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ERES

«Eres» es un topónimo y una voz canaria que, en un sentido genérico, significa «hoyo o poceta formado en las rocas impermeables del alvéolo de los barrancos, donde se acumula arena fina y limpia con el agua de lluvia. Cuando se quiere extraer el agua se forma un pequeño hoyo en la arena, hasta que aparece el agua; dejando sentar el cieno se aclara y, sacada la necesaria, se vuelve a cubrir el hoyo para evitar la evaporación de la restante», tal como han recogido y analizado los investigadores J. Álvarez Delgado y D. Wölfel (ver D. J. Wölfel *Monumenta Linguae Canariae*, p. 511).

Hemos escogido este término porque creemos que resume metafóricamente el sentido de la revista, que *pretende ahondar y clarificar el acervo cultural de las islas*, a través de estudios serios y rigurosos, tanto a partir de documentos históricos, arqueológicos o etnográficos, como de la investigación puntera más actual. Para ello ha de profundizar más allá de las cosas que se contemplan a primera vista, penetrando en la realidad como lo hacían nuestros antepasados para buscar el agua necesaria para su sustento.

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ANTROPOLOGÍA

ANTHROPOLOGY: SHIPS THAT CRASH IN THE NIGHT*

MARVIN HARRIS

University of Florida, Gainesville

Anthropology in the closing years of the 20th century is a complex and fractious collection of disciplines and subdisciplines. While the traditional four fields of specialization (sociocultural, physical, archaeological, and linguistic anthropology) are still preserved in the organization of the larger graduate departments in the U.S.A., an individual's expertise rarely extends to more than one subfield. In addition, new subfields based on narrower common interests have proliferated in recent years.¹

This essay is concerned with the principal paradigmatic options that are currently represented primarily in the work of sociocultural and archaeological anthropologists. Although some of the paradigmatic options found in sociocultural anthropology are also found in one or more of the other subfields, it should be made clear at the outset that the author's viewpoint is primarily that of a sociocultural anthropologist. A further bias to be reckoned with is that any presentation or evaluation of the state of anthropological theory and knowledge is necessarily influenced by the nature of one's own paradigmatic commitment. In the present instance, the author is closely identified with the cultural materialist paradigm. While I seek to be objective about rival paradigms, the grounds of objectivity are themselves relative to the categorizations, puzzles ("*problematiques*"), and basic principles of one's own paradigmatic commitments (whether coherent and conscious, or incoherent and unconscious). It is without apology therefore that I begin with an overview of cultural materialism and use its categorizations, problems, and basic principles as points of comparison in the subsequent presentation of other currently important anthropological paradigms.

*To appear as a chapter in *Perspectives in Social Science: The Colorado Lectures*. Richard Jessor, ed. In press. Boulder: Westview Press.

CULTURAL MATERIALISM

Paradigms stipulate the principles which govern the conduct of research. Principles fall into two classes: rules for acquiring, testing and validating knowledge, i.e., epistemological principles; and rules for generating and evaluating theories, i.e., theoretical principles. Cultural materialism is based on certain epistemological principles which are held in common by all disciplines which claim to have scientific knowledge. Scientific knowledge is obtained by public, replicable operations (observations and logical transformations). The aim of scientific research is to formulate explanatory theories which are predictive (or retrodictive), testable (or falsifiable), parsimonious, of broad scope, and integratable within a coherent corpus. This view of science corresponds to the logical positivist and empiricist philosophical traditions and their modern critiques in the works of Popper (1965), Lakatos (1970) and Kuhn (1970, 1977).

The same criteria distinguish scientific theories which are more acceptable from those which are less acceptable. Scientific theories find acceptance in accordance with their relative powers of predictability, testability, parsimony, scope, and integratability as compared with rival theories about the same phenomena. Since these criteria can only be fulfilled asymptotically, scientific theories are held as tentative approximations, never as "facts."

There is a common misapprehension about the epistemological status of scientific paradigms that needs to be set aside before we can proceed. Neither a paradigm's epistemological or theoretical principles nor the paradigm as a whole has the status of a scientific theory. Principles such as creationism, natural selection, or infrastructural determinism are not falsifiable. This does not mean however that paradigms are "ships that pass in the night". Paradigms can be compared with each other and evaluated from two standpoints: one, their logical structure and internal coherence; and two, their respective abilities to produce scientific theories in conformity with the criteria listed above.

In addition to the general epistemological principles shared with other scientific disciplines, cultural materialism is also based on epistemological principles which are specific to the study of human sociocultural systems. These involve: 1) the separation of mental events (thoughts) from behavior (actions of body parts and their environmental effects) and 2) the separation of emic from etic views of thoughts and behavior. The reason for the epistemological distinctions between mental and behavioral events is that the operations (observational procedures) used to obtain knowledge of mental events are categorically distinct from those needed to obtain knowledge of behavioral events. In the former, observers depend on actors to communicate what is going on inside their heads; in the latter observers are not dependent on actors to identify the actor's body motions and the environmental effects of those motions. The reason for the further distinction between emic and etic events is that the separation of mental from behavioral events does not

exhaustively specify the epistemological status of the categories (data language) employed in the identification of mental or behavioral events. Observers have the option of describing both kinds of events in terms of categories that are defined, identified, and validated by the community of participants (emics) or by the community of observers (etics). Four types of knowledge stem from these distinctions: 1) Emics of Thought; 2) Emics of Behavior; 3) Etics of Behavior; 4) Etics of Thought.

To illustrate, consider the practice of indirect infanticide in Northeast Brazil : 1) A sample of economically and socially deprived mothers condemns and abhors infanticide. 2) These mothers insist that their own behavior has been devoted to sustaining the life of their infants. 3) Observers note however, that some of these mothers actually withhold food and drink from certain infants, especially from infants that are first and last born. 4) On the basis of the observed occurrence of maternal neglect and high infant mortality, it can be inferred that these disadvantaged women have thoughts that are contrary to or that modify their elicited emics of thought and behavior (adapted from Scheper Hughes 1984). Returning to participants for additional emic data may result in the elicitation of emic thought and emic behavior that correspond to the etic inferences. Emic and etic versions of social life are not necessarily contradictory (See Headland 1990 for a full discussion of the history and significance of the emic/etic distinction). But failure to distinguish between emic and etic and between mental and behavioral data renders much of the socio-cultural literature of cultural anthropology useless by literally preventing researchers from understanding what they are talking about (Harris 1968; Marano 1982).

The theoretical principles of cultural materialism rest on the assumption that certain categories of responses are important to the survival and well-being of human individuals and that it is possible to identify among such responses more and less efficient means of achieving an individual's survival and well-being. This assumption lies at the basis of the "costing" of alternative patterns of behavior which in turn is essential for identifying optimizing behavior and the development of materialist theories of sociocultural evolution.

The categories of responses whose costs and benefits underwrite cultural selection and cultural evolution are empirically derived from the biological and psychological sciences that deal with the genetically-given needs, drives, aversions, and behavioral tendencies of *Homo sapiens*. These include sex, hunger, thirst, sleep, language acquisition, need for affective nurturance, nutritional and metabolic processes, vulnerability to mental and physical disease and to stress by darkness, cold, heat, altitude, moisture, lack of air and other environmental hazards. This list is obviously not intended to encapsulate the whole of human nature. It remains open-ended and responsive to new discoveries about the human biogram and population-specific genetic differences.

Various currencies can be used to measure the costs and benefits of behavior that have optimizing consequences such as morbidity and mortality rates, differential sexual access, monetary costs and benefits, energetic inputs and outputs, and nutritional inputs and outputs. (The omission of currencies directly linked to differential reproductive success should be noted. This will be explained in the section which deals with human sociobiology.)

INFRASTRUCTURE

The components of social life which most directly mediate and facilitate the satisfaction of biogram needs, drives, aversions and behavioral tendencies constitute the causal center of sociocultural systems. The burden of this mediation is borne by the conjunction of demographic, technological, economic, and ecological processes—the modes of production and reproduction—found in every sociocultural system. More precisely, it is the etic behavioral aspect of the demo-techno-econo-environmental conjunction that is salient, and hence it would be more precise (but too cumbersome) to define the causal center as the *etic behavioral infrastructure* (or the etic behavioral modes of production and reproduction). Infrastructure constitutes the interface between nature in the form of unalterable physical, chemical and biological constraints, and culture which is *Homo sapiens'* primary means of optimizing health and well-being. It is the unalterability of the laws of physics, chemistry and biology and psychology therefore that gives infrastructure its strategic priority in the formulation of cultural materialist theories. Cultural optimizations and adaptations must in the first and last instance conform to the restraints and opportunities of the environment and of human nature.

STRUCTURE AND SUPERSTRUCTURE

In addition to infrastructure, every human sociocultural system consists of two other major subsystems: structure and superstructure, each with its mental/behavioral and emic/etic aspects. Structure denotes the domestic and political subsystems, while superstructure denotes the realm of values, aesthetics, rules, beliefs, symbols, rituals, religions, philosophies, and other forms of knowledge including science itself.

The basic theoretical principles of cultural materialism can now be stated: a) optimizations of the cost/benefits of satisfying biogram needs probabilistically (i.e., with more than chance significance) determine or (select for) changes in the etic behavioral infrastructure b) changes in the etic behavioral infrastructure probabilistically determine (select for) changes in the rest of the sociocultural system. The combination of a and b is the principle of infrastructural determinism.

As a guide to theory-making, the principle of infrastructural determinism enjoins anthropological researchers concerned with the explanation of socio-

cultural differences and similarities to concentrate on and to give priority to the formulation of hypotheses and theories in which components of the etic behavioral infrastructure are treated as independent variables while components of structure and superstructure are treated as dependent variables. The practical consequence of such a commitment of research effort is that the search for causal infrastructural variables will be conducted with decisively greater persistence and in greater detail than is likely under the auspices of alternative paradigms. The history of anthropological theory demonstrates that those who lack a paradigmatic commitment inevitably "quit early" when confronted with refractory puzzles.

A point of recurrent concern expressed by anthropologists is whether cultural materialism insists that every sociocultural difference and similarity can be explained by infrastructural determinism (Magnarella 1982). This concern is misplaced. Clearly it is very likely that *some* sociocultural traits are the consequence of arbitrary, idiographic events. Yet it is not the task of cultural materialists to search for such refractory cases. Rather it is the task of cultural materialists to examine seemingly refractory cases as they are brought to light by alternative research strategies and to concentrate on building a corpus of testable theories that is broader, more coherent, and more interpenetrating than the theories of alternative research strategies.²

Another aspect of the principal of infrastructural determinism that needs clarification is the feedback between infrastructure and structure or superstructure. Infrastructure and the other components are parts of a system characterized by negative and positive (system-maintaining and system-changing) feedbacks. To say that structure and superstructure are causally dependent on infrastructure is not to say that in the processes of continuity and change, selection pressure is exerted only from infrastructure to superstructure. Without structural and superstructural instrumentalities the infrastructural subsystem would have evolved in a radically different direction from those which we now observe. Structure and superstructure are not mere passive, epiphenomenal products; rather they actively contribute both to the continuity and change of infrastructures. But they do so within the limitations and possibilities inherent in a given set of demo-techno-econo-environmental conditions. They almost always initiate and select for change in conformity with but almost never in opposition to those conditions. To illustrate, consider the changes in U.S. family life since World War II with reference to the disappearance of the male breadwinner role, the demise of the multiparous stay-at-home housewife, and the rise of feminist ideologies emphasizing the value of sexual, economic, and intellectual independence for women. As I have proposed elsewhere (Harris, 1981a), these structural and superstructural transformations are the determined outcome of a shift from goods producing industrialism to service-and-information producing industrialism, mediated by the call-up of a reserve army of housewives into low-paying service-and-infor-

mation non-union jobs. The infrastructural transformations themselves were related to the use of electronic technologies and to declining productivity in the unionized smokestack industries which had created and sustained the male-breadwinner-stay-at-home-housewife families. The rise of a feminist ideology which glamorized the wage labor market and the intellectual, sexual, and emotional independence of women, was the determined outcome of the same infrastructural force. However, it is clear that both the structural and super-structural changes have exerted and continue to exert an amplifying, positive feedback effect on the infrastructural transformations. As the consequences of the call-up of the female labor force manifest themselves in higher divorce rates, lower first marriage rates, and historically low fertility rates, service-and-information industrialism is in turn amplified into an ever-more dominant mode of production and reproduction. Similarly, as feminist ideologies continue to raise consciousness against the vestiges of male breadwinner sexism, men and women find themselves locked into the labor force as competitors, wages for both are driven down, unions are driven out, and the profitability of the service-and-information industries rises, encouraging more diversion of capital from goods-producing enterprises into service-and-information production.

Although deviation-amplification can occur as a consequence of changes initiated in any sector of the sociocultural system, the infrastructural components remain causally dominant. Relations among the components remain causally asymmetrical because changes initiated at the structural or superstructural level are only selected for if they facilitate or help to optimize crucial aspects of the infrastructure. In the example under consideration, it is clear that neither feminism nor the demise of the breadwinner family selected the technological innovations which initiated the transformation of the smokestack infrastructure.

For proposing that changes in sociocultural systems are selected for in conformity with optimizing principles, cultural materialism has been caricatured as a form of functionalism in which all is for the best in the best of all possible worlds (Diener et al., 1978). This accusation cannot be reconciled with cultural materialism's longstanding focus on problems of class, caste, racial, and sexual inequality and exploitation (Harris, 1959; 1964, 1988; Ross, 1978a; Murray, 1980; Mencher, 1980). Indeed, the critique of Panglossian functionalism—even the coining of the phrase—is a basic preoccupation of cultural materialism (Harris, 1967: 252).

The fact that modes of production and reproduction are selected for in conformity with optimizing principles does not mean that every member of a society benefits equally from this selection process. Where marked differences of power have evolved as between sexes and stratified groups, the benefits may be distributed in a completely lopsided and exploitative fashion. Under such circumstances, the cost/benefits must be reckoned not only with respect to

individuals in their infrastructural context but with respect to the political-economic decisions of power holders. This does not mean that all changes which benefit ruling class interests necessarily have adverse effects on everyone else. For example, as indicated above, the rise of the service and information sectors in hyper-industrial mixed economies reflects the higher rates of profit to be obtained from unorganized labor. Thus, an increasing portion of the industrial labor force consists of women who have to some extent risen above their previous condition as unpaid housewife-mothers dominated by blue collar male chauvinist husbands. There is no contradiction involved in holding that the greater advantages accruing to U.S. capitalist interests are facilitated by a lesser but still favorable balance of benefits over costs accruing to women. The behavior of both strata exhibits the predicted optimizations even though one might hold that the gain for most women, especially for minority women, is slight by comparison.

Cultural materialism is thus no less emphatic about the importance of political-economic inequality as a modifier of optimization process than are various Marxist theoreticians who claim to have a monopoly on the defense of the oppressed (see below). Moreover, full recognition is given to conflicts engendered by unequal allocations of costs and benefits between stratified groups and the system-changing potential of such conflicts. One can never escape the question of benefits for whom nor of costs for whom. Far from neglecting or "covering up" the effects of political factors on optimizations, cultural materialists recognize regular systemic feedbacks from the structural to the infrastructural level which give rise to political economy, political demography, political technology, and political ecology. One cannot for example explain the adoption and spread of technological devices such as shotguns, of new varieties of wheat and rice, tractors, or solar cell generators apart from the interests of trading companies, agri-business, and petrochemical transnational corporations, local landowners, banks, etc.

Infrastructural determinism has frequently been criticized as a teleological principle that denies the importance of stochastic processes in evolution. This is clearly an incorrect portrayal, given the formulation of causality in terms of selection processes. B. F. Skinner (1984) has appropriately designated the genre of evolutionary process in question as *selection by consequences*. In biological evolution, in operant behavior conditioning and in cultural evolution, selection operates on variations whose origins may be indeterminate. Cultural materialism is thus no more teleological than Darwinian evolutionism. In this limited sense, cultural evolution is analogous to biological evolution (and to the development of individual learning repertoires). As in biological evolution, there is innovation and selection for or against. Innovations occur at massive rates in socially conditioned human response repertoires (culture). Some are selected for (retained, and propagated across generations), others are selected against (extinguished). Selection for or

against is probabilistically determined by the infrastructural consequences (costs and benefits) of the innovative behavior.

Despite this analogy, there are specific differences in the mechanisms of selection by consequences which characterize biological and cultural evolution. Selected biological innovations are stored in the form of information in the organism's genome; selected cultural innovations are stored in the form of response repertoires in the organism's neural pathways. It is this difference that dooms the attempts to reduce sociocultural phenomena to the level of biology (see below).

