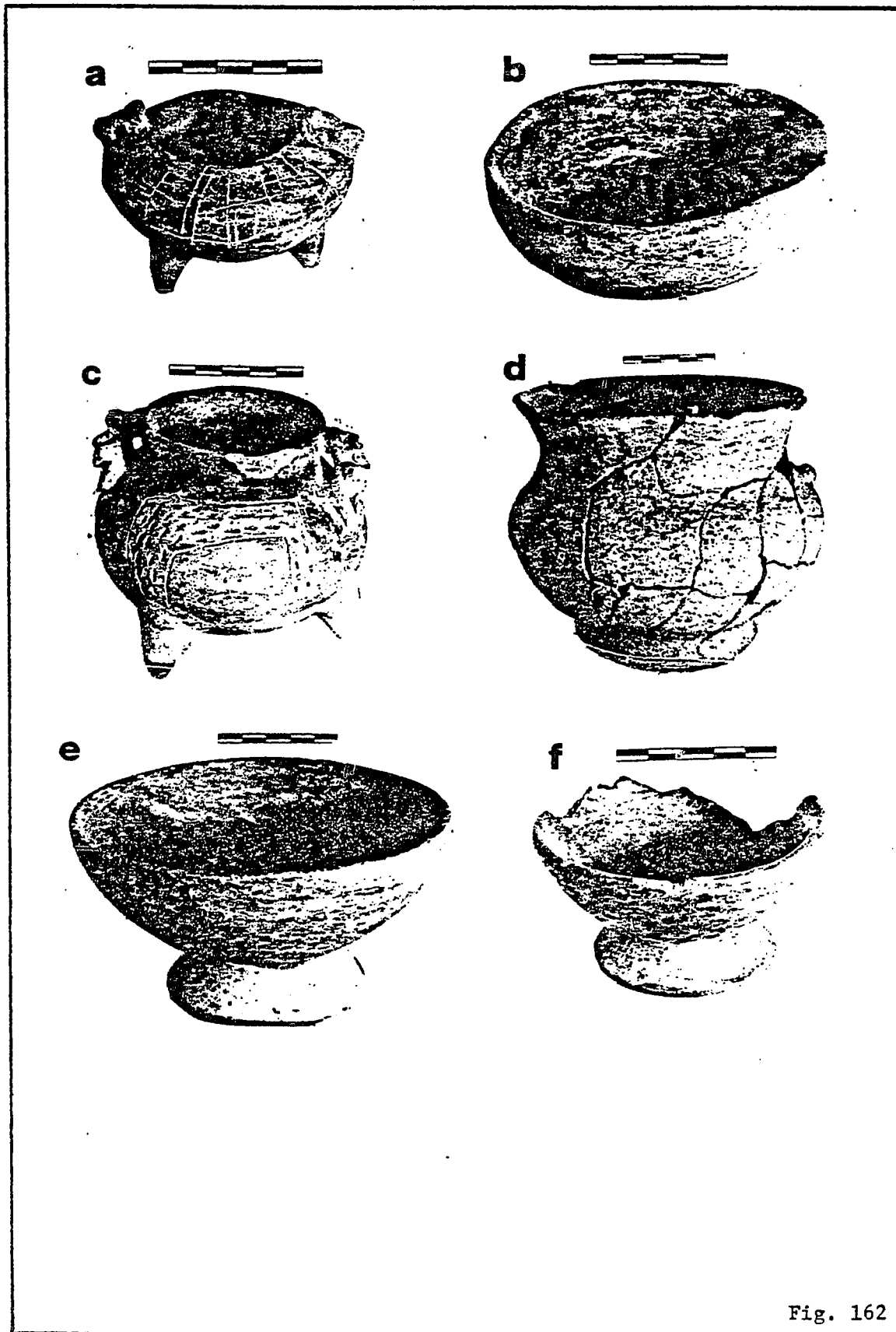
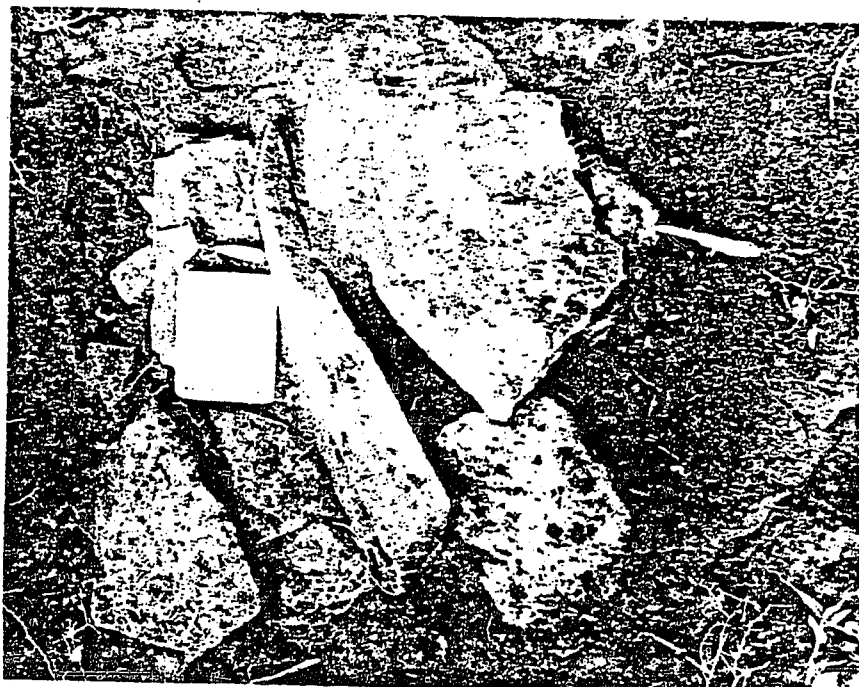


Fig. 162



b



a

Fig. 163



a



b



c

Fig. 164

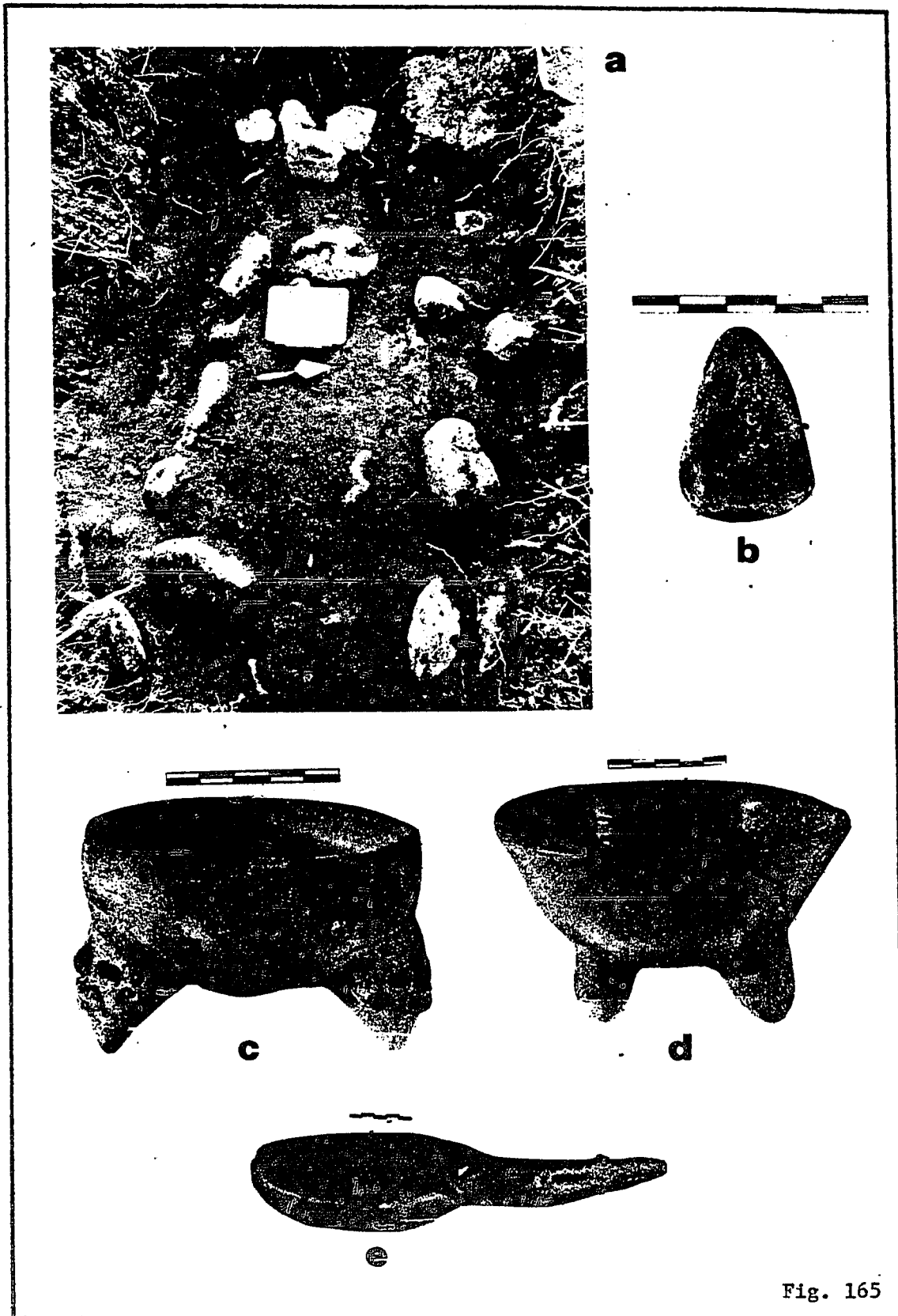


Fig. 165



a

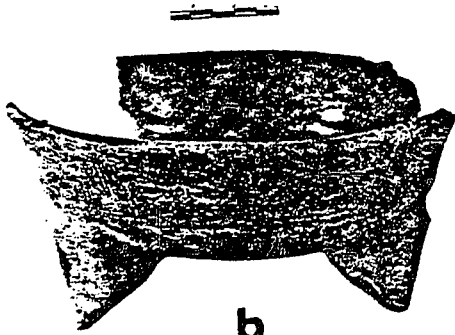


b

Fig. 166



a

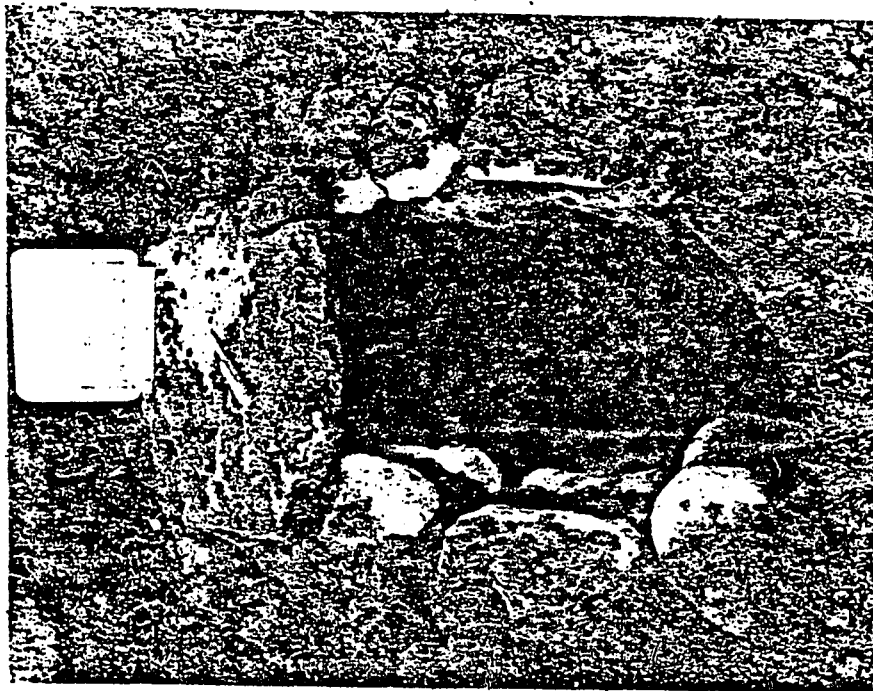


b



c

Fig. 167