Additional aspects of cultural materialism will be clarified during the discussion of alternative paradigms.

CULTURAL IDEALISM

Historically, the most fundamental schism in anthropology (and the other social sciences) is that between materialist and idealist paradigms. Materialist paradigms (of which cultural materialism is an example) give causal priority to etic behavioral infrastructural conditions; idealist paradigms give causal priority to the mental and emic components of superstructure. Idealist paradigms flourished in the 19th century as a heritage of the Enlightenment. Hegel's notion of a world historical spirit struggling to achieve freedom through the perfection of human reason exemplifies a genuine full-blown form of superstructural determinism. For Hegel, world historical stages of thought create successive forms of politics in which no one is free, only one man is free, and finally all are free. In the same genre, Auguste Comte attributed the progressive evolution of society to the replacement of religious ideologies by metaphysical ideologies and of metaphysical ideologies by science. Similarly, Lewis Henry Morgan (1877: 59-60) attributed the passage from savagery to barbarism to civilization to the maturation of "a few germs of thought conceived in the early ages."

These determinist forms of cultural idealism have been thoroughly discredited. Hunter-collectors, for example, had more "freedom" than citizens of modern states. Without metaphysical excuses such as world spirit or germ thoughts, ideas do not follow each other in any necessary progression, apart from their materialization in artifacts and behavior. Nothing restrains individuals who are living in patrilineal societies from thinking it would be nice to live in matrilineal societies or vice versa. Uncountable numbers of innovative thoughts pour through people's heads. How are they selected for or against? Apart from their support by world spirits, rationality, "progress," or similar discredited teleological concepts, there is no basis in cultural idealism for explaining why certain ideas are selected for in one society but selected against in another, nor for explaining the astonishing recurrence of vast categories of social arrangements which we summarize under such concepts as bands, tribes, chiefdoms, states, etc.

INTERPRETIVE, PHENOMENOLOGICAL AND POST MODERNIST ANTHROPOLOGY

Few modern anthropologists consistently adhere to a pure form of super-structural determinism. This does not mean that there is a dearth of idealists and mentalists in the anthropological vineyards. On the contrary, late 20th century cultural anthropology is permeated by idealist and mentalist thought and practice, starting with the very concept of culture itself, which is widely defined as a set of mental rules. These rules supposedly find expression in behavior, while behavior itself is not deemed part of culture (see Harris, 1980, for a critical history of this definition of culture). What prevents these idealist tendencies from developing into full-fledged cultural idealist paradigms is that contemporary anthropological idealists and mentalists are, with few exceptions, anti-positivists and anti-determinists. Indeed their "approach" is overtly (and often aggressively) antiscientific in the sense that they deny the validity of the canons of operational replicability, testability, parsimony, and theoretical coherence. Their paradigm—if it can be called such—claims that the social sciences lack legitimacy and should dissolve themselves back into the humanities where anthropological knowledge is limited to artful descriptions which have the capacity to tell outsiders what social life means to insiders. For these "humanists" (read idealists, phenomenologists) testability, replicability, causation, determinism, prediction, retrodiction, nomothetic recurrences, and etic behavioral events are all will-o-the-wisps born of an infantile desire to ape the "hard" sciences.

Clifford Geertz, generally recognized as a pre-eminent guru of interpretive genres, is an advocate of making "thick descriptions" the main if not the exclusive objective of the fieldwork of cultural anthropologists. Thick descriptions are intended to provide detailed contexts of significations and meanings without which one culture cannot be interpreted to another. According to Geertz, generalization "grows out of the delicacy of its distinctions, not the sweep of its abstractions" (Geertz 1973: 25). While Geertz recognizes that the "sin of interpretive approaches . . . is that they tend to resist or to be permitted to resist, conceptual articulation and thus to escape systematic modes of assessment" (ibid.: 24), his suggestion for telling the difference between a good and a bad interpretation scarcely seems to be aimed at absolution from the aforementioned "sin": ". . . a good interpretation of anything—a poem, a person, a history, a ritual, an institution, a society—takes us into the heart of that of which it is the interpretation" (ibid.: 18). But how shall we know we have found the heart and not the liver?

Despite this unrepentant affirmation of resistance to "conceptual articulation", Geertz insists he is committed to methodology: "I think it is terribly important" (Geertz, 1979: 7). He has a methodology, every good piece of scholarship has a methodology, he maintains. But his methodology is unlike the methodologies of science-aping positivists who teach their research techniques

to their students: "... I do not think there is any way simply to transfer techniques that I have to a student. That is not what teaching in this area is, and that is not what good students are looking for" (ibid.).

The sad prospect raised by Geertz's obscurantist creed (to be discussed at the end of this essay) is that anthropology may indeed soon dissolve itself into oblivion. Not into Geertzian *belles lettres* but into a branch of biology whose practitioners are convinced that sociocultural evolution is too important a subject to leave to people who boast that they have no methods, or testable or replicable knowledge to pass on to their students.

It should be made clear that cultural materialists are not antagonistic to arbitrary, literary, or phenomenological interpretations. The true sin of Geertzian anthropology is not that it rejects the epistemological basis of modern science—there are many ways of knowing—but that it explicitly represents itself as a superior way of knowing the social world, and as an explicit replacement for positive social science, which it characterizes as a deluded and bankrupt intellectual effort. As Shankman writes (1984: 264-265):

Geertz... views interpretive theory not merely as a legitimate alternative to conventional social science, seeking parity with it, but rather as a theoretical framework that will "challenge" and ultimately replace the tired mechanistic, reductionist approach of positivism with a "refiguration of social thought. "That is, he suggests that interpretive theory is superior to conventional social science, arguing that the road to discovering the causes and effects of social phenomena "lies less through postulating forces and measuring them than through noting expressions and inspecting them."

The denunciatory animus of interpretationists and symbolists toward positivist paradigms ill-becomes scholars who claim to be interested in the phenomenology of human experience. For the Geertzian condemnation of "conventional social science" [that it is "uncritical of its own shortcomings" and "ill-suited to the treatment of semantically complicated observation" (Davis, 1985: 285), productive of "tired," "paltry" theories (Dutton, 1984) places itself on the exterior rather than the interior of scientific projects. The only way that such statements can be meaningful to those who follow the rules of science is by following the rules of science. To reiterate, non-scientific paradigms remain immune to scientific criticism if they do not claim to know better what science claims to know.

Following Geertz's lead and under the direct influence of post-modern philosophers and literary critics such as Paul DeMan, Jaques Derrida, and Michel Foucault, interpretationist anthropologists have adopted an increasingly apodictic, arrogant, and intollerant rhetoric aimed at ridding the world of all "totalizing" paradigms. According to Stephen Tyler (1986: 130) for example, sociocultural anthropologists should abandon

"... the inappropriate mode of scientific rhetoric that entails 'objects', 'facts', 'descriptions', 'inductions', 'generalizations', 'verification',

'experiment', 'truth', and like concepts that, except as empty invocations, have no parallels either in the experience of ethnographic fieldwork or in the writing of ethnographies. The urge to conform to the canons of scientific rhetoric has made the easy realism of natural history the dominant mode of ethnographic prose, but it has been an illusory realism, promoting, on the one hand, the absurdity of 'describing' nonentities such as 'culture' or 'society' as if they were fully observable, though somewhat ungainly, bugs, and, on the other, the equally ridiculous behaviorist pretense of 'describing' repetitive patterns in isolation from the discourse that actors use in constituting and situating their action, and all in simpleminded surety that the observers' grounding discourse is itself an objective form sufficient to the task of describing acts."

Tyler's totalizing renunciation of the search for objects, facts, descriptions, inductions, generalizations, verification, experiment, truth, and "*like concepts*" (!) in human affairs mocks itself so effectively, that any attempt at rebuttal would be anticlimactic. I do think it may be useful however, to point out that the "simpleminded surety" with which positivists and behaviorists are alleged to view human social life flagrantly distorts the entire history of science in general, during which all sureties, simple-minded or not, have been subject to relentless scepticism, and the history of logical positivism in particular, during which the struggle to create objective data languages has constituted the central focus of a vast and continuing philosophical effort.

POST PROCESSUALISM

The rhetoric of post modern literary criticism is not confined to cultural anthropology. It slogans and mottos have also appeared among archaeologists who identify their perspective as "post processual", "symbolic" and "structural". Richard Watson (n.d.) has aptly summed up the project of the more extreme varieties of post processualists in the following terms:

"They use deconstructionist sceptical arguments to conclude that there is no objective past and that our representations of the past are only texts that we produce on the basis of our socio-political standpoints. In effect, they argue that there is no objective world, that the world itself is a text that human beings produce."

According to Ian Hodder, the leading although not the most extreme figure among post processual archaeologists, nomothetic and evolutionary archaeological theory is defective because it fails to deal with "the meaningful construction of social acts and the historical particularity of human culture (Hodder 1985:22). Rather than pursue a research strategy which envisions the possibility of giving nomothetic answers to questions about the origins and causes of sociocultural differences and similarities, post processual archaeology is committed to a strategy which regards the origins and causes of cultural

differences and similarities as fundamentally unknowable. Like a pre-Darwinian propounding the doctrine of immutable species, Hodder (1986:2) claims that

"Cultures ...are arbitrary in the sense that their forms and content are not determined by anything outside of themselves... Culture then is not reducible, It just is."

In *Reconstructing Archaeology*, Michael Shanks and Christopher Shanks (1987) are not mollified by the proposal that probabilistic forms of generalization, rather than exceptionless laws, constitute the goal of positivist socio-cultural science. They ask how general a statement must be before it counts as a generalization: "...two cases? three? fifty?" They also ask:

"If the generalizations made are not laws they cannot be expected to be applicable in any particular case so why are these generalizations of use to us? Why must the business of doing science necessarily be equated with the ability, or the will to generalize? This appears to be a procedural rule founded on the basis that generalizing, rather than considering all the particularity of the individual case, is a superior kind of activity. There seems to be no compelling reason why we should accept this." (ibid.: 38)

The fallacies that embolden these queries are so transparent that one must wonder if the interlocutors really intend to be taken seriously. (This is a serious concern on my part since Derrida and his followers are not above celebrating the ludic consequences of deconstructionism.) Yet given the current popularity of antiscientism, their questions, serious or not, cannot be left unanswered.

Question: Just how often does something have to recur in order for it to serve as the basis for a generalization?

Answer: The more times the better.

Question: If generalizations cannot be expected to be applicable to any specific case, what good are they?

Answer: The better the generalization, the more probable its applicability to the particular case. (It is certainly useful to know that a particular person who smokes four packs of cigarettes a day is ten times more likely to get lung cancer than one who doesn't smoke, even though not all heavy smokers do get lung cancer.)

Question: Why must science be equated with generalizing?

Answer: Because science is by definition a generalizing form of knowledge.

Question: Is the mandate to generalize nothing but a "procedural rule"?

Answer: Of course. And anyone is free to ignore the rule but to do so is to cease to be doing science. (It is also likely to get you killed the next time you step off the curb against the light, or the next time you light a match to look inside your gas tank.)

Last question: Instead of generalizing, why not consider "*all the particularity of the individual case*"?

Answer: Because there are no limits to particularity. Any project that proposes to deliver *all* the particularities of any macrophysical event, human or not human, therefore makes a preposterous claim on our time and resources. For this reason, in science, endless particularity is the exact equivalent of endless ignorance.

A recurrent claim of both sociocultural interpretationists and postprocessual archaeologists is that positivist anthropology deservedly collapsed because of its failure to produce a coherent body of scientific knowledge about society and culture. According to George Marcus and Michael Fischer for example, there is a crisis in anthropology and related fields because of the "disarray" in the "attempt to build general and comprehensive theories that would subsume all piecemeal research" (1986: 118). This implies that the Geertzians and post processualists have made a systematic study of the positivist corpus of theories that deal with the parallel and convergent evolution of sociocultural systems. But they have not done this. It was only after World War II that non-biological positivist cultural and archaeological paradigms gained acceptance among anthropologists. Yet in the ensuing years unprecedented strides have been made in solving the puzzles of sociocultural evolution through a genuinely cumulative and broadening corpus of sophisticated and powerful theories based on vastly improved and expanded research methods. The cumulative expansion of knowledge has been especially marked within archaeology and at the interface between archaeology and cultural anthropology (e.g. Johnson and Earle, 1987). It is ironic then, that at the very moment when anthropology is achieving its greatest scientific success, anthropologists who have never tested the positivist theoretical corpus which they condemn, hail the death of positivist anthropology and the birth of a "new" humanistic paradigm. Only those who know little about the history of anthropological theories could hail such a paradigm as "new," much less as "a refiguration of social thought." As Regna Darnell (1985: 271) states,

"Geertz's kind of anthropology has been around since the German idealist philosophers to whom its roots are traced. Franz Boas himself had intellectual roots in that tradition, taking for granted the inseparability of perceiver and perceived (Darnell, 1984: 271)."

This raises the question of why anti-positivistic humanism has become so attractive to a new generation of anthropologists (and other practitioners of social "science"). One reason may be that the generation of students reared during the 1960s and early 1970s continues to believe that positivist social science is responsible for such 20th century scourges as fascism, Stalinism, U.S. imperialism, corpocracies, and the educational-industrial-military complex. (The feminist rejection of positivist science as an andocentric conspiracy is another reason for the surge of post modernism in anthropology—see below.)

No doubt hyperindustrialism, high-tech, and the "technological fix" lead to feelings of dehumanization and alienation. But the association between all of this and positivist social science is spurious. The problem is not that we have had too much of positivist social science but that we have had too little (Harris, 1974: 264ff). The atrocities of the 20th century have been carried out precisely by people who were ignorant of or vehemently opposed to positivist social science (e.g., Lenin, Stalin, Hitler, Mussolini). Too many anthropologists seem to have forgotten that there is a flip side to relativism, phenomenology, and anti-positivism—the side on which relativists who denounce reason and scientific knowledge construct the world in their own image. Benito Mussolini put it this way:

Fascism is a super-relativistic movement because it has never attempted to clothe its complicated and powerful mental attitude with a definite program but has succeeded by following its ever changing individual intuition. Everything I have said and done in these last years is relativism by intuition. . . . If relativism signifies contempt for fixed categories and men who claim to be bearers of an external objective truth . . . then there is nothing more relativistic than Fascist attitudes and activity. . . . From the fact that all ideologies are of equal value, that all ideologies are mere fictions, the modern relativist deduces that everybody is free to create for himself his own ideology and to attempt to carry it out with all possible energy (quoted in Ross, 1980: xxvii).

The proposal that there is an association between anti-science relativism and fascism cannot be dismissed as a mere intellectual scare tactic. Mussolini's fascist philosophy borrowed heavily from Freiderich Nietzsche, especially the latter's concept of the "will to power" as the source of truth. Paul de Man, who was as important as Derrida in the developement of deconstructionism, warmed up for his role as literary critic by studying Nietzsche and by broadcasting propaganda for the Nazis during World War II, a fact which he effectively concealed from his colleagues at Yale until 1988 (Lehman 1988). And Michel Foucault, the post modernist whose cachet among anthropologists is ascendant, is also much indebted to Nietzsche as his aphorism "another power, another knowledge" reveals (Foucault 1979 quoted in Hoy 1986: 133).

FEMINISM

Feminist anthropology is a distinct intellectual tradition that seeks to establish a balance between androcentric and gynocentric perspectives, theories, and data bases (Moore 1988; Morgen 1989; Mukhopahyay). In view of the virtual hegemony of androcentrism in anthropology during the first sixty or seventy years of this century, it is not surprizing that feminism in practice often seems to give way to an attempt to substitute gynocentrism for androcentrism. It would require much more than the available space, to begin to review the strengths and weaknesses of the specific modifications of anthropological data

bases and theories that have been introduced under feminist auspices or in response to feminist critiques. But there is a general point that must be made if one is to understand the surge in post modernist anti-scientism and relativism. The corpus of positivist-scientist theories about gender issues was impoverished when not grossly counterfactual, prior to the rise of feminism. Feminists therefore tended to identify science with androcentrism. They saw scientific theories as male concoctions designed to confuse and disempower women. There was a parallel reaction to Marxism, with its claim that it was a science of society while focussing on class exploitation to the neglect of gender exploitation. In this context, post modernist attacks on the distinction between the observer and the observed and the advocacy of the idea that truth is relative and a political construction, seemed to constitute an appropriate paradigm for carrying out the feminist project in anthropology. (Some feminists argue that these perspectives had an independent and antecedent development within feminism itself [Mascia-Lees, Sharpe, and Cohen 1989]). From a cultural materialist perspective however, the feminist response to past inadequacies of positivist formulations of gender, is both intellectually and politically counter-productive. In the long run anthropological feminism has little to gain by throwing its weight on the antiscience side. Scientific anthropology is completely open to feminist researchers and to their contribution to the improvement of anthropological theories in any domain of their choice. The most productive intellectual response to the exposure of biases, hidden agendas, and lack of certainties in anthropology is not to adopt paradigms that from the outset promise even greater biases, more cryptic agendas, and total uncertainty. Rather it is to work within scientific paradigms to reduce biases, expose hidden agendas, and decrease uncertainties. For feminists whose political interest are foremost, adoption of the postmodern program portends unintended social consequences in which women are hurt more than they are helped. Some examples: the relation between no-fault divorce laws and the feminization of poverty; the relation between the feminization of the labor force and the increased marginalization of Afro-American males with its contribution to the multiplication of impoverished black female-headed households; the low priority given by middle class feminists to unionization and the falling take-home pay of both male and female wage earners. Like the failure of Soviet Marxist theoreticians to calculate the objective extent of the inefficiency of their command economy (see below), these are not problems that can be identified, much less solved, by musing about the relativity of truth, or the non-existence of such things as facts.