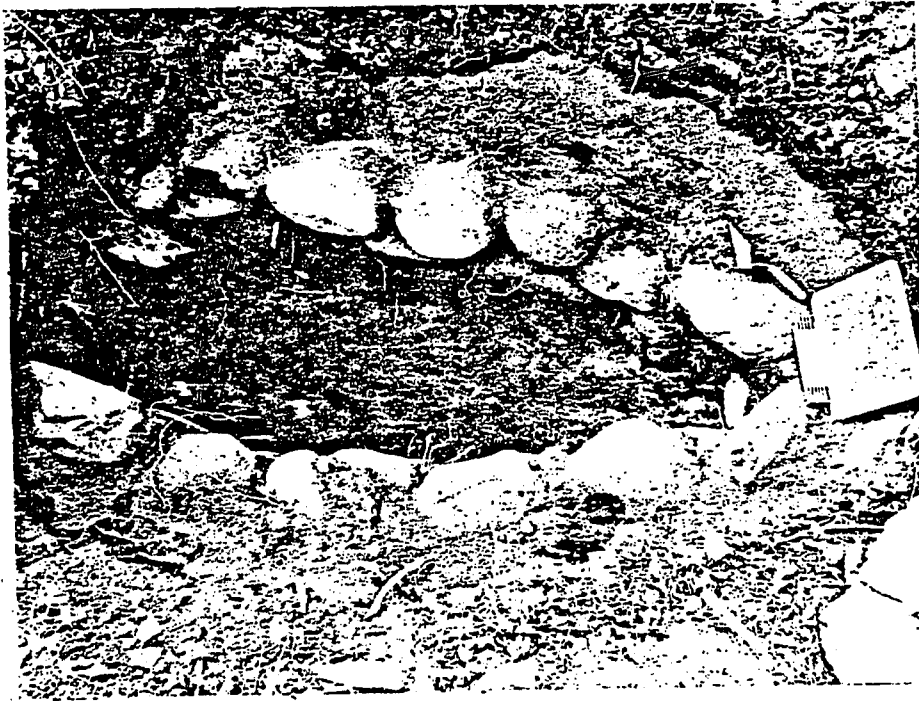


b



a

Fig. 168

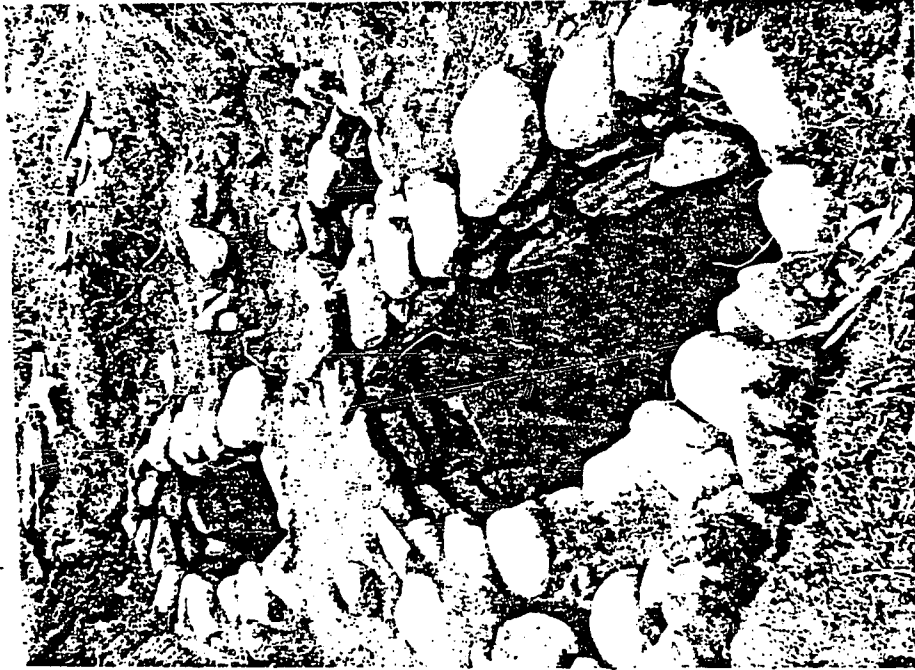


a



b

Fig. 169

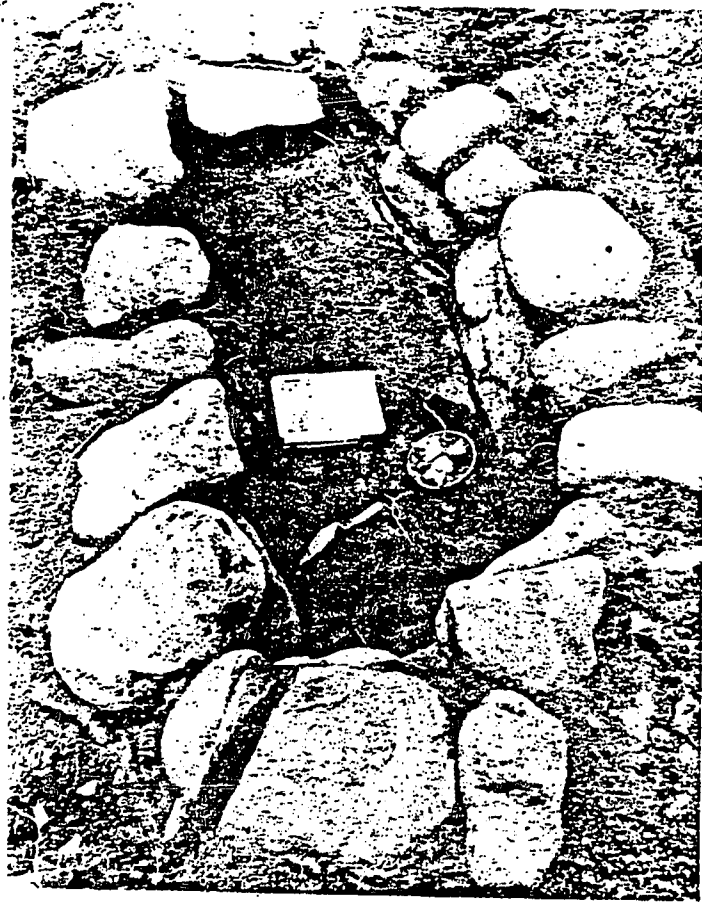


b

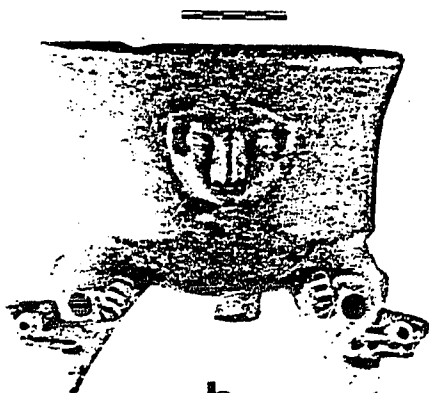


a

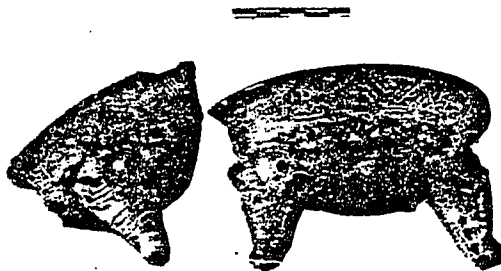
Fig. 170



a



b



c

Fig. 171

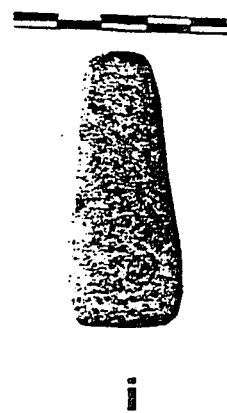
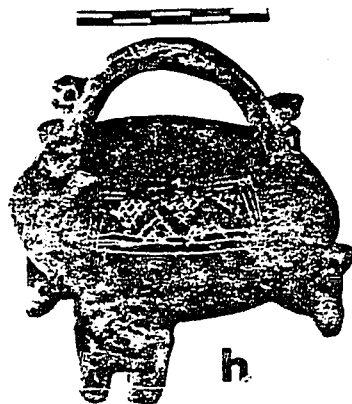
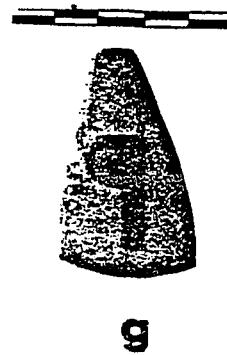
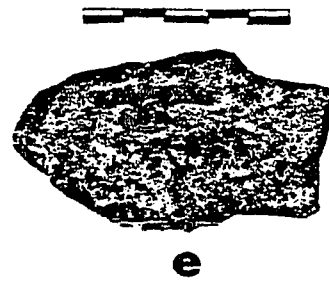