ECLECTICISM

Eclecticism is based on the principle that causal priorities shift from infrastructure to structure or superstructure relative to the society or topic being studied, or that all the components of sociocultural systems—infrastructure, structure, and superstructure—are simultaneously and equally determinative

of differences and similarities. In the history of the social sciences, Max Weber is the preeminent advocate of eclecticism as an alternative to idealism and materialism. Weber felt that both Hegel and Marx had erred in not seeing that in some societies, such as India or Medieval Europe, it was religion that played the dominant role, while in other societies such as 20th century Europe, it was economics that played the dominant role. In his most famous eclectic foray, Weber set out to correct Marx's materialism by showing that as much weight had to be given to the "Protestant ethic" as to the expansion of commerce in explaining the rise of capitalism. Weberian eclecticism has recently replaced Marxian materialism in the work of European anthropologists who call themselves "Marxists" (see below).

Eclecticism achieved its paradigmatic eminence in anthropology through the work of Franz Boas and his students. The Boasian rejection of causal priorities valid for all sociocultural systems continues to serve as a model for current eclectic advocacy. Boasian eclecticism was also rooted in a conscious rejection of Marxist historical materialism. Hence it was expressed primarily in negative form as the rejection of any necessary causal connection between infrastructural and structural or superstructural components.

"There is no reason to call all other phases of culture a superstructure on an economic basis, for economic conditions always act on a preexisting culture and are themselves dependent upon other aspects of culture. It is no more justifiable to say that social structure is determined by economic forms than to claim the reverse, for a preexisting social structure will influence economic conditions and vice versa, and no people has ever been observed that has no social structure and that is not subject to economic conditions. The claim that economic stresses preceded every other manifestation of cultural life and exerted their influences on a group without any cultural traits cannot be maintained. Cultural life is always economically conditioned and economics are always culturally conditioned" (Boas, 1948:193).

As we shall see below, many self-identified new Marxists would find little to dispute in this formulation.

While it claimed to be based on high standards of ethnographic data collection, Boasian eclecticism rose to reckless levels of negativity on the basis of an incomplete knowledge of ethnographic "facts." According to Boas there was no *possibility* that art, ritual or religion could regularly be caused by anything like economics: "We do not see how art styles, the form of ritual or the special forms of religious belief could possibly be derived from economic forces," he wrote (1948: 256). Nor could there possibly be any recurrent relationship between economics and political organization: "We have simple industries and complex organization," and "diverse industries and complex organization" (ibid.: 266). As for a geographical (environmental) basis: "It is fruitless to try to explain culture in geographical terms" (ibid.). It is also fruitless to try to link

demographics, settlement patterns, or economic statuses with social organization: "There is no evidence that density of population, stability of location, or economic status is necessarily connected with a particular system of relationship [kinship relations] and of behavior connected with it" (Boas, 1938: 680).

The most intrepid Boasian critic of infrastructural determinism was Robert Lowie (1920). Ranging over the entire ethnographic literature, Lowie cited example upon example of traits and institutions that appeared to be inexplicable from a materialist viewpoint: class stratification and irrational destruction of property among the hunting-gathering Nootka; private land holdings among the hunting-gathering Algonkians, Veddas, and Queensland aborigines; warfare among the Crow and other Plains Indians for the prestige that came from acts of bravado; rejection of milk by the Chinese for aesthetic reasons; failure of the Shilluk, Zulu, and other African peoples to use their cattle for meat except on festive occasions; greater attention paid by such peoples to twisting the horns of their cattle into "grotesque shapes" than to their economic utility; pigs raised in Melanesia "without noticeably adding to mass subsistence;" horses eaten but not milked in Western Europe; pigs raised in Egypt "with not one practical purpose"; aborigines keeping the dingo as a pet "without training it to catch game or render any service whatsoever."

Lowie's problem is that he lacked any firm commitment to the possibility of infrastructural explanations of these apparent aberrations. The consequence was that he "quit early" (see above), never probing deep enough into the data to form plausible hypotheses (see Harris, 1968, 1979, 1985, for such hypotheses).

Despite Lowie's emphasis on the dominance of structural and superstructural components in specific cases, he readily admitted that in other cases, infrastructure (which he restricted to "economic factors") was dominant: "I have pointed out the potency of economic forces, not in abstract, which is hardly necessary nowadays, but by suggesting that certain specific changes in economic life have led to specific modifications in the social life, even affecting sentimental attitudes (1948: v). "Vacillation between no determinism and one form of determinism or another is the essence of eclecticism. From this vacillation the great weakness of eclecticism arises: its inability to produce logically coherent theories of broad scope much less a corpus of integrated and interpenetrating logically coherent theories.

As another example of the results inherent in eclecticism, consider the work of Raoul Naroll. In discussing the option of explaining human behavior in terms of genes, climate, diet, pathology, roles, values, social relationships or "psychogenic" factors, Naroll states: "It seems clear to me that each of these modes of explanation is sometimes important; conscientious behavioral scientists seeking to explain culture cannot a priori rule out any one of them" (1973: 348). The predictable contradictory effects of this principle can be illustrated by Naroll's explanation of why crime (theft and personal assault) is more

common in some cultures than in others. His explanation is that theft and personal assault are "more frequent where opportunity for the young boy to identify himself with his father was limited or absent altogether" (Naroll, 1973: 346). Yet the theory that crime is caused by the absence of fathers is fundamentally misleading. Obviously there are other factors in theft and assault that are not implicated in Naroll's theory--such factors as class, ethnic, and racial conflicts, glaring wealth differences, unemployment and urban decay. To be sure, Naroll's theory does not state that the absence of fathers is the only cause of theft and assault. But it leaves the question of what these other factors are and what weight they should be given entirely unexamined. It remains a likely possibility, therefore, that other variables can completely cancel out or even contradict the association that Naroll stresses. Indeed, this is borne out by Naroll's explanation of internal war--which follows immediately after the discussion of crime. According to Naroll, in primitive societies, "strong internal conflict such as feuding . . . stems from the presence of localized groups of related males who support one another in conflict situations" (ibid.: 346). Now these "fraternal interest groups" include fathers and sons. Hence this theory manifestly contradicts the previous one, which in effect attributes a high incidence of violent assaults to the absence of fathers. Present fathers in one case and absent fathers in the other; both lead to violent assaults. The theory that absent fathers lead to belligerent sons might be improved by adding the proviso "except in band and village societies". But many other provisos are needed. The effect of father's absence upon juvenile assault rates is modified by whether residence is urban or rural; by whether we are talking about capitalist or socialist economies; by whether there are superordinate or subordinate classes, castes, and ethnic statuses; and so forth. In other words, the theory that crime is caused by absent fathers is a middle-range theory which can be saved from falsification only by drastically restricting its range of applicability. Such a theory explains neither crime and violence nor relationships between fathers and sons.

Let me offer another instance of the quandary of eclecticism, this time from the work of George Foster. According to Foster (1967), the peasants of Tzintzuntzan, a village in the Tarascan region of Mexico, are the victims of an emic and mental complex which he calls the "Image of Limited Good." This *image* consists of a set of values, attitudes, and beliefs to the effect that life must always be a dreary struggle, that very few people can achieve "success," and that those who achieve success do so at the expense of other people:

"By Image of Limited Good, I mean that . . . Tzintzuntzenos see their social, economic, and natural universes [their total environment] as one in which all desired things in life such as land, other forms of wealth, health, friendship, love, manliness, honor, respect, power, influence, security, and safety *exist in absolute quantities insufficient to fill even minimal needs of villagers*. . . . Consequently . . . it follows that

an individual or a family can improve its position only at the expense of others. . . . Hence . . . any significant improvement is perceived . . . as a threat to all individuals and families" (ibid.: 123-124).

Foster's study is concerned in its entirety with showing how this cognitive orientation expresses itself in every domain of village life. Speaking like a cultural idealist, Foster declares:

The first, and basic argument advanced in these pages, from which the other arguments follow, is that all normative group behavior [the culture of every society] is a function of a particular *understanding* of the conditions that delimit and determine life, a correlate of certain implicit *assumptions*, of which the average person is totally unaware. In Tzintzuntzan (and in other peasant societies), this "particular understanding" can be described by the Image of Limited Good (ibid.: 35; italics added).

Continuing in the same emic superstructuralist vein, Foster claims that if the changes that are going on in Mexico are going to lead to a "better and happier life for Tzintzuntzenos," instead of to "social unrest," then the first thing that must be gotten rid of is the *image*:

"Hence in listing the fundamental factors which hold back the village, and which must be solved if the first of our two alternative futures [better and happier life] is to be achieved, we must put at or near the top increasingly outdated assumptions about conditions that govern life" (ibid.).

This conviction, however, does not prevent Foster on the very same page from assuring us that the *image* is *not* "the major factor holding back Tzintzuntzan and other peasant villages" (ibid.). Invoking infrastructural factors, he goes on to declare that the "village's inherent economic potential, its natural resources, its geographical location, the national and international demand for its present and its potential products, and its population growth . . . is the key factor" (ibid., 351; italics added). (If that is the case, why then did Foster devote his book to the study of the *image*? Why did he not study the "inherent economic potential," "geographical location," the national and international markets, and so forth?)

Noting that it is the *image* and not the infrastructure that Foster discusses, James Acheson (1972) takes Foster to task for exaggerating the superstructural and emic variables in underdevelopment. Acheson shows on the basis of his own research in another Tarascan community that when economic opportunities are present in the infrastructure, the "image" does not prevent people from taking advantage of them. Defending himself, Foster says he holds with Acheson "that the primary reasons that most individuals do not act to raise per capita income is that no opportunities exist" (Foster, 1974: 55).

But in the very next paragraph, Foster once again contradicts himself:

Acheson's understanding of the economic motivation, however, is unnecessarily limiting. He fails to recognize that the bare presence of

economic opportunity alone is not what counts. It is the *perception* of this opportunity, the *recognition* of its possibilities on the part of the *entrepreneur*, his basic ability, and the absence of sociocultural and personality factors sufficiently strong to dissuade him from action that converts the potential of the situation into an actuality (Ibid.: 55-56).

Foster then reaffirms his commitment to eclecticism. We shall never formulate development theory from "simplistic economic explanations alone, but from careful, cautious, broadly based analyses of all the economic, political, historical, social and psychological factors that are at play in modern Mexico" (ibid.: 57). Unfortunately, no one can study all the economic, political, historical, social and psychological factors at play in modern Mexico! And even if one could, the result would lack any organizing principle and hopelessly confound the dependent and independent variables for reasons that I have already touched on in discussing post processual archaeology. In sum, eclecticism is akin to a naive faith in the power of unorganized inquiry to produce coherent knowledge. But why doesn't the jumble of isolated and contradictory theories hitherto produced under eclectic auspices act as a deterrent? Because it is believed that with the passage of time and the accumulation of more data, a more unified vision will emerge. If this does not happen, then one can conclude that the chaotic condition of theory is faithful to the disorderly nature of human phenomena. (At this point, eclecticism helps to set the stage for post-modernism -- indeed, the Geertzian and postprocessualist disparagement of positivist anthropology cannot be refuted by appeal to any set of eclectic theories). It seems clear, however, that the larger the number of eclectic theories, the more incoherent the corpus, and that the orderliness of nature and culture reveals itself only to those who look for it in an orderly manner (see Sanderson 1987 for a parallel critique of eclecticism in sociology).

THE NEW MARXIST ANTHROPOLOGY

Cultural materialism has been heavily influenced by the work of Marx and Engels and by the pre-Leninist and pre-Stalinist Marxist theoreticians Karl Kautsky (1988) and Georgii Plekhanov (1940). Because of the salience of the principle of infrastructural determinism, it would not be inaccurate to describe cultural materialism as an indigenous American variety of Marxist anthropology. One might expect that because of cultural materialism's clearly stated recognition of the importance of pre-Stalinist Marxism for anthropological theory (Harris, 1968, 1980), post-Stalinist European Marxist anthropologists who also reject the Marxism of the Stalin era (if not Leninism as well) would find it appropriate to engage in a constructive dialogue with cultural materialists. Nothing of the kind has occurred. To the contrary, European neo-Marxists have from the outset regarded cultural materialism as an anathema worse than idealism, eclecticism, or any other avowedly non-Marxist or even anti-Marxist anthropological paradigm. To the self-appointed true followers of

Marx, cultural materialism is a "crass," "one dimensional," "crude," "vulgar," "mechanical" blot on human thought. (All these adjectives are regularly used to describe cultural materialism by contemporary Marxist anthropologists). Despite the obvious relationships between infrastructural determinism and Marx's up-ending of Hegel's causal relationship between ideas and material conditions —called by Marx and Engels, "base" and "superstructure"—, Europe's neoMarxist anthropologists insist that "there is nothing in [cultural materialism] which is particularly Marxist" (Bloch, 1985: 135).

Paradigms are to be judged by their intellectual achievements, not by their intellectual pedigree. Nonetheless, the reasons why European neo-Marxists find cultural materialism abhorrent is essential for understanding the distinctive aspects of their paradigmatic commitment. Western European Marxist anthropology is based on the premise, never conceded by Leninists and Stalinists, that Marx and Engels' treatment of so-called pre-capitalist formations, and especially their treatment of band, village, and chiefdom societies, was fatally flawed. According to the Communist Manifesto, "the history of all hitherto existing society is the history of class struggle." While this aphorism served to stoke the flames of revolutionary sentiment, it was clearly either in error or inapplicable to the span of pre-history which encompasses the most common experience of the greatest number of human beings who have ever lived. There were no social classes as Marx and Engels understood classes to be during this vast span of sociocultural evolution, a fact which Engels acknowledged in the 1888 edition of the *Manifesto* with his famous footnote: "That is, all written history". Marx turned his attention to filling this great hole in his science of history only during his last years. On reading Lewis Henry Morgan's *Ancient Society* (orig. 1877), Marx received an impression of prehistory which appeared to be at once authentic and readily capable of a materialist interpretation. (Morgan himself was no materialist —see above). Marx died before his marginal notes in *Ancient Society* could be made into a book. It fell to Engels alone, therefore, to complete the first Marxist foray into prehistory and ethnography, "*The Origin of the Family, Private Property and the State*". Morgan's stages of sociocultural evolution were associated with technological markers —bows and arrows for upper savagery; pottery for barbarism, metallurgy for upper barbarism; writing for civilization. Engels elevated these technological markers into causal agents, as the replacements for class struggle. Furthermore he shared with Morgan and virtually all 20th century anthropologists an inability to distinguish cultural selection from natural selection. Thus, in explaining the crucial transition from the supposed early forms of incestuous matings to the exogamous mating system of the gens (matri-sibs), both Engels and Morgan invoked alleged biological benefits of "outbreeding." Block (1985: 96) is therefore correct in his view that Engels, followed by Marxists in general up until the end of the Stalinist period, saw the pre-class epoch of human history as subject to a form of causality which ceased to be the principal

engine of change after the appearance of societies with classes and class struggles. Block is also analytically correct when he sees both post-Stalinist Western European Marxist anthropology and cultural materialism as attempting to substitute a single set of causal principles applicable to pre-stratified and post-stratified societies for the double set found in Engels' "*Origin of the Family, Private Property and the State*" (1954b). Block's next maneuver, however, is unacceptable. He attempts to write off the mixture of technological and biological determinism in Engels' book—one of the most important pillars of *dialectical* materialism until the end of the Stalin epoch—as "vulgar materialism" (Block, 1985: 97), the very same "vulgar materialism" which cultural materialists allegedly practice in lieu of real Marxist materialism. This simply will not do, since it was Engels more than anyone else who was responsible for dividing the world into good materialists (dialectical materialists) and bad materialists (mechanical and vulgar materialists) and for making the distinction a central part of the communist world view. Engels devoted two books—*Anti-Duhring* (1947, orig. 1888) and *Dialectics of Nature* (1954a, orig. 1878)—to proving that a dialectical (nonmechanical, non-vulgar) mode of analysis not only provided the key to the understanding of *all* sociocultural phenomena but of all biological and physical phenomena as well.

Not content with calling Engels a vulgar materialist, Block sweeps on to another consummate act of intellectual treachery and tries to link cultural materialism to Darwinian principles as espoused by Morgan, Engels, and other late 19th century evolutionists: "Harris's Marxism is only nineteenth-century Darwinism" (Block 1985: 133). On the contrary, infrastructural determinism resembles the principle of natural selection only to the extent that both are examples of selection by consequences (see above). Cultural materialists regard the Darwinian principle of natural selection as essential for understanding the processes responsible for the origin of *Homo sapiens'* unique ability to adapt through cultural traditions, but once the capacity for culture was achieved, sociocultural systems evolved through infrastructural determinism which is explicitly phrased as being largely independent of gene-culture feedback and of currencies that measure reproductive success. Cultural materialism shares nothing with Morgan's and Engels' biological reductionism. If Darwinism lies at the roots of cultural materialism, what accounts for the antagonistic postures of cultural materialism and sociobiology (see below)?

A further contemporary Marxist fantasy regarding cultural materialism is that it "extended forward" Engels' analysis of primitive societies to include class stratified societies. This has already resulted in "a theory [sic] where human institutions and concepts are seen as the direct results of natural circumstances" (ibid.: 133). Thus, "What Harris means by materialism is that the ideas by which men [sic] live have no importance for their action" (ibid.: 134).

Concern with showing that good materialism acknowledges the "ideas by which men live", while bad materialism sees ideas as irrelevant, Peter Worsley

(1984: 28-29) likewise declares that the economic base is no more "material" than "cognitive knowledge" and "norms of behavior". But which materialist has ever asserted that some portions of the known universe are more "material" than others? Certainly cultural materialists have no interest in this absurd distinction. Materialist paradigms are opposed to idealistic paradigms, as discussed earlier, with respect to the relative causal priorities of infrastructure and superstructure in selection for and against sociocultural innovations, not in terms of whether ideas are material or "have no importance". Kicking the vulgar straw materialists again, Worsley declares: "It is therefore simply not true that man [sic] must eat before he [sic] can think. People would not find food at all if they did not think" (ibid.: 36). It would be pointless to pursue the question of whether less brainy primates than *Homo sapiens* have to think to eat (perhaps even invertebrates have some kind of "thoughts"). But it is an anthropology not a biology lesson that Worsley needs. The essential point is that while humans might manage to eat with a good deal less thought than we give to it, the fact is that we live not by actions nor by thoughts, but by sociocultural systems in which both thoughts and actions have vital roles to play.

The new Marxists' attempt to portray cultural materialism as a paradigm in which ideas count for nothing is totally at variance with the prominence of the phrase "sociocultural system" in the specification of cultural materialist principles. Why does one bother to talk about the systemic role of structure and superstructure if infrastructure alone has importance for action? Do cultural materialists propose that people go about producing and reproducing at random and without an idea in their heads? Could sociocultural life as we know it exist if there was nothing but infrastructure? Certainly not. No more than one can imagine people living without an infrastructure—living on ideas alone. Boas (see above) was absolutely right when he noted that "no people has ever been observed that has no social structure." But who has ever been so certifiably insane as to suggest the contrary? To say that humans must think to live, however, is to say nothing about the roles of behavior and thought in the processes responsible for sociocultural evolution. The issue is not whether thought is important for action, but whether thoughts and actions are equally important in the explanation of the evolution of sociocultural systems. Cultural materialism—indeed any genuinely materialist paradigm in the social sciences—say no. The system is asymmetrical. Infrastructural variables are more determinative of the evolution of the system. But this does not mean that the infrastructure can do without its superstructure.

The initial task of any truly anthropological study of sociocultural evolution is to situate sociocultural systems within the grand sweep of infrastructural changes that have led to the emergence of hunter-collector, agricultural, pastoral, and industrial societies and to the specific demo-techno-econo-environmental conditions which have selected for the myriad types and sub-types of these culturo-phyletic categories. In this macroperspective, the asymmetry

of sociocultural feedback processes reasserts itself at the junction between all major transformations, and the subsequent histories of events must then be read forward to the next major transformation.

The charge that cultural materialists assign a completely passive, epiphenomenal role to superstructure has been rebutted again and again but to no avail. In the sacred cow controversy, for example, no amount of explicit reference to the active role played by Hindu ideology in shaping the treatment of India's bovines has been able to prevent idealists, eclectics and Marxists from insisting that cultural materialism claims technoenvironmental factors were "solely" responsible (Freed and Freed, 1981: 483). In the reply section of the original article (Harris, 1966: 64) I sought to dispell any such interpretation by listing five ways in which religion (*ahimsa*) influenced the management of Indian bovines . . . "(1) safeguarding milking and traction breeds; (2) preservation of temporarily dry or barren but still useful animals; (3) prevention of growth of energy-expensive beef industry; (4) protection of cattle which fatten in public domain or at landlord's expense; (5) protection of herd's recovery potential during famines." The whole point of that article was to show that Hinduism had contributed to the maintenance of a useful, positive-functioned, or "adaptive" ecosystem involving bovines and people; therefore, it is clear that I never originally claimed that "technoenvironmental" factors were *solely* responsible for anything in India (or elsewhere). In my comments on Simoons' article (Harris, 1979a: 481), I reiterated that religion influences the management of bovines in India and that the beef and slaughter taboos "probably shift the definition of old and infirm cattle to favor borderline specimens, [and are] probably preventing the development of an agri-business form of beef production for the elite and international market, slowing down the conversion to a landless peasantry, and lowering the rate of urban unemployment." Does that sound like the writing of someone who holds that the composition of the Indian cattle population is "determined solely by technoenvironmental factors?" (Harris, 1981b: 492).

It is difficult to leave the example of the sacred cow without responding to another of Bloch's imaginary distinctions between cultural materialism and true Marxism. Bloch (1985: 133) states that for cultural materialism, ". . . the explanation of people's beliefs and values is to be found directly in the nature of the techno-environmental combination." He makes the additional charge:

Harris notes that cows are holy in India and then looks around for anything that will show the belief to be reasonable in terms of the economy; he does not specify a general theory of what kind of conditions will cause cows to be considered holy. Since he does not do this, his theory cannot be challenged by the numerous cases where similar conditions to those he notes for India occur but where the cow is not held holy. In this way his theory protects itself from the challenge but also from the ability to say anything but the obvious. An instant of thought

will show that an "explanation" of this sort could be given for any and every phenomenon. Supposing that the Indians abhorred the cow and would not allow it in their country; it would be just as easy for Harris to explain the custom by saying that this abhorrence was due to the fact that if the Hindus allowed cows to wander about the place they would ravage crops and bring disease, two things which Indian cows undoubtedly do (ibid.: 133-134).

First, the origins and evolution of the sacred cow complex were never conceived as involving only technology and economy, but demography and environment as well. Second, the initial presentation (Harris, 1966) of the utilities of Indian cattle was carried out to refute the widespread conviction that the management of cattle in India had a strictly negative cost/benefit balance. As in the case of the other extravagant claims about the disutilities of cattle, pigs, dingoes, etc. (discussed above in the section on eclecticism), this task did not depend on an evolutionary account of the origins of the complex. Third, there is nothing but misinformation in Bloch's claim that no general theory about taboos on the consumption of animal flesh has been offered (see Harris, 1977, 1979a, 1985, 1987; Ross, 1978b, 1980a, 1983, 1985, 1987). Fourth, it is again sheer misinformation to state that the question of why cattle were apotheosized in India and not some other species was never answered (see previous citations). Bloch has a right to reject these theories, but not to write that they don't exist. Fifth, it is false to state that these theories were merely "*ad hoc*." On the contrary, they arise out of the systematic cross-cultural study of the energetic costs and benefits of producing meat and other animal products in relation to the intensification of preindustrial modes of production, population increase, depletions of natural resources, and consequent increase in adverse balance of costs and benefits of raising animals primarily for their flesh. Sixth, there is Bloch's suggestion that since cows have costs (ravaged crops and disease), one might just as well expect them to be abominated as to be venerated. Apparently Bloch does not understand that it is the balance between costs and benefits, not costs or benefits taken separately, that selects for cultural innovations (see Harris, 1985, for a discussion of the conditions under which animals which are not eaten are abominated or venerated and Harris 1988b for a balance sheet on the costs and benefits of selecting for cattle over swine as the principal domesticated animal in the Middle East). Finally, no one proposes that the sacredness of cattle rises directly out of infrastructures. Rather, it arises as the consequence of thousands of years of interaction (positive and negative feedback) between infrastructural, structural, and superstructural factors leading to the transformation of Vedic life, the rise of Buddhism and other non-killing religions, the struggle between Buddhism and Hinduism, and the final co-option of non-killing themes by Hinduism. Nothing in evolution is "direct" because in every evolutionary process there is both continuity and discontinuity, and selection is by consequences not by design.

To pin the donkey tail of ideas-have-no-importance on cultural materialism, Bloch and his new Marxist collaborators, have to forget that it was Marx who wrote that "religion is the opium of the masses." No cultural materialist would wish to categorize religion as exclusively involved in system-maintaining negative feedback (Harris, 1990). The fact is that Marx never solved the problem of the relationship between thought and behavior precisely because he could only rely on Hegel's vague, unoperationalized, and hopelessly metaphysical notion of dialectical processes. In their commitment to this (crude? vulgar?) 19th century precursor of feedback concepts, Marxist anthropologists are clearly motivated by something other than the desire to construct scientifically advanced theories.

Let us turn now to the question of how the new Marxists have attempted to cope with the errors of Morgan and Engels. One strategy is to argue that all history, including pre-history, is indeed a matter of class struggle. This can be done by defining antagonistic sex and age groups as classes (e.g., Terray, 1977). While it is important to realize that severe internal tensions exist in so-called egalitarian societies--the new Marxists were scarcely the first among modern anthropologists to point this out--these internal structural "contradictions" cannot be understood apart from their demo-techno-econo-environmental context. Thus, for many of the new Marxists, the reinsertion of "class" conflict into pre-history has merely served as a pretext for avoiding the examination of the infrastructural conditions which underwrite the structural level of sociocultural systems.

Another strategy pursued by new Marxist anthropologists such as M. Godelier, P. Worsley, J. Friedman, J. Kahn and J. Llobera, attempts to remedy Engels' sin of vulgar materialism by abandoning the notion of infrastructural determinism. Precapitalist societies differ from capitalist societies not only in being classless but also in being "dominated" by non-economic motives and forces. Infrastructure it is proposed, does not have a fixed content which can be identified cross-culturally. Referring for example, to native Australian societies, Godelier (1983: 10) states: "We are here clearly dealing with kinship relations that function simultaneously as infrastructure and superstructure". In some societies, religion "dominates;" in others, kinship; in others politics, etc. The word "dominates" plays a crucial role in preserving some semblance of continuity with the historical *materialism* and dialectical *materialism* that most scholars as well as ordinary people the world over associate with Marxism. "Dominates" is said to be different from "determines." It is the "economic base" that ultimately --"in the last instance"-- *determines* the limits of the "autonomy" of structure and superstructure. Or in a slightly different formulation, "it is the economic function of the non-economic structures which determines their pre-eminence" (Kahn and Llobera, 1981: 307).

The notion that structure or superstructure can at various times be dominant is easily reconciled with the cultural materialist proposal that infrastruc-

ture selects for structural and superstructural components which once selected, amplify their infrastructural basis. This amplification readily gives the impression that "religion is in control" or that "politics is in control." But the impression arises from isolating an arbitrary moment in history from its evolutionary context. In Iran, for example, it was the struggle over oil that created the Shah; and it was the struggle over the Shah that created Khomeini and the Islamic revolution. To predict the fate of the Islamic Revolution, one must get back to the problem of how the Iranian people are to be fed, housed, and clothed. To see "religion in command" or "politics in command" is to suffer the kind of mystification which Marx sought to remedy in his study of the infrastructural basis of the capitalist superstructure. It is in fact, to dissolve Marxism into eclecticism, quite literally, as I predicted some time ago (Harris 1979b: 229). Influential self-identified European Marxists now not only deny that infrastructure denotes crossculturally recurrent categories of institutions, but propose to do away with the very notion of infrastructure and of "economy" as well. According to Peter Worsley:

"The basic theoretical blockage is a concept incompatible with a dialectical sociology: the materialist image of base and superstructure. It is time, now, to pay tribute, a century after Marx's death, to his own criticality as a man whose favorite slogan, he said, was *de omnibus dubitandum*, everything ought to be questioned by consigning that concept to the same place to which Engels wanted to consign the State: "the Museum of Antiquities, alongside the spinning-wheel and the stone axe" (Worsley, 1985: 41).

Indeed, an avant garde of especially "creative Marxists" (Worsley's phrase) finds their less creative colleagues (e.g., Godelier and Jonathan Friedman) to be scarcely distinguishable from the abominated cultural materialists because they "retain a category of economy which purports to be general to all societies" (Kahn and Llobera, 1981: 307).

Worsley raises the interesting possibility that the new Marxists are really best described as "closet Weberians"! He states that

"Many Marxists I know will admit, in private, to being closet Weberians. But never in public, since they do not wish to be pigeon-holed with enemies of democracy and socialism. Conversely, many who are very radical and engaged politically reject the intellectual crudities of dogmatic Marxisms, and their political counterpart sectarianism (1984: 37)".

For Worsley as for Weber:

"Causal connections were often oblique and mediated: capitalism no more *caused* Protestantism than Protestantism *caused* capitalism. Religious ideas were important elements [but not all of them, only those which had a bearing on people's economic behavior] not the theology, but the ethic, the code of conduct" (ibid.: 38).

The surrender of anthropological Marxism to Weberian eclecticism cannot be understood apart from the vicissitudes of the western European communist establishment, especially with respect to the attempt of the French communist party to explain the phenomenon of Stalinism and to escape from its intellectual and political onus. The Marxist philosopher, Louis Althusser, emerged as the leading figure in these endeavors during the 1970's. He confronted a difficult task: how to sanitize the scientific determinism of Marx's historical materialism (essential to the prediction of the triumph of the proletariat) at a time when the odor of Stalin's prolonged reign of terror in the name of Marx's "science of society" hung over all of Europe. Althusser's solution involved on the one hand a defense of Marx as a scientist, but on the other, a weakening and watering down of historical determinism to conform to the celebration of individual freedom and the growing prosperity of the mixed economies of western European democracies. It was Althusser who introduced the idea of determination of economic factors in the last instance, dominance instead of determination, and the indeterminate structure of modes of production in different social formations (Benton 1984). Althusser's influence proved to be short-lived. By the end of the 1970's, the opening toward eclecticism and voluntarism had swallowed up his defence of historical materialism. (It did not help that in 1980 Althusser was admitted to St. Annes psychiatric hospital after confessing to the murder of his wife, a fact which his followers could not help but link to the evasive, tortured and opaque nature of his prose style and his schizoid task—to redeem Marx without redeeming Stalin). And by the middle of the 1980's, as discussed earlier, the anti-scientist, relativist, phenomenological, and interpretationist influence of Derrida, Foucault, and other postmodern literary critics had virtually achieved hegemonic status among left-leaning intellectuals.

These trends will no doubt be further strengthened by the spectacular and still on-going dissolution, overthrow, democratization, and widespread reintroduction of private property and labor markets throughout Eastern Europe and within the Soviet Union itself. Inevitably, these vast changes in the communist block will be viewed as a repudiation of every vestige of historical materialism and of its goal of achieving a science of society. Yet from a cultural materialist perspective, those aspects of Marxism that are compatible with a positivist materialist rather than a dialectical materialist analysis of the development of hyper industrial societies, and which are predicated on the separation of actors from observers, and of infrastructure from the structure of the relations of production, find the strongest possible confirmation in the same ongoing upheavals. Indeed, the very features of cultural materialism that card-carrying Marxists found most objectionable,—the insistence on the asymmetrical influence of environmental, demographic, technological, and economic costs and benefits as the key to the evolution of structure and superstructure— emerge as the only part of Marxism that has survived the test of world events. For nothing

is clearer in the recent history of Europe than that the downfall of the so-called communist systems has been caused by their colossal failure to provide the standards of production and consumption inherent in high tech, computer-age industrialism despite enormous costs suffered in the form of environmental pollution, shoddy goods and services, inadequate housing, and monotonous diets. (I do not doubt that the deprivation of the right to travel and the right to elect political representatives and other civil liberties were costly as well, but these deprivations were themselves the determined outcome of a system that could not objectively confront its own failures and that attempted to perpetuate itself through the repression of the knowledge of its true condition).

However great the seeming paradox, it is Marx (1970) himself who must be credited with stating in *The preface to A Critique of Political Economy*, the general formula governing the processes that have brought "communism" to its knees:

"At a certain stage of development the material productive forces of society come into conflict with the existing relations of production or [this merely expresses the same thing in legal terms] with the property relations within the framework of which they have operated hitherto. From forms of development of the productive forces these relations turn into their fetters. Then begins an era of social revolution." (Marx 1970: 21)

The whole problem with Marxism as a guide to the evolution of industrial modes of production and to political praxis in the late 20th Century, is that it has dogmatically dismissed formalist cost/benefit analysis as economism and vulgar materialism. It was thus slow to realize and to see the significance of the fact that highly centralized command economies placed more of a fetter on—were less efficient than—the mixed economies that had evolved in post World War II Europe and North America. These mixed economies replaced the completely unregulated forms of capitalism that prevailed during Marx and Engels' lifetimes, precisely because they unleashed more of the productive potential of smokestack industrialism. Communist theoreticians refused to admit that they were falling behind. As long as the industrial mode of production remained at the smokestack level, they could argue plausibly that the command economies would soon begin to gain on the mixed economies and that they would eventually surpass them—"burry them" as Nikita Khrushchev boasted. In the last 20 years however, modes of production in the West have evolved toward a new information and service phase of industrialism in which smoke-stack factories are fast becoming obsolete. Clearly, the totally centralized and bureaucratized relations of production in Eastern Europe and the Soviet Union now came to constitute the fetters on the productive forces which Marx predicted would be broken only by an era of social revolution. In view of the immense social upheaval that is now taking place in Eastern Europe and the Soviet Union, Marx's general theory of the selective principles that operate

in sociocultural evolution remains essentially correct, even if in its application to the specific infrastructural conditions of late 20th Century industrial societies it yields results which Marx did not and could not foresee.

SOCIOBIOLOGY

Sociobiology and cultural materialism share a strong commitment to: (1) positivist science; (2) a broad evolutionary perspective (i.e., continuity and change in the emergence of new entities); and (3) selection by consequences. They are fundamentally opposed, however, on the question of the use of Darwinian fitness (i.e., reproductive success) as the currency for measuring the cost/benefits of socioculture innovations. For sociobiologists, cultural innovations are selected for or against in relation to their contribution to the reproductive success of the innovating individuals. For cultural materialists, reproductive success accounts for the evolutionary emergence of the cultural competence of *Homo sapiens*. Thereafter, cultural innovations are increasingly selected for or against independently of the reproductive success of the innovators (i.e., with a diminishing incidence of gene-culture evolution). Sociobiologists regard currencies which measure cost/benefits in terms of caloric inputs and outputs, morbidity, longevity, nutritional factors, or monetary units as proxies for or contributors to reproductive success. Cultural materialists, on the other hand, regard reproductive success as a proxy for or contributor to those currencies which measure the differential cost/benefits involved in satisfying an individual's bio-psychological needs, drives, aversions, and behavioral tendencies.

Human sociobiology has attracted a large following among anthropologists who have been highly productive of theories which purport to explain both cross-cultural uniformities and cross-cultural differences (see Gray, 1985, for a survey of sociobiological theories). Let us first consider some theories that deal with uniformities. These in effect amount to identifying and describing human nature, or the human "biogram" —the equivalent of cultural materialism's biopsychological givens. For example, some sociobiologists propose that individuals who have been brought up together in the same household have an instinctive aversion against mating with each other; that human males are instinctively jealous; that females tend by nature to be more selective of their mates; and that fear of snakes is instinctive. It would not be possible to present a definitive list of such biogramatic traits, since sociobiologists scarcely agree on how many there are. The point to be made, however, is that sociobiologists are pre-disposed to accept a much broader range of widely recurrent aspects and elements of human social life as being genetically programmed as compared with proponents of other anthropological paradigms. While universal or near-universal occurrence automatically signals "biogram" for sociobiologists, universal or near-universal occurrence for cultural materialists signals nothing of the kind. Rather, cultural materialism seeks to explain such occurrences in

terms of infrastructural determinations which have been culturally selected for in a large number of societies. Reduction of such puzzles as male jealousy, incest aversions, female reproductive strategies, and fear of snakes to the level of genetic programming is a maneuver of last resort. Thus, male jealousy can be viewed as a component in a widespread male supremacist complex related to warfare (in turn related to reproduction pressures); nuclear family incest aversions are related to exchange of women between groups and sexual rights associated with marriage; female mate selectivity can be considered as a defense against male supremacist complexes; fear of snakes may be seen as a culturally selected defense against encounters with poisonous reptiles.

It may not be possible to resolve which set of theories is correct on the basis of empirical testing alone. The problem is that none of the genes which sociobiologists postulate as the cause of these (and other) universal traits have as yet been identified. The only way to falsify the sociobiological contention would be to show that there are no genes for regulating the behaviors in question. Given the state of molecular genetics, and the impossibility of performing controlled human subject experiments, this lowers the level of testability of the sociobiological theories. It is true that cultural materialism also assumes genetic programming for a hunger drive, sex drive, aversion to high temperatures, etc. But these assumptions are shared by sociobiologists. Adding more hypothetical genes, therefore, results in lower testability for sociobiology.

It should be stressed that leading contributors to sociobiological theory emphatically deny that there is a one-to-one correspondence between cultural behavioral traits and particular genes. The programming in question is broadly "facilitative" rather than narrowly determinative:

"The hypothesis that human behavioral propensities are adaptations shaped by natural selection does not imply that human behavior is not plastic or that differences in behavior among human populations are the result of genetic differences. The most reasonable hypothesis is that the behavioral differences exhibited by different populations are environmentally induced variations in the expression of basically similar genotypes, and that the ability and propensity to vary behavior in response to environmental differences is itself an adaptation" (Irons, 1979: 5).

While this relieves sociobiologists of the burden of a narrow form of genetic determinism (with its racist implications), it renders their hypotheses even more vulnerable to the charge of nontestability. The genes at the bottom of human sociocultural differences and similarities are not the familiar Mendelian units of population genetics:

«Thus, to explain adaption we postulate "genes" for the trait. These are no ordinary genes. They do not necessarily correspond to a cistron. If we postulate a "gene" for altruism, all that is meant is that there could at some time have been a heritable difference in the tendency to behave altruistically» (Ridley, 1981: 250).

The reason why this license to postulate genes which have no definite locus and which merely determine tendencies seems not to bother human sociobiologists is that similar assumptions about hypothetical genes are routinely made in the construction of sociobiological and other Darwinian theories about cross species differences. But hypothetical genes for explaining human social tendencies are far less plausible than hypothetical genes for explaining non-human social tendencies since we know in the human case that social learning and traditions play a vastly more important role. In the non-human cross-species comparisons, we are in a sense compelled to postulate heritable differences in tendencies to behave; in the human intra-species case we are compelled not to make such postulates until we have exhausted the alternative of cultural adaptations.

Now for the sociobiological theories that purport to explain cross-cultural variations. From a cultural materialist perspective, two kinds of these theories need to be distinguished.

- a) Theories which are based on energetic costing and which are in effect cultural materialist theories in all respects except for their tacked-on assumptions about hypothetical facultative genes.
- b) Theories based on the distinctive principles of inclusive fitness for which rival cultural materialist theories based on more testable or more powerful theoretical principles also exist.

Optimal foraging theory is an example of the first kind of theory. When a list of the gathered or collected species is analyzed for energetic inputs and outputs and time costs, it is predicted that each item on the list adds to the overall efficiency of the foraging process, including encounter and handling time (Hawkes et al., 1982). This prediction conforms precisely to cultural materialist principles predicting that the satisfaction of nutritional needs will be carried out through the optimization of costs and benefits in production and in its prediction that the ideology of food preference and avoidances is a consequence of infrastructural activities and not the reverse. Optimal foraging studies are not predicated upon measuring reproductive success or inclusive fitness, and to the extent that there is a genetic component underlying the optimal adjustment of benefits to costs, it is a component that is so basic to the behavior of organisms as to be shared by all vertebrates if not by all animals. Ironically, therefore, some of the most sophisticated tests of cultural materialist theories regarding food preferences and avoidances have been carried out by anthropologists who identify themselves as sociobiologists.

Another example of cultural materialism masquerading in sociobiology is Kaplan and Hill's (1985) explanation of why more successful Ache hunters share food with less successful hunters (i.e., why they practice reciprocal exchange). Since there is no meat storage, and wide day-to-day variation, "almost all individuals achieved higher nutritional status by sharing food" (ibid., 236). But the same point was made independently and without invoking repro-

ductive success by Richard Gould (1982: 76): "the greater the degree of risk, the greater the degree of sharing". In addition, Hill and Kaplan go on to explain why highly successful hunters should consistently give away more food than they get: the "low producers accord . . . benefits to high producers" (ibid., 237).

For Kaplan and Hill, these benefits must be fitness benefits. But from a cultural materialist perspective the benefits need not increase fitness in order to balance the exchange. Increased sexual access, for example, might in itself be a sufficient reward for giving away extra meat. ("Sex for meat" is a common feature of many Amazonian reward systems.) Since Kaplan and Hill do not provide measures of increased fitness benefits, their explanation corresponds precisely to a cultural materialist cost/benefit explanation of reciprocity, except for the tacked on restriction to fitness benefits.

At the true heart of human sociobiology one encounters such neo-Darwinian principles as inclusive fitness, parental investment, and paternal certainty applied to the explanation of human mating patterns, food sharing, family structure, descent systems, and village fissioning. In each instance the central idea is that human social behavior has been selected for its consequences for maximizing reproductive success. For example, a sociobiological explanation for the occurrence of matrilineality and matrilineal inheritance is that when males are uncertain of paternity because of their wives' extramarital affairs, male inclusive fitness will be greater if males pass on supportive resources to sister's children rather than their own (Hartung, 1985). To test this theory, a 2 x 2 table is constructed showing that there is indeed the predicted association between lack of paternal certainty and matrilineal descent and inheritance. (Hartung argues that even greater reproductive success is achieved by women under this arrangement, but this refinement does not change the point to be made here.) This association, however, tells us nothing about the causes of matrilineality (or patrilineality). It has long been observed that women have greater sexual freedom in matrilineal than in patrilineal societies. Is it the exercise of this freedom that causes matrilineality? If so, under what conditions do women find themselves in a position to have such freedom? To answer, "where descent and inheritance are matrilineal" does not advance our understanding unless we can explain the causes of matrilineality.

Cultural materialist theories of the causes of matrilineality and patrilineality are not predicated on a calculus of reproductive success through inclusive fitness. Rather, they start from a consideration of the energetic, nutritional, and other infrastructural costs and benefits associated with post-marital locality. Where modes of production require men to leave their towns and villages to go on prolonged trading-raiding-hunting forays, sisters take precedence over wives as guardians of lineage property (brothers and sisters are members of the same lineage; husbands and wives are members of different lineages). With uxorilocality, husbands are strangers in their wives' households; women achieve

ve a high degree of domesticate independence; and this manifests itself in easy divorces and frequent affairs. It is clear therefore that the cultural materialist theory not only predicts the association between uncertain paternity and matrilineality, but also predicts the conditions under which matrilineality will be selected for, which the principle of inclusive fitness shows no signs of being able to do. (See Harris 1990 for a discussion of the causes of matrilineality).

"Nepotism theory" is another central concern of human sociobiology. It is held that altruistic (i.e., supportive) behavior occurs more frequently between biologically closely related individuals than between distantly related or unrelated individuals because such behavior increases the inclusive fitness of the altruistic individual. Much effort has been expended on more or less successfully showing that a correlation exists between closeness of relationship and altruistic behavior (or distance of relationship and agonistic behavior), but virtually no effort has been expended on showing that the altruistic behavior in question increases the altruist's inclusive fitness in a cost effective manner (Gray, 1985: 77ff). From a cultural materialistic perspective, the correlation between degree of relatedness and supportive behavior follows from the distribution among individuals of the costs and benefits of rearing children. Biological parents, siblings, and other close relations tend to be more closely involved in various forms of reciprocal exchanges as a consequence of the structure of most domestic groups. The link between mating and parenting which lies at the heart of these groups has been selected for its optimization of a variety of productive and reproductive functions and not solely or mainly for its optimization of reproductive success. From the nuclear constellation of parents and children, there radiate outward complex patterns of learned behavioral interdependencies which roughly match closeness in time and space with biological relatedness, and supportive behavior.

This approach is superior to nepotism theory because it is capable of a more efficacious explanation of the occurrence of agonistic behavior between relatives and altruistic behavior between non-relatives. The widespread practice of infanticide requires sociobiologists to argue that the inclusive fitness advantage associated with nepotism can be overridden by the inclusive fitness advantage to be derived by killing a close relative. This need not be fatal to the principle of inclusive fitness (and nepotism theory) if the conditions under which one or the other course of action is likely to occur could be stated. Thus far, sociobiologists have not attempted to reconcile the contradictory consequences to which the logic of nepotism theory and of inclusive fitness can lead. Cultural materialism however has no difficulty in dealing with divergent outcomes of kin-related behavior. Since reproductive success is not one of the currencies used for calculating cultural materialist costs and benefits, it is not logically embarrassing that close relatives may sometimes kill each other while non-relatives may sometimes help each other.

Nepotism theory fares even worse when we consider the degree to which supportive behavior in industrial societies involves nonrelated individuals

(friends) and the extent to which close relatives are excluded from everyday reciprocities as a result of geographical and social mobility. (The claims of close kin on a deceased individual's property follow from the continuing centrality of biological parents to the child-rearing process).

This brings us to the central conundrum of human sociobiology: how to explain the reproductive behavior of individuals in industrial societies. As Vining (1986) has shown, social and reproductive success are inversely related in modern societies which have undergone the demographic transition. Inclusive fitness cannot account for the demographic transition during which fertility falls while the resources for rearing children become more abundant. Nor can it account for the failure of urban industrial middle and upper classes to rear more children than the lower classes. Every basic tenet of sociobiology predicts that industrial wealth should lead to record high levels of fertility rather than to record low levels. And every basic tenet also predicts that the wealthiest classes should have higher fertility than the poorer classes. No satisfactory explanation of the failure of these predictions has yet been produced. Three defenses have been offered (see the discussion section of Vining, 1986, for specific instances).

Some claim that the data are faulty and that the rich and powerful still show a slightly greater degree of reproductive success than the poor and weak. But even if it turned out that the completed fertility rate of the rich is higher by 1 or 2 children (and no one suggests that it could be larger), we are still left with the fact that the rich are not maximizing their reproductive success in relation to their resources. Other sociobiologists accept the data but claim that industrialization has occurred too recently for fertility rates to rise to their predicted high levels. This argument carries little weight because it can be evoked to save any falsified theory and is in effect the death knell of the testability criterion. Finally, there are those who also accept the data but who dismiss their significance for sociobiology on the grounds that industrial societies are a tiny group of doomed maladapted societies which are not representative of our species' prior or future existence. Such arguments also carry little weight since the number of deviant individuals as distinct from the number of deviant societies is too large to be dismissed as a mere aberration; one could also speculate that the number of maladapted societies will increase not diminish.

It should be emphasized that the puzzle of contemporary reproductive strategies which sociobiology finds so difficult to handle is merely one aspect of a much bigger puzzle that extends to changes in sexuality, gender roles, family structure, and work patterns (as discussed above). What is really at stake here then is the relevance of sociobiology to modern life. Sociobiologists cannot simply walk away from this problem as if what is happening now is of no great significance to anyone but a handful of yuppies. Nor can their promise be taken seriously that some day (you'll see) reproductive success will be vindicated. Not as long as there is the alternative explanation offered by cultural materialism whereby changes in infrastructure raise and lower the costs and be-

nefits of rearing children and thereby account for the evolution of reproductive strategies (plus sex and gender roles, the sexual composition of the labor force, family structure, etc.) in preindustrial as well as hyper-industrial societies (See Harris and Ross 1987 and Edmundson, n.d., for cultural materialist theories of fertility rates.)

Despite its theoretical inadequacies and its implausible principles, human sociobiology has a bright future in anthropology. Sociobiology's strong commitment to positivism guarantees it the support of the larger scientific community, especially the support of biologists, who have always been eager to see anthropology become a branch of biology.

Notes

1. The American Anthropological Association in 1990 consisted of the following formally organized "divisions," "sections," "branches" or "interest groups:" The American Ethnological Society; Association of Black Anthropologists; Association of Feminist Anthropologists; Archaeology Section; Association for Political and Legal Anthropology; Biological Anthropology Society; Council on Aging; Central States Anthropological Society; Council on Anthropology and Education; Council on Nutritional Anthropology; General Anthropology Division; National Association for the Practice of Anthropology; National Association of Student Anthropologists; Northeastern Anthropological Association; Society for Anthropology in Community Colleges; Society for the Anthropology of Europe; Society for Cultural Anthropology; Society for Humanistic Anthropology; Society for Latin American Anthropology; Society for Medical Anthropology; Society for Psychological Anthropology; Society for Urban Anthropology; Society for Visual Anthropology. In addition, three large self-identified anthropological organizations operate independently of the American Anthropological Association: The American Association of Physical Anthropologists; The American Archaeological Association; and the Society for Applied Anthropology.
2. This corpus now includes theories about: General evolution: Leavitt, 1986. The origin and evolution of sex and gender roles: (Divale and Harris, 1976; Harris, 1977, 1981; Hayden et al. 1986; Maclachlan, 1983; Margolis, 1984; Miller 1981; Leavitt 1989). Warfare: (Ferguson, 1984, 1989; Morren, 1984; Balee, 1984; Harris, 1984; J. Ross, 1984). Class, caste and ethnic relations: (Harris, 1964; Despres, 1975; Mencher, 1980; Abruzzi, 1982, 1988; Ross, 1978); Origin of religions: (Harner, 1977; Harris, 1977, 1979c, 1989). Origins of food preferences and avoidances and of major world cuisines: (Ross, 1979, 1980, 1983, 1987; Harris, 1985, 1987; Vaidyanathan, Nayar, and Harris, 1982). Settlement patterns, demographic trends and modes of population regulation: (Good, 1987; Gross, 1975; Harris and Ross, 1987; Hayden, 1986; Keeley 1988). The origins of agriculture: (Hayden 1990). The origin of chiefdoms and the state: (Kottak, 1972; Sanders and Price, 1968; Price, 1984; Webster, 1985; Sanders, Santley, and Parsons, 1979; Haas, 1982; Paulsen, 1981). Anthropologists who carry out research in conformity with cultural materialist principles, to avoid controversy, often prefer not to label themselves as contributors to the cultural materialist corpus. The unmarked influence of cultural materialism has been especially significant in American archaeology where, as one ar-

chaeologist has written: "The principle of infrastructural determinism, of course, underlies modern archaeology, at least in North America" (Schiffer, 1983: 191). An interest in cultural materialism among behavioral psychologists should also be noted (Biglan 1988; Glenn 1988; Lloyd 1985; Malagodi 1986; Vargas 1985; Warner, 1985).

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BIOANTROPOLOGÍA



EL USO DEL CONTENIDO DE PLOMO EN MATERIAL ÓSEO PARA HIPOTESIS ANTROPOLÓGICAS

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RESUMEN

El saber la cantidad de plomo contenido en restos óseos puede tener valor antropológico si se sabe manejar prudentemente esta información. El informe que sigue presenta ejemplos de tal empleo en la formulación de hipótesis sobre el alcance de la tecnología del plomo en grupos culturales de la antigüedad; la identificación de rango social u ocupacional de subgrupos o de individuos dentro de una población estudiada; la identificación de los huesos que pertenecían a un individuo cuando éstos se encuentran mezclados con los de otros individuos; y predicción de efectos nocivos para la salud, así como la identificación de restos humanos como antiguos o modernos.

Más del 90% del plomo absorbido por el cuerpo se acumula en el esqueleto donde el proceso de renovación en el caso de los adultos es extremadamente lento (Rabinowitz et al., 1977). Dentro de ciertos límites, se puede obtener datos útiles si se supone que el contenido de plomo en el esqueleto en cualquier momento dado refleja la exposición total al plomo de aquel individuo (Aufderheide et al., 1981). Podemos aprovechar completamente estos datos sobre el contenido de plomo en el material óseo, pero sólo si tomamos en cuenta los rasgos culturales de la población a la cual pertenece el individuo estudia-

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do. Nuestro informe presenta algunos ejemplos de aplicación de los estudios sobre el plomo en el esqueleto a un contexto arqueológico. Todos los datos analíticos que se presentan fueron obtenidos mediante la espectroscopia de absorción atómica en el Laboratorio de Arqueometría de la Universidad de Minnesota-Duluth (Wittmers et al., 1977). Los índices de plomo se expresan en partes por millón (ppm), o sea, microgramos de plomo por gramo de ceniza ósea. Lo siguiente son algunas aplicaciones antropológicas de nuestros estudios que pueden ser de interés general.

EVALUACIÓN DEL ALCANCE DE LA TECNOLOGÍA DE PLOMO EN UN GRUPO CULTURAL DETERMINADO

De la demostración arqueológica de un número limitado de objetos de plomo en una población puede surgir el problema de su origen: serán de producción endógena o del intercambio comercial.

Hemos estudiado el contenido de plomo en muestras de hueso arqueológico que vienen de diversos grupos culturales acerca de los cuales se puede averiguar, dentro de ciertos límites, el nivel de desarrollo de la tecnología de plomo, tomando en cuenta información histórica y arqueológica. Los resultados de nuestros análisis se presentan en la tabla 1.

Los indígenas de Norteamérica y de Sudamérica que estudiamos no dejaron ninguna evidencia histórica o arqueológica de tecnología de plomo, mientras que los corintios del período clásico, como los norteamericanos actuales, fueron expuestos al plomo, en un grado moderado, a través de aplicaciones industriales (Waldron, 1973). El empleo masivo de plomo en la producción y en el almacenaje de comestibles, tuvo como resultado la ingestión de cantidades sustanciales de plomo entre los hacendados ricos de Norteamérica en el período colonial (Aufderheide et al., 1981; McCord, 1953, 1954). Los resultados de nuestros análisis del contenido de plomo en material óseo demuestran una correlación entre la cantidad de plomo esquelético y la información arqueológica o histórica respecto al grado de desarrollo de la tecnología de plomo en las poblaciones estudiadas. Esta correlación sugiere la posibilidad de aplicar la misma metodología al estudio de otras poblaciones de quienes no tenemos datos suficientes sobre el nivel de desarrollo de la tecnología de plomo.

LA IDENTIFICACIÓN DE DOS SUBGRUPOS SOCIOECONÓMICOS DENTRO DE UNA POBLACIÓN DETERMINADA

Distintas actividades sociales u ocupacionales pueden resultar en diferencias marcadas en cuanto a la exposición al plomo en varios subgrupos dentro de un grupo cultural. Hicimos una prueba de la posibilidad de usar los índices de plomo absorbido en los huesos para distinguir entre dos subgrupos (hacendados y esclavos) que vivían en una hacienda colonial norteamericana. El gra-

do de exposición al plomo se sabía a ciencia cierta por la información histórica y arqueológica que existe sobre esta población (Aufderheide et al., 1981). Los resultados se presentan en la tabla 2. Los valores analíticos revelan que la cantidad de plomo en el hueso puede ser la base de una división de la población colonial en dos grupos: los hacendados, quienes eran tan ricos que casi todos sus comestibles y bebidas eran contaminados por el plomo que se usaba en los envases; y la clase obrera, compuesta de negros en su mayoría, que apenas si tenía acceso a objetos fabricados de plomo (Aufderheide et al., 1981). En el contexto de Norteamérica colonial, valores altos de contenido de plomo suelen indicar la riqueza del individuo, sobre todo en las circunstancias controladas de las grandes haciendas que funcionaban a base de mano de obra esclava.

IDENTIFICACIÓN DE PAPELES SOCIALES U OCUPACIONALES DE CIERTOS INDIVIDUOS DENTRO DE UNA POBLACIÓN DETERMINADA

Incluso dentro de un subgrupo tal como los esclavos que trabajaban en una hacienda, todos los individuos no muestran los mismos rasgos de comportamiento. La variación en las ocupaciones puede dar diferencias en cuanto al acceso y la exposición al plomo. Un repaso de los valores individuales de los trabajadores de la Hacienda de Clifts (tabla 3) sugiere que es posible hacer hipótesis sobre el papel social u ocupacional de ciertos individuos a base de la cantidad de plomo contenido en los restos óseos.

De 1670 a 1705 d.C., la mano de obra de la hacienda ya citada consistía en criados contratados de raza blanca que, después de servir el tiempo obligado en sus contratos, se marchaban de la hacienda, pasaban el resto de su vida y morían en otros lugares. Después de 1705, la mano de obra consistía de esclavos negros que se quedaban en la hacienda toda la vida y eran enterrados allí mismo (Aufderheide et al., 1981). En contraste con los índices altos de plomo en los huesos de los hacendados, (185 ppm - vease tabla 2), los restos óseos del único trabajador blanco que se enterró con los negros, revelan una concentración de plomo de tan solo 29 ppm, o sea, casi igual a lo que se encuentra entre los esclavos negros. Aun si no tuviéramos otros datos que lo comprobaran, los índices de plomo en el hueso muestran que era un criado contratado que vivía, comía, y trabajaba con los esclavos. Por otro lado, una concentración de 96 ppm en los huesos de una esclava negra de 18 años de edad (o sea, un valor tres veces más alto que el promedio del grupo y el doble de cualquier otro valor individual) señala que esta mujer esclava tuvo acceso al único lugar en que se guardaban objetos de plomo, es decir, el caserón de los hacendados, donde tal vez trabajaba en el servicio doméstico.

En los dos individuos mencionados arriba, la cantidad de plomo en los huesos los identifica como personas que desempeñaban papeles sociales u ocupacionales singulares. Sin embargo, antes de arriesgarnos con hipótesis fáciles acerca de la naturaleza de estos papeles especiales, debemos tomar en

cuenta otra información general acerca de las características culturales del grupo.

AYUDA EN LA INDIVIDUALIZACIÓN DE TEJIDO ESQUELÉTICO MIXTO

Las costumbres de entierro, las circunstancias particulares, o bien los accidentes de transporte pueden haber contribuido a la mezcla de huesos pertenecientes a varios individuos. Si se supone que los miembros del grupo varían según el grado de exposición al plomo, los índices de plomo contenido en tejido óseo pueden ayudarnos en la tarea de individualizar esos huesos. La tabla 4 muestra valores de plomo en hueso que nos ayudaron a hacer esa labor.

En un caso documentado, el equipo de construcción de una carretera desenterró un lugar de entierro humano (Rathbun, 1983). Aparte de una cantidad considerable de huesos, también se descubrió una lápida mortuoria en que venía grabado el nombre de un individuo acerca del cual existen datos históricos. Era un hacendado rico que murió en 1756. De los huesos atribuidos en un primer momento a este individuo, la tibia, la mandíbula, el cúbito, y una costilla revelaron un contenido casi nulo de plomo. El ileon y el cráneo contenían 12.7 ppm y 52.1 ppm, respectivamente. Sería difícil imaginar un hacendado acomodado de esa época que pudiera mantenerse libre de contacto con el plomo. Parecería más razonable aceptar que los huesos con índices más altos de plomo son los del hacendado, y rechazar los huesos que no contienen plomo.

LA FORMULACIÓN DE HIPÓTESIS SOBRE LOS EFECTOS NOCIVOS PARA LA SALUD

Se ha averiguado que el nivel de absorción de plomo en el esqueleto de los esclavos negros que trabajaban en un ingenio de azúcar en una isla del Caribe en tiempos coloniales (1640-1840 d.C.) tiene un promedio de 120 ppm, con valores que corren entre 0 y 424 ppm. Estudios anteriores comprobaron que, entre los obreros que actualmente trabajan con el plomo, hay una relación cuantitativa entre la cantidad de plomo absorbido en los huesos y la cantidad del mismo metal en la sangre de estos individuos. Dado que hay una relación entre la cantidad de plomo en la sangre y la aparición de los síntomas clínicos del saturnismo, ha sido posible calcular el contenido de plomo en la sangre de los esclavos antes mencionados, a base de los datos que tenemos sobre la cantidad de plomo depositado en los restos óseos, y de ahí deducimos los síntomas clínicos que debían haber mostrado esos individuos. Los resultados sugieren que una tercera parte, como mínimo, de la población esclava, exhibía síntomas de saturnismo: desde dolores abdominales y parálisis muscular, hasta convulsiones e incluso la muerte. Un repaso de los documentos históricos de esas islas revela que tales quejas eran, en realidad, muy comunes entre los esclavos, pero no se reconocía en aquella época que se trataba de toxicidad atribuible a

la absorción de plomo. Otro estudio posterior postuló que la exposición al plomo ocurría cuando los esclavos respiraban los vapores de plomo que se producían en el proceso de refinación del azúcar. También se envenenaron al beber el ron que se destilaba en alambiques de plomo. Este estudio revela, a base de análisis de plomo absorbido en los huesos, una epidemia de saturnismo, antes desconocida, en los ingenios de azúcar del Caribe (Handler et al., 1986).

IDENTIFICACIÓN DE LOS RESTOS HUMANOS ANTIGUOS Y MODERNOS

El trabajo de los antropólogos forenses les obliga a veces a cerciorar el origen moderno o antiguo de muestras de hueso o tejido blando humano. Bajo ciertas circunstancias, el conocer los índices de plomo depositado en tejido óseo puede ayudar en esta determinación. Un tronco descabezado que tenía solamente las porciones próximas de las extremidades fue encontrado en la red de un pescador en el Lago Superior (Minnesota). El tejido blando estaba en estado de extrema calcificación. Aunque la estatura y la forma del cuerpo se parecían a las de un joven que se había ahogado en aquel lugar hacía unos quince años, una polémica acerca del tiempo necesario para producir tal grado de calcificación provocó una discusión de la antigüedad del cuerpo. La cantidad de plomo depositado en el fémur era de unas 10 ppm, un nivel consistente con lo que se da comúnmente entre los adultos jóvenes norteamericanos en la actualidad, pero incompatible con los índices de plomo en hueso que se encuentran entre los indios norteamericanos de la época precolombina (véase la tabla 1). Esta conclusión se confirmó poco después con el descubrimiento de fibras de material sintético en la piel calcificada.

CONCLUSIONES

En ciertos casos el conocimiento de los índices de plomo contenido en material óseo, en conjunto con datos culturales puede darnos información antropológica acerca de una población dada.

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TABLA 1

INDICES DE PLOMO EN HUESOS EN VARIOS GRUPOS CULTURALES

Grupo Cultural	Época	Contenido medio de plomo (ppm)	Número	Procedencia
Indígenas norteamericanos época precolombina	4000-3000 a C	0	123	Tierra Negra Illinois (USA)
Cultura Chile-Maitas	900 d C.	0	26	Museo de Antrop. Univ. Tarapacá Chile
Griegos-Corintios	400-600 a C.	16.2	6	American School Classical Studies
Norteamericanos época actual	1980 d C.	26.3	35	Autopsias en época actual
Hacendados norteamericanos época colonial	1700-1730 d C.	185	5	Hacienda de Clifts Virginia (USA)

TABLA 2

INDICES DE PLOMO ENTRE HACENDADOS Y ESCLAVOS EN UNA
HACIENDA NORTEAMERICANA, 1700 d. C.

	Contenido medio de plomo (ppm)	Número
Esclavos	35.0	11
Hacendados	185.0	5

TABLA 3

INDICES DE PLOMO EN HUESO DE TRABAJADORES EN UNA HACIENDA
NORTEAMERICANA COLONIAL, 1700 d C.

Edad	Sexo	Raza	Plomo en Hueso (ppm)
10	M	N	8
18	F	N	96
22	M	N	20
22	M	N	22
26	F	N	25
27	M	N	22
31	M	B	29
33	M	N	40
39	M	N	46
43	M	N	28
58	F	N	45

M = Masculino

B = Blanco

Promedio = 35

F = Femenino

N = Negro

TABLA 4

INDICES DE PLOMO EN HUESOS MIXTOS PROCEDENTES DE UNA
HACIENDA NORTEAMERICANA COLONIAL, 1750 d C.

Hueso	Plomo en Hueso (ppm)
Mandíbula	0
Cúbito	0
Tibia	0,0
Costilla	3,0
Ilium	12,7
Cráneo	52,1

ENFERMEDAD Y MEDICINA EN LAS ISLAS CANARIAS PREHISPÁNICAS

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Reconstruir la medicina del pasado no es fácil, y menos aún cuando no se dispone de algunos datos básicos. Concretamente en el caso canario con los pocos datos que dispone el investigador se puede llegar a saber cuales eran sus enfermedades más frecuentes, su arsenal terapéutico y sus prácticas quirúrgicas. Pero resulta tremendamente difícil llegar a saber cuestiones tan vitales como su actitud ante la enfermedad, su concepción de la misma, la situación social del enfermo y del sanador, sus medios de llegada al diagnóstico y al pronóstico, y, aún más, el significado de la medicina para aquella población, si es que existió la medicina como "disciplina" separada de otras de las practicadas por los antiguos canarios. ¿Existían enfermedades leves, susceptibles de una terapéutica "casera", y otras, de mayor gravedad -no tanto individual como social- que requirieran los servicios de "alguien" especializado?

Las fuentes clásicas para el estudio de la medicina primitiva son:

1.- Paleopatología: en el caso de la medicina prehispánica canaria es, con diferencia, la que más datos ha proporcionado hasta nuestros días, y más aun podra aportar en el futuro cuando se comience a investigar un campo particular de la misma, hasta ahora muy descuidado: las momias.

La enorme riqueza de restos humanos del archipiélago ha convertido a sus instituciones arqueológicas (Museo Arqueológico de Tenerife y Museo Canario de Las Palmas, fundamentalmente) en foco de atracción de numerosos especialistas en Antropología Física y, últimamente, en Paleopatología. Estos restos, estudiados desde el punto de vista paleopatológico han permitido conocer aspectos de las culturas aborígenes que hasta hace bien poco tiempo habían permanecido inéditos.

2.- Escritos de los que tuvieron referencias mas o menos directas de la medicina de la cultura objeto de estudio: al carecer la población aborigen de las islas de documentos escritos, tenemos que basarnos en los textos de cronis-

tas, viajeros e historiadores de la época. El problema con este tipo de fuentes, como ya señalara Diego Cuscoy (1968), estriba, en cuanto a la medicina se refiere, en que fueron realizados por gente no experta cuyas referencias, además, eran generalmente tardías. Por otro lado, hay que tener presente que los datos que aportan están muy influenciados por el sentimiento europeísta de los siglos XV, XVI y XVII, que no presenta la abstracción necesaria para ubicar enfermedad y tratamiento en su auténtico contexto. Además la enfermedad y la medicina se tocan con bastante superficialidad ya que el objeto de esos escritos era otro.

Con lo dicho pudiera parecer que las fuentes escritas carecen de valor. Nada más lejos de la realidad pues el saber interpretar esas fuentes puede ayudarnos mucho a desvelar los misterios que aún existen en cuanto a la medicina canaria prehispánica se refiere.

3.- Etnología médica: en Canarias se basa en la Medicina Popular. El problema de este tipo de estudios estriba en que es muy poco lo que se conserva de la medicina aborígen y mucho lo aportado por otras medicinas populares (gallega, escocesa o suramericana), tal y como recientemente ha señalado Casariego Ramírez (1986). A esto hay que añadir que es difícil establecer la criba necesaria para saber realmente lo que es aborígen y lo que no en algunas parcelas.

En el estudio de la medicina prehispánica canaria hay tres autores que pueden considerarse clásicos: Gregorio Chil y Naranjo (1876), René Verneau (1891) y Juan Bosch Millares (1961-62).

A pesar de ser la más antigua, quizás la más notable de estas aportaciones sea la de Gregorio Chil y Naranjo. Hay que señalar que, en general, todas son más o menos similares en cuanto a su contenido y orden: las enfermedades más frecuentes y la terapéutica son los objetivos principales de los tres, y desde este punto de vista pueden considerarse como de suficiente rigor científico (quizás la de menos valor sea la de Bosch por la gran fantasía que impone a casi todos los temas que trata y por no tener ninguna cautela a la hora de comparar e incluso, en muchos casos, superponer sus resultados con los de otros pueblos primitivos sin ninguna conexión geográfica, cultural o cronológica con los antiguos canarios, y que, además, han sido estudiados por otros autores a los que no cita, lo cual aumenta la confusión de los no versados).

Pero, ¿es esto historiografía médica?. Creemos sinceramente que no. Como señala H.E. Sigerist (1987 [1951]), lo primero que hay que hacer al consultar el pasado médico es preguntarse ¿qué queremos saber?, y todos los autores precitados anteriormente parece que esta pregunta nunca se la hicieron. Cuestiones tales como si existió una medicina "strictu sensu", concepto de la enfermedad de aquella población, existencia de "chamanes", prevalencia de la enfermedad, relación enfermedad-medio, etc... nunca fueron planteadas. Por otra parte hay que señalar que no se explotan todas las fuentes al alcance de los autores. A Verneau y Chil hay que achacarles la no utilización de los restos

humanos de los que disponían a miles y que les hubieran supuesto una gran cantidad de datos, limitándose a utilizar solamente las fuentes literarias que, aunque desde luego valiosas, no pueden explicar por sí solas la medicina prehispánica de nuestro archipiélago. Es decir, como bien afirma H.E. Sigerist (1987 [1951]), en sus investigaciones no se aplicaron métodos científicos a la solución de problemas históricos.

Por el contrario, a Bosch Millares se le puede achacar la copia literal de los precitados investigadores y su escaso conocimiento de las fuentes escritas, aunque utilizó bien por regla general los numerosos restos humanos de que dispuso.

Por supuesto, el conocer totalmente la medicina y el evento morboso de una cultura absorbida por otra superior es prácticamente imposible, sobre todo si esa cultura no posee documentos escritos y los documentos, escasos por lo demás, existentes se deben a gente que los escribió tardíamente en general. Por este motivo sería un error echar en cara a los investigadores del pasado médico de nuestras siete peñas que dejen de mencionar gran número de enfermedades que de seguro existieron en esa población pero de las que no queda la más mínima evidencia. Pero sería un error concluir que la escasez de datos sobre una determinada enfermedad, o, incluso, su ausencia total signifique que esa enfermedad no existió. Lo mismo se puede decir de los diferentes aspectos relacionados con la terapéutica.

En toda investigación científica, por más selecta que sea, siempre es inevitable que exista cierta arbitrariedad, sobre todo cuando se refiere a la Historia de la Medicina en la que el conocimiento médico por sí solo no permite una interpretación absolutamente correcta de las fuentes (Sigerist, op. cit.). De esta manera, pasaremos al estudio de la enfermedad y la medicina de las Islas Canarias anteriores a la conquista respetando las opiniones de otros investigadores y apuntando lo que personalmente se cree al respecto, y no sin antes señalar —siguiendo a Burstein (1952)— que hay que tener en cuenta que el estudio de la medicina primitiva, sea cual sea la cultura a investigar, requiere una visión de conjunto con respecto a los otros parámetros culturales y no una división tajante entre religión, gobierno, economía, medicina, ... ya que el diagnóstico, pronóstico y tratamiento de la enfermedad forma parte de la trama vital del grupo a estudiar. No obstante, hay que decir que el grado de integración de la medicina como un todo en los rasgos culturales de un pueblo varía considerablemente. Porque, de acuerdo con Ackerknecht (1942), aunque tenga muchos elementos similares, no hay una medicina primitiva sino muchas.

Una vez hechas estas consideraciones, pasemos al tema objeto de estudio.

CONCEPTO DE ENFERMEDAD:

En cualquier sociedad de las que en historiografía médica se consideran como primitivas la enfermedad puede dividirse, según Sigerist (op. cit.), en dos grandes grupos atendiendo a su gravedad:

- Enfermedades que son tratadas por el propio enfermo o por sus parientes y vecinos. Son las enfermedades que en la terminología actual se considerarían como leves (resfriados, pequeños traumatismos, etc). En general, son aquellas que no requieren explicación: "vienen por sí solas" y para ellos no son enfermedades en el sentido estricto sino ligeras dolencias.
- Entidades que por su repercusión entran en lo que hoy se conoce como "concepción mágico-religiosa" de la enfermedad y que, por tanto, son susceptibles de un tratamiento más especializado por parte del "chamán" o "medicine-man". Para la mentalidad primitiva éstas serían, según la mayoría de los autores consultados, las auténticas enfermedades.

Burstein (1952) ha señalado que el primer grupo puede entenderse como el de las causas naturales de la enfermedad y el segundo como el de las no-naturales. En este último caso puede tratarse de "alguien" (espíritu, fantasma, deidad) de gran poder que ha actuado contra el enfermo, o por rotura de un "tabú" (esta sería la concepción religiosa para Burstein). También dentro del grupo de las causas no naturales, y para la misma autora, puede suceder que un "mortal", actuando por medio del encantamiento, haya hecho enfermar al individuo (ésta sería la concepción mágica). Para nosotros la concepción mágica y religiosa no deben ser tan estrictamente delimitadas como hace Burstein, ya que magia y religión son muchas veces la misma cosa.

A pesar de lo dicho, y tal como ya apuntó E. Ackerknecht (1946), hay que ser muy cautos a la hora de estudiar la interpretación de la enfermedad, ya que, por ejemplo, los Masai —uno de los pueblos primitivos más racionalistas— no creen prácticamente en las causas sobrenaturales de la enfermedad, mientras que hay otros pueblos donde ocurre todo lo contrario como son los Dobuans.

Por lo que respecta a las Islas Canarias en su etapa anterior a la conquista es poco lo que ha quedado registrado acerca de como se entendía la enfermedad, pero hay datos en las antiguas crónicas, relatos e historias que apuntan hacia la división de la enfermedad en natural y sobrenatural. Leonardo Torriani, en 1592, señala que en Lanzarote las enfermedades leves (tales como resfriados) eran curadas por los propios enfermos por medio del golpeteo con "cuchillos" sobre la zona afectada.

Por otra parte, todas las fuentes coinciden al señalar la existencia de lugares de culto a la divinidad y de ceremonias propiciatorias en orden a conseguir su misericordia en épocas de catástrofe. Ese concepto mágico-religioso de la enfermedad se observa perfectamente en las obras de Torriani (op. cit.) y

Abreu Galindo (1602), al relatar la terrible epidemia de causa desconocida que costó la vida a casi las dos terceras partes de los habitantes de Gran Canaria, y que los antiguos canarios consideraron como un castigo divino como consecuencia del infanticidio femenino practicado en la isla.

Nada más indican las fuentes sobre la concepción patológica entre la población prehispánica de Canarias.

ACTITUD ANTE LA ENFERMEDAD Y SITUACION SOCIAL DEL ENFERMO:

Cuando se estudia el pasado de la medicina no solo interesa la impronta de la enfermedad, los estados de salud y su tratamiento. Interesa también, y mucho, por los datos culturales que aporta, el conocer cuál era la situación del enfermo en esa sociedad y la actitud de ésta ante aquél.

Señala Sigerist (1987 [1951]) que, en general, cuando se trata de aquellas enfermedades leves o naturales ya vistas nada ocurre en el seno de la sociedad. Pero las cosas se tornan muy diferentes cuando se trata de las enfermedades de causa sobrenatural, o de aquellas que, aún siendo concebidas como naturales, adquieren un alto grado de gravedad (fracturas de cráneo, fracturas abiertas de miembros, ...). Entonces se pueden observar dos actitudes distintas:

1. Muchas sociedades aceptan al enfermo, que pasa a ocupar una posición relevante en ellas. Lo atienden, lo tratan y hasta lo miman, llegando a ofrecer sacrificios para su total restablecimiento. Y si el enfermo es el cabeza de familia, los miembros de la comunidad lo sustituyen en sus labores cotidianas.

2. Otras, las menos según Sigerist, consideran al enfermo como un estorbo, llegando, en algunos casos, a acabar con su vida. La mayoría de los autores consideran esta actitud como una consecuencia directa del sentido de la economía de esas sociedades: "si usted no está capacitado para servir a nuestra sociedad de nada nos sirve mantenerlo con vida".

Sigerist apunta otro motivo para justificar este sacrificio del inútil: el miedo. El miedo a los espíritus malignos y al contagio: destruyendo al enfermo, se destruye al mal con él. Como afirma Laín Entralgo (1982), al enfermo estas sociedades lo ven con el espanto que siempre produce "lo sagrado", y, por tanto, como "res sacra" (en el sentido de "res execrabilis") y apunta que, aparte del asesinato más o menos ritual, también se produce con frecuencia el abandono del enfermo a su suerte.

Estamos de acuerdo con Burstein (op. cit.) quien apunta que la enfermedad tuvo probablemente en las sociedades primitivas una implicación mucho mayor que la que pueda tener hoy, precisamente debido a esas causas sobrenaturales: si algo sobrenatural ataca a uno de sus miembros, la comunidad entera pueda sufrir. De esta manera, en muchas sociedades el evento morboso llegó a ser el mayor y más grave acontecimiento social.

Para los aborígenes canarios no parece cumplirse la segunda de las actitudes apuntadas por Sigerist (op. cit.), ya que por medio del estudio paleopatológico se pueden observar un gran número lesiones graves, incluso en grados extremos de su evolución, que implican necesariamente unos cuidados especiales al que tenía la desgracia de padecerlas y que sin ellos hubiera fallecido de manera irremisible. Este hecho no se observa, por supuesto, en las sociedades que eliminan a los miembros que no les son útiles.

Por otra parte, las fuentes escritas hablan de diferentes remedios utilizados por los antiguos habitantes de nuestro archipiélago en el tratamiento de las diferentes enfermedades que los afectaban. Por todo ello, nos atrevemos a afirmar que el enfermo jugaba un papel diferente al de simple víctima en las comunidades aborígenes de las islas.

Pero en toda regla hay una excepción, y una de ellas se observa en la isla de La Palma. Allí, según las narraciones de Torriani (1592), Abreu Galindo (1602) y otros autores posteriores como Viera (1776) o Berthelot (1842), cuando la gente enfermaba decía: "Vacaguaré" (quiero morir), y entonces se los trasladaba a una cueva con un jarro de leche; tapiándose la entrada y dejándose morir.

Señala Torriani (op. cit.) que esto se podía observar por cualquier pequeña dolencia, pero este punto parece algo exagerado ya que hemos podido observar restos humanos procedentes de La Palma que presentan signos evidentes de tratamiento (trepanaciones, reducciones de fracturas, etc...). Creemos que esta norma se aplicaría para aquellas enfermedades que para la mentalidad de los antiguos palmeros eran consideradas como incurables.

¿EXISTÍA ALGUIEN CON FUNCIONES MÉDICAS EN CANARIAS?

De todos es sabido que el *medicine-man* ostentaba en las sociedades primitivas una posición mucho más importante que la que pueda tener el médico actual. Era, a la vez, sacerdote, hechicero, y médico. Incluso, a veces, llegaba a ser el jefe del grupo o por lo menos miembro de las familias más nobles, y el encargado, en esas sociedades ágrafas, de perpetuar la historia y las leyendas. Indica Sigerist (1987 [1951]) que el término *medicine-man* se utiliza por carecer de una palabra que lo defina mejor, y esto puede originar confusiones. De ahí que muchos antropólogos prefieran el uso del término "chaman", de origen siberiano. Se le denomine como se le denomine, lo cierto es que estos hombres jugaron, y aún juegan, un papel fundamental en casi todas las sociedades primitivas. En los grupos menos avanzados estos individuos llevaban a cabo todas las obligaciones del sacerdote, del médico y del profeta; se encargaban de dirigir los sacrificios, ritos, ceremonias y oraciones, promover la lluvia o el buen desarrollo de las cosechas. En grupos más avanzados había una cierta especialización.

Según Ackerknecht (1942), muy a menudo el medicine-man fue el primer y único profesional de las sociedades primitivas, para lo cuál era necesario una muy severa iniciación y unas costumbres rígidas y diferentes a las de sus paisanos.

En Canarias no hay referencias en las fuentes escritas sobre la existencia de personas dedicadas a la atención de los enfermos, excepto una cita de Antonio de Viana (1604) que dice:

“No fue tan notable su ignorancia que faltasen Galénos y Avicenas, que sin el sabio método de Hipócrates, remediasen sus daños y dolencias”.

No obstante, pueden sacarse interesantes deducciones de dichas fuentes si se comparan con otros pueblos. En efecto, las fuentes hablan de sacerdotes, adivinos y hechiceros. Veamos.

En Fuerteventura, según Torriani (1592) y Abreu Galindo (1602), existían dos mujeres, Tamonante que regía la justicia y decidía controversias y disensiones, y Tibiabin, una especie de profeta y sacerdotisa encargada de los diferentes ritos y ceremonias.

En la Gomera, también según Torriani, existían hombres fatídicos que predecían lo que iba a suceder, como era Eiunche, quien —entre otras cosas— predijo la llegada de los europeos. Algo similar relata el ingeniero cremonés para El Hierro, donde un tal Jone antes de morir anuncia la llegada de los conquistadores.

Quizás donde más clara aparezca esa figura, medio sacerdote y medio médico, sea en Gran Canaria con el Faycán. Estos individuos, auténticas personalidades dentro de la sociedad aborígen, eran los encargados de hacer la oración y los sacrificios. Torriani afirma que cada rey tenía un faycán que era quien conducía al pueblo hasta la cima del risco mas alto y, allí, tras la oración, realizaba los sacrificios.

Desde luego, estas figuras concuerdan con las descritas por los grandes primitivistas Ackerknecht (1942) y H.E. Sigerist (1951) en otras poblaciones de características similares.

En el caso concreto de Tenerife, Fray Alonso de Espinosa (1594), relata que cuando había calamidades la gente se reunía en ciertos lugares (“baladeros”) con sus rebaños, separando a las crías de sus madres para que con sus lamentos aplacaran a la divinidad.

Todos estos datos parecen apuntar, siempre dentro de la natural prudencia, hacia la existencia de los chamanes o medicine-men, o como se les quiera llamar, en las culturas aborígenes canarias.

En cuanto a las enfermedades y accidentes cotidianos parece, por lo relatado en la mayoría de las fuentes, que en muchas ocasiones eran tratadas por los propios enfermos. Pudiera suceder también que las mujeres intervinieran en los tratamientos de este tipo de dolencias, porque, tal y como afirma Sigerist, (1987 [1951]), esto es un hecho comprobado en otros pueblos y se relaciona con el hecho de que éstas poseen un mejor conocimiento que los hombres sobre plantas medicinales, preparados caseros de tipo terapéutico, etc...

Chil y Naranjo (1876) indica que la medicina no era exclusiva del sexo masculino ya que las mujeres ejercían también, cada cual para asistir a las personas de su sexo. Este dato no sabemos de donde pudo haberlo sacado el ilustre teldense, aunque parece una extrapolación de lo referido por los cronistas e historiadores para las prácticas momificadoras. Pero este hecho no es inédito para otras culturas tales como la de Nias (Indonesia) donde existían chamanes de ambos sexos.

ENFERMEDADES DE MAYOR INCIDENCIA EN CANARIAS ANTES DE LA CONQUISTA EUROPEA:

Puede extrañar que se llegue a este punto sin haber hablado del diagnóstico y pronóstico de la enfermedad entre los aborígenes de las islas. Pero es que nada hace referencia a ello en las fuentes literarias, ni siquiera mencionan algo tan importante en culturas de similares características como es el diagnóstico por la palabra. De este modo, en la actualidad desconocemos si utilizaron métodos tales como la "tirada de huesos", los "agüeros" o los sueños, o la misma ordalía.

En este estado de cosas sería de todo punto especulativo lanzar una posibilidad que a lo mejor a la postre es totalmente errónea. Por ello, pasemos al estudio de los estados de salud y enfermedad en la población prehispánica de Canarias.

Coinciden todas las fuentes clásicas al señalar que los canarios, en general, gozaban de buena salud. Torriani (1592), refiriéndose a Gran Canaria, indica que sus habitantes vivieron sin conocer la enfermedad durante 120 o 140 años, y lo atribuye más que al clima, a la alimentación equilibrada. Este dato, que a todas luces es exagerado, lo corrobora Bosch Millares (1961-62). Lo cierto es que a la luz de las investigaciones actuales la edad media de muerte en Canarias eran los cuarenta años, y solamente un 20-30% de la población alcanzaba o superaba los cincuenta.

En el estudio de las enfermedades los datos más importantes los proporciona la paleopatología (aunque ésta sólo refleja las enfermedades que dejan su impronta en el hueso y, en el mejor de los casos, las que todavía persisten en los tejidos momificados). También, aunque en menor proporción, las fuentes escritas aportan datos valiosos.

PATOLOGIA INTERNA:

Nos referimos aquí a aquellas enfermedades que afectan a las vísceras y órganos internos.

* Trastornos gastrointestinales:

Las fuentes escritas señalan como una enfermedad de alta frecuencia entre los canarios, y sobre todo en la isla de Tenerife, afectando más a los grupos

de edad infantil y senil, a la "cámara" o "flujo de vientre". En la actual terminología médica esta enfermedad es equivalente a una gastroenteritis disintérica. La mortalidad causada por ella era muy alta entre los antiguos tinerfeños según relatan las fuentes.

Pudiera tratarse de una shigellosis, probablemente la "*Shigella sonnei*", que afecta fundamentalmente a niños y ancianos en las estaciones de verano y otoño.

* Trastornos respiratorios:

El más frecuente parece que fue el "dolor o punta de costado", que según Surós (1955) está originado por la neumonía o pleuresía. Según Espinosa (1594), la mayoría de los afectados morían al poco tiempo.

Del estudio histológico de las momias se desprende que la antracosis pulmonar (depósitos de carbón en los pulmones) era también bastante frecuente, y parece que tiene una relación muy directa con la inhalación del humo de los hogares (Brothwell, Sandison y Gray, 1969). Su incidencia exacta es desconocida.

* Trastornos circulatorios:

Por medio de estudios histológicos se ha detectado en varias momias de Tenerife la existencia de arteriosclerosis, pero faltan estudios seriados que permitan saber su auténtica incidencia.

ENFERMEDADES CON REPERCUSION OSEA:

Junto con las observadas en los tejidos momificados son las demostradas por el estudio paleopatológico.

* Enfermedades reumáticas:

Son con mucho las de más frecuente aparición entre los aborígenes canarios. De todas ellas, la de mayor incidencia sin duda es la artrosis que, en algunas zonas de las islas de Tenerife y Gran Canaria, es detectada en el 40-50% de la población. Su distribución anatómo-topográfica es, en orden de aparición, la siguiente: columna vertebral, rodilla, hombro y cadera.

Otras enfermedades reumáticas detectadas son: espondilitis anquilosante (Rodríguez Martín, 1988) y artritis reumatoide (García Sánchez, 1980), con bastante menor incidencia que la artrosis.

* Infecciones óseas:

Se ha podido comprobar la existencia de osteomielitis postraumática y de tuberculosis (García García, 1984), sin que hasta ahora se haya determinado la incidencia de esta última. Por el contrario, la sífilis y la lepra tal y como señala Bosch Millares (1975), se han descartado entre los canarios prehistóricos.

*** Tumores:**

Aparecen en muy escaso número y en su inmensa mayoría son de naturaleza benigna (exostosis, gangliones óseos, osteomas). Solo tres posibles casos de tumores malignos han sido observados: un osteosarcoma del maxilar superior en una mujer de Gran Canaria (Chil y Naranjo, 1900) y dos individuos que presentan evidencias de mieloma múltiple, uno en Gran Canaria (Bosch Millares, 1975) y otro en Tenerife.

*** Malformaciones:**

Son raras en nuestro archipiélago, y en su mayor parte referidas al cráneo y a la columna vertebral.

En el cráneo se ha observado la presencia de escafocefalia (Rodríguez Martín, 1984), microcefalia osteogena, plagiocefalia, etc.

En la columna lo más frecuentemente detectado dentro de este capítulo de la paleopatología ósea es la dismorfogénesis lumbosacra, que en Tenerife llega a alcanzar el 30 % (frecuencia muy similar a la vista en Taforalt (Marruecos) por Ferembach (1963), en esqueletos de la población de esa zona de hace 12.000 años) y espondilolisis.

TRAUMATISMOS:

Junto con los reumatismos son los trastornos óseos más frecuentemente observados en las Canarias de antes de la conquista. Desde siempre ha llamado la atención de los investigadores la muy alta incidencia de fracturas craneales en la población prehispánica, especialmente en Tenerife, ya que existen series de esta isla en las que un 20% de los cráneos presentan algún tipo de lesión. Este hecho fue ya explicado, en 1968, por L. Diego Cuscoy quien lo atribuyó a las prácticas guerreras de los tinerfeños.

Pero no es sólo el hecho de esta alta frecuencia de lesiones lo más que impresiona, sino la muy importante proporción, cerca del 90%, de supervivencia de los traumatizados, lo que viene a incidir en los cuidados que les eran proporcionados para su recuperación.

ENFERMEDADES DENTALES Y MAXILOFACIALES:

Ya Hooton (1970 [1925]) llamo la atención de los investigadores sobre la pobre salud dental de la población prehispánica de nuestro archipiélago. De todas las entidades patológicas que afectan a la boca la más frecuente en las islas es la atrición o desgaste dentario, debido al consumo de sustancias abrasivas (en este caso por consumo de gofio que contiene partículas más o menos finas de los molinos de mano). En efecto, la atrición se puede apreciar en sus distintos grados en más del 50% de la población (incluso en algunas zonas alcanza el 90%).

La caries dental, por el contrario, sólo aparece en un 15-20 %, fundamentalmente en la zona norte de Tenerife. Esto se explica por un bajo consumo de productos ricos en azúcares.

La artrosis temporomandibular es una entidad cuya incidencia, en opinión de Hooton (op. cit.), es bastante alta (15-20%).

EPIDEMIAS:

De siempre han sido las enfermedades más temidas por la práctica totalidad de los pueblos, tanto primitivos como de etapas posteriores, que —como afirma Sigerist (1987 [1951])— el primer impulso que sienten es el de abandonar el lugar donde se declaran.

Está claro que las Islas Canarias antes de la conquista padecieron epidemias. Lo que ya no está tan claro, y por ello ha sido objeto de debate durante largo tiempo, es el tipo de epidemias padecidas. Otra cosa que parece fuera de duda es que los aborígenes tenían conocimiento del carácter contagioso de la enfermedad, cosa que Sigerist (op. cit.) ya señala para numerosas comunidades primitivas.

La manera de reaccionar de los canarios ante la declaración de una epidemia no está elucidada totalmente, pero ante la imposibilidad física de emigrar fuera de la isla, y por los datos que ofrecen las crónicas, parece que los sacrificios incruentos y las ceremonias colectivas (del tipo de las de los baladeros) jugaban un papel muy importante.

Dos epidemias parece que fueron las más importantes que padeció el archipiélago, una en Gran Canaria y la otra en Tenerife. Veamoslas.

En Gran Canaria poco tiempo antes de que se iniciara la conquista hizo su aparición una epidemia terrible cuya naturaleza no ha podido ser aclarada todavía. Lo que sí está claro es que la mortandad que causó entre los canarios fue tan enorme que Torriani (1592) y Abreu Galindo (1602) afirman que entre las dos terceras y las tres cuartas partes de la población fueron aniquiladas a los pocos días de haberse declarado (entre los fallecidos se encontraba el Guanarteme de Telde).

El concepto mágico-religioso de la enfermedad puede observarse en este caso puesto que los grancanarios atribuyeron su aparición al castigo impuesto por la divinidad ante la práctica del infanticidio por la superpoblación de la isla, y afirmaban, como recuerdan los cronistas e historiadores, que tras derogar esta “cruel ley”, la epidemia desapareció tal como había venido.

Con mucho la más conocida epidemia del Tenerife prehispánico, y aún de todo el archipiélago, fue la de la famosa “Modorra”, que —como muy acertadamente señala Bosch Millares (1961-62)— es uno de los problemas más interesantes que se plantea en el estudio de la medicina prehispánica canaria, y aun de la Prehistoria insular.

La fecha de comienzo fue hacia finales de 1494, haciendo los mayores estragos, según Viera y Clavijo (1776), en las comarcas de Tegueste, Tacoronte y Taoro. Viera atribuye su causa a la corrupción de los cadáveres de la batalla de La Laguna. Su mortalidad era enorme llegando a acabar con cien personas diarias, para llegar a alcanzar un total de muertos en torno a los 4.000, según Marín de Cubas (1694). Su duración exacta no se sabe pero pudo ser de, al menos, seis meses (Viera y Clavijo, op. cit.). Esto supuso tal disminución de los efectivos que los guanches podían oponer a los conquistadores que Viera no duda en afirmar que ésta fue una de las claves de que la conquista de Tenerife llegara a buen término. La sintomatología clínica, siempre según Viera y Clavijo (op. cit.) era: fiebres malignas, pleuresías agudas, manifestadas por fuertes dolores pectorales y letargia mortal.

Bosch Millares (1961-62) ha sido uno de los que más se ha ocupado del tema, y ha llegado a la conclusión de que esta enfermedad pudo existir también después de la conquista. El diagnóstico diferencial lo hace con las siguientes entidades:

- Poliomielitis anterior aguda
- Encefalitis (sin especificar el tipo)
- Tripanosomiasis africana (?)

Pero el apuesta por que la causa de esta enfermedad fue la "Pasteurella Pestis" o "Bacilo Pestoso", por lo que la modorra no fue otra cosa que la tristemente célebre Peste Negra.

No podemos estar de acuerdo con Bosch Millares ya que la peste no suele cursar con la sintomatología descrita por las fuentes literarias. Más bien parece tratarse del tifus exantemático epidémico que, según Sans-Sabrafen (1979) y Lozano Tonkin (1984), es propio de épocas de guerra, hambre, miseria, etc... y se conoce desde épocas muy remotas. Está originado por la "Rickettsia Pro-wazekii" y su vector es el "Pediculus Humanus corporis", es decir el piojo, siendo su único reservorio el hombre.

Cursa con un cuadro brusco de escalofríos, sudoración profusa, fiebre muy alta, cefáleas, mialgias, estados de postración y obnubilación, todo lo cuál conduce a una somnolencia manifiesta o "sopor tífico". También son frecuentes los exantemas. En ausencia de un tratamiento adecuado la muerte sobreviene en el 50% de los casos, en pocos días.

Otra prueba de que podría tratarse de esta enfermedad, es el testimonio del viajero inglés George Glas (1764), quien señala que la existencia del tifus exantemático era común en la época en que él visitó las islas.

TERAPEUTICA ABORIGEN:

Señala Ackerknecht (1946) que, a pesar de la creencia en causas naturales de la enfermedad, la ausencia de remedios usados sin implicaciones supranaturales parece característica sólo de un escaso número de pueblos primitivos. Por otra parte, el tratamiento, llamémosle "racional", se encuentra con alta

frecuencia cuando esta gente se enfrenta a trastornos ligeros o moderados, usando entonces remedios domésticos. No obstante, siempre según el gran primitivista suizo, es difícil decidir cuando se actúa con idea racional o sobrenatural, ya que un comportamiento pragmático no implica ciencia. Ya René Verneau (1987 [1891]) indica que las prácticas médicas de los antiguos canarios no pueden calificarse de científicas.

MATERIA MEDICA:

Según H. E. Sigerist (1987 [1951]), los pueblos primitivos preparan drogas de modo muy similar a como lo han hecho las diferentes civilizaciones a lo largo de miles de años, hasta el advenimiento de la moderna industria farmacéutica. De este modo, se ha observado que hacían decocciones e infusiones de plantas, hojas, cortezas y raíces, o mezclaban el polvo de las mismas con grasa animal para conseguir ungüentos.

Aunque la materia médica primitiva incluye muchos aspectos de la medicina racional, no se debe olvidar que frecuentemente se combina con ritos mágico-religiosos porque, como señala Ackerknecht (1942), el espíritu de la hierba lucha contra el espíritu de la enfermedad.

Compartimos la opinión de Sigerist (op. cit.) con respecto a que, debido al lugar preeminente que ocupaba la mujer en la vida del grupo en cuanto a las labores domésticas se refiere, ésta sería quien preparara las drogas, debido a su relación con las diferentes sustancias al preparar las comidas, lo que le permitiría un mayor conocimiento de las propiedades de las mismas.

Pasemos al estudio de la materia médica canaria, a la que dividiremos en vegetal, animal y mineral.

* MATERIA MEDICA VEGETAL:

No son muy explícitas las fuentes en cuanto al uso que hacían los aborígenes de la materia médica de origen vegetal y casi todos se limitan a hablar del mocán y de la sangre de drago. No obstante, existían en el archipiélago otras plantas con propiedades medicinales que podrían ser susceptibles de uso (los cronistas e historiadores siempre se refieren al jugo de ciertas plantas, pero sin especificar que clase de plantas