Fig. 171A



a



b



c

Fig. 172



a

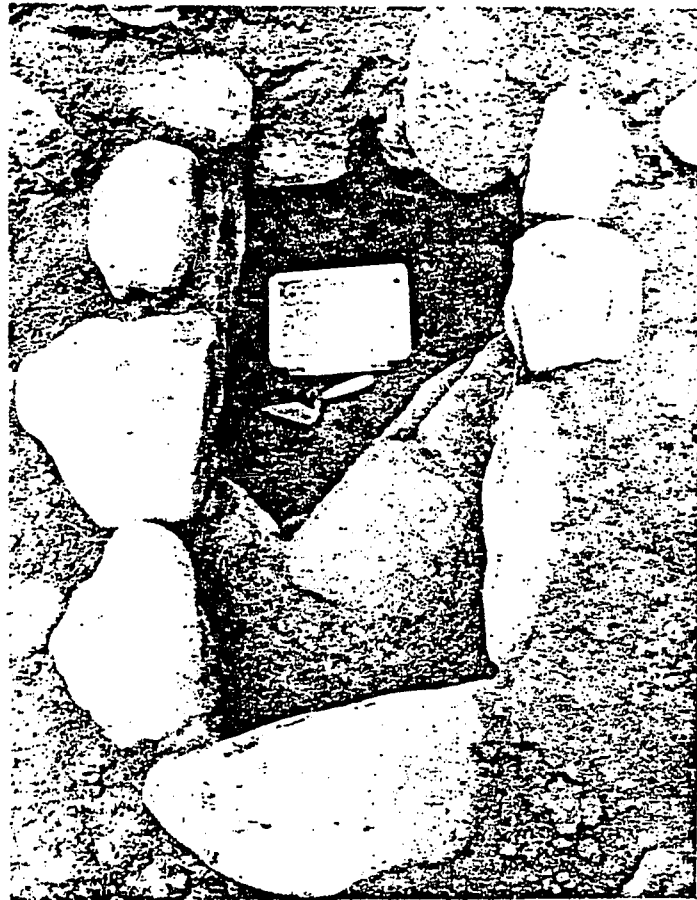


b

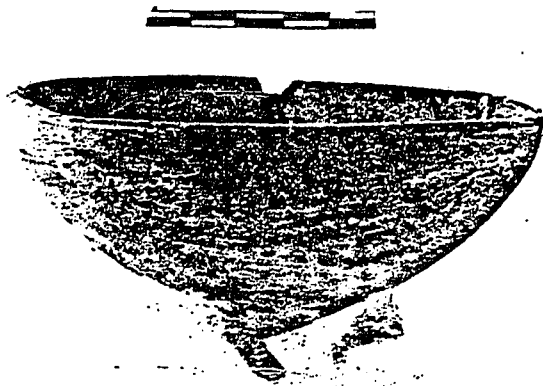


c

Fig. 173



a



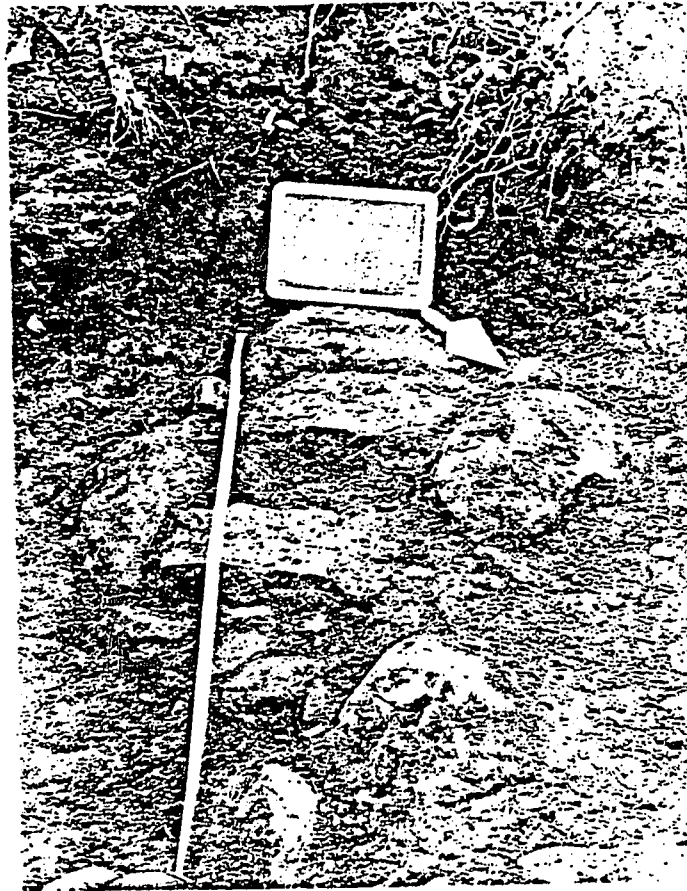
b



c

Fig. 174

a



b

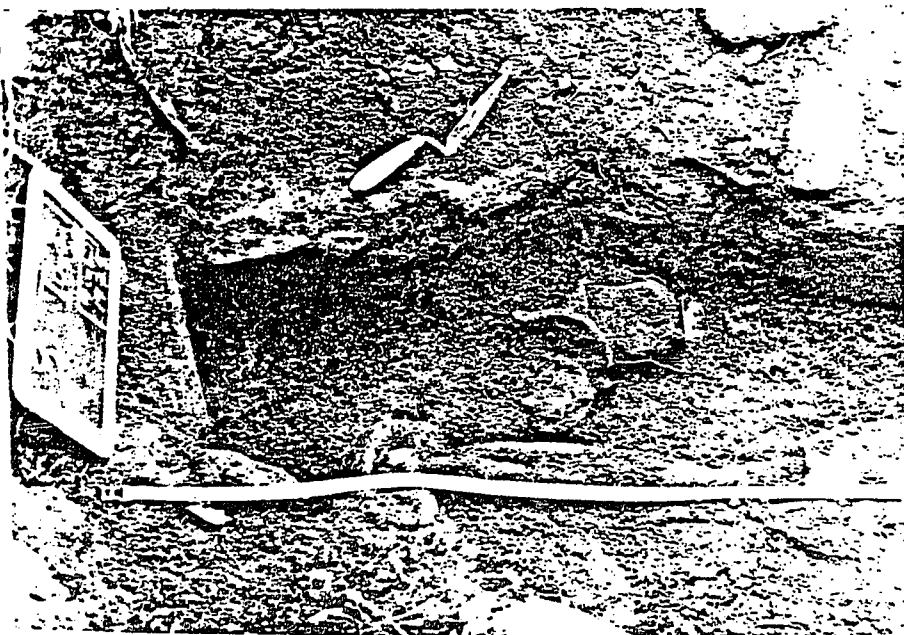


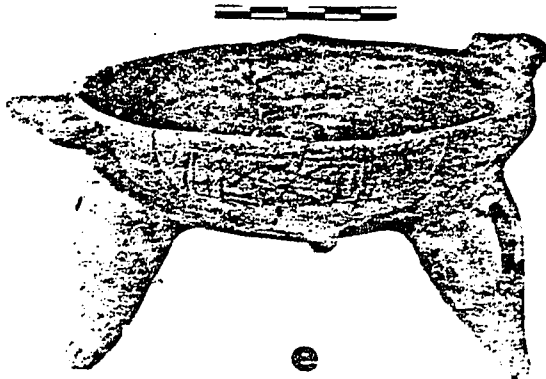
Fig. 175



c



d

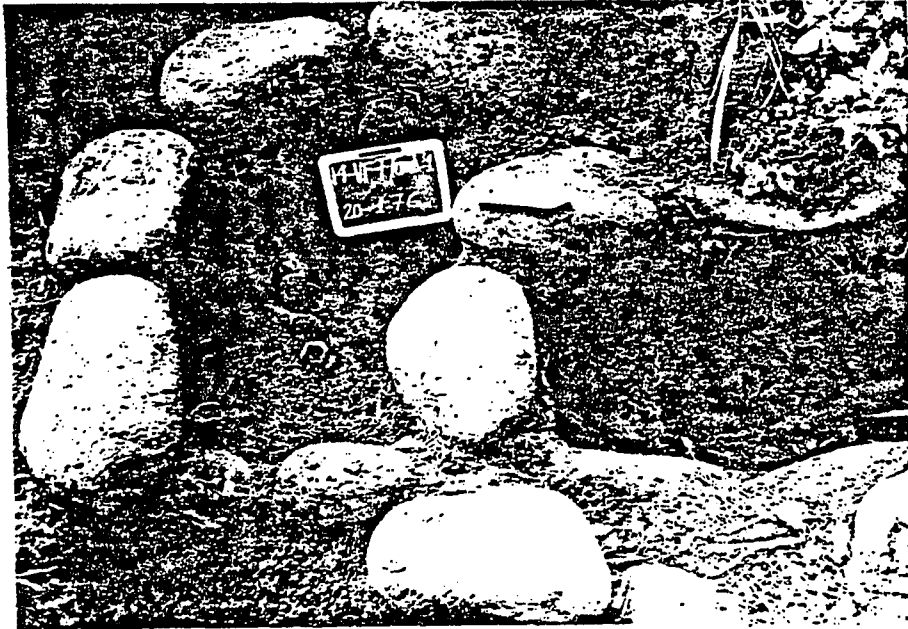


e



f

Fig. 175A

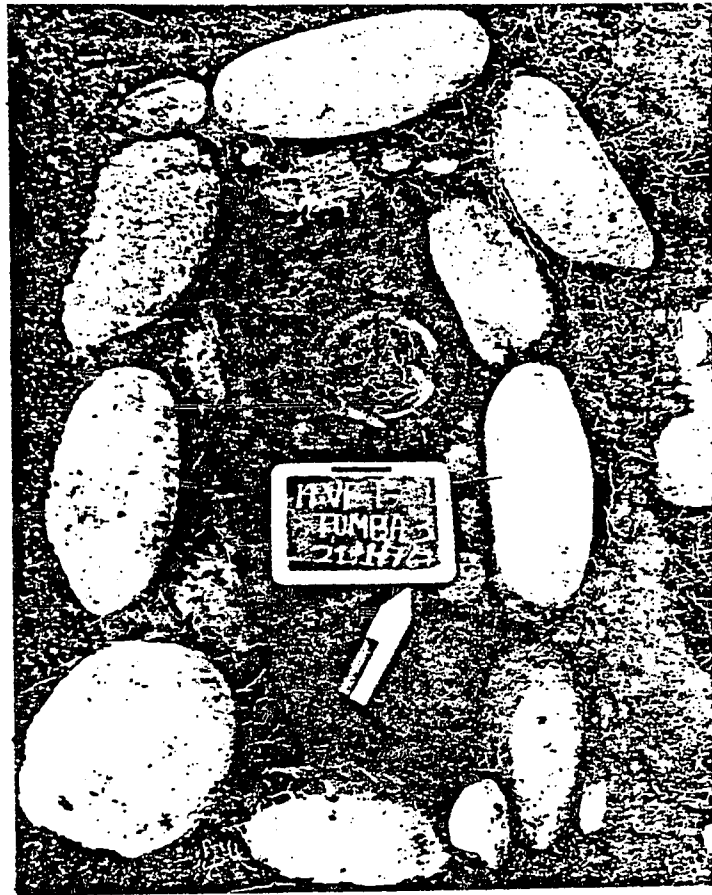


a

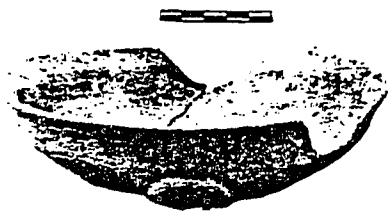


b

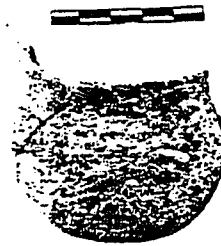
Fig. 176



c



d



e



f

Fig. 176A



a



b

Fig. 177



c



d



e



f

Fig. 177A



a



b



c



d

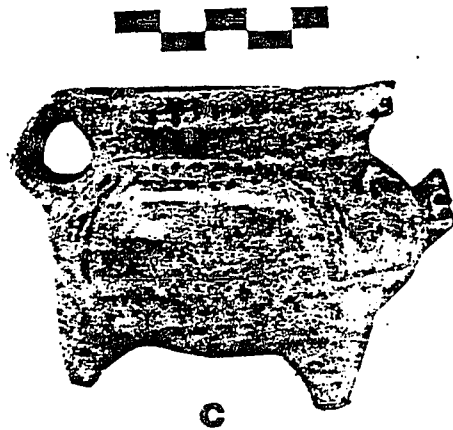
Fig. 178



a



b



c

Fig. 179



a



b

Fig. 180

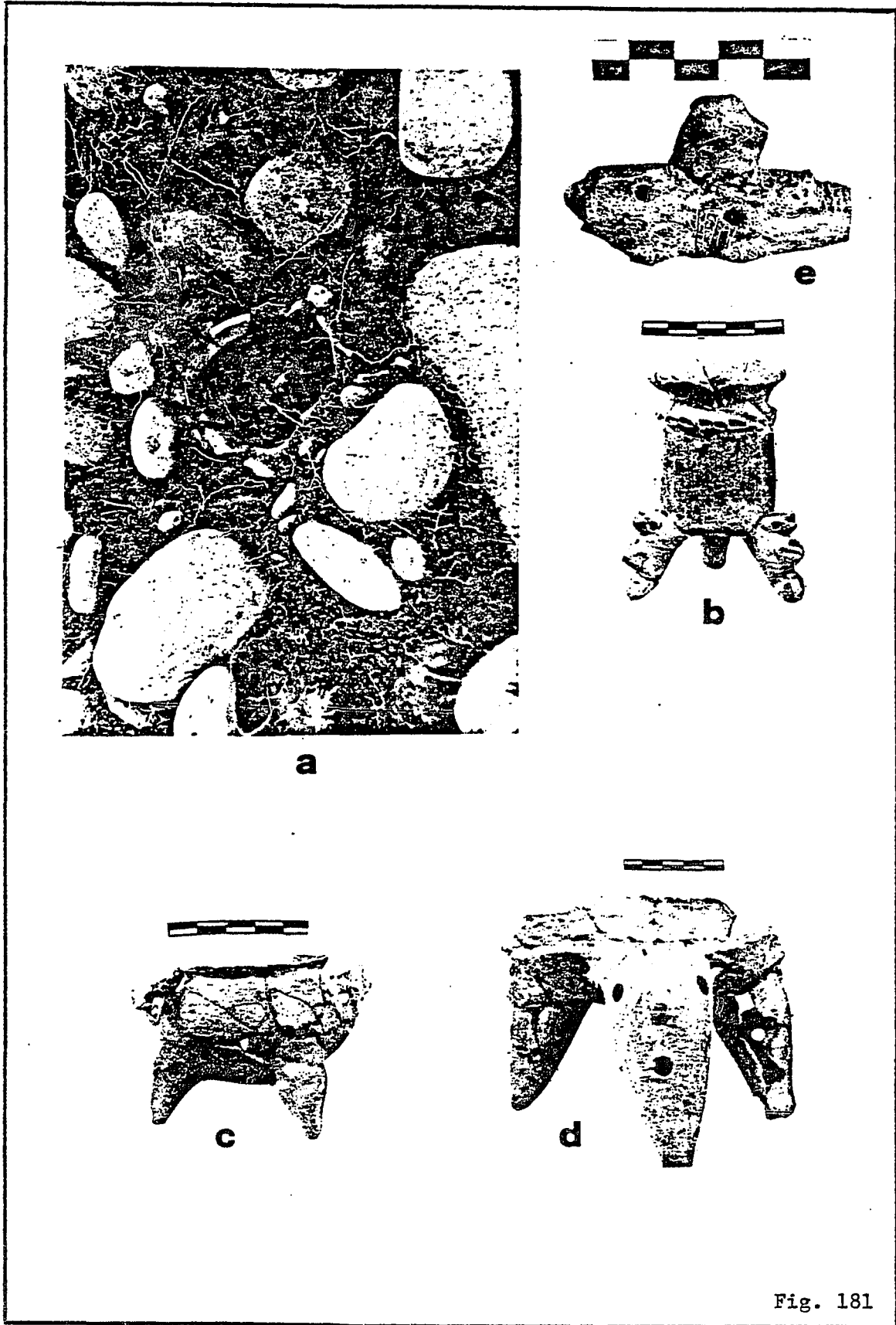


Fig. 181

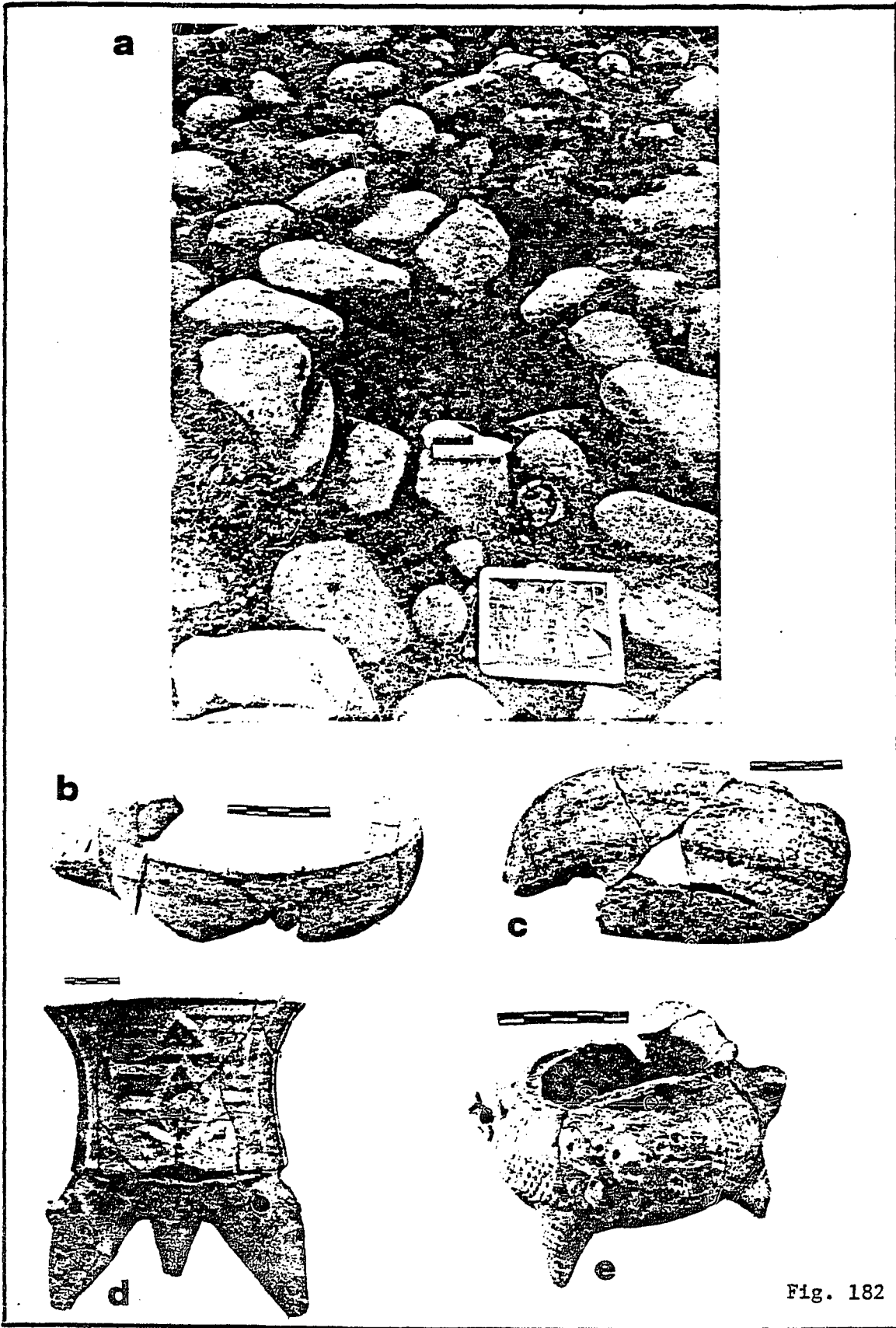
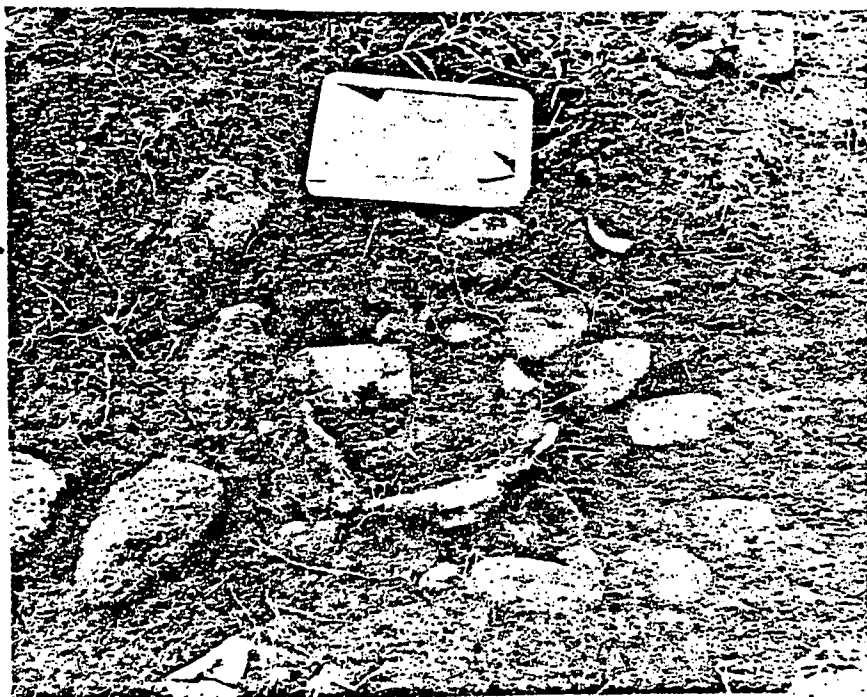
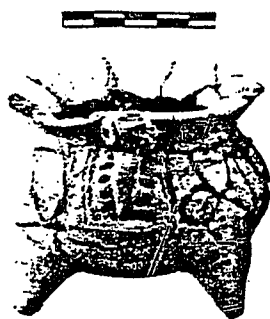


Fig. 182



a



b



c

Fig. 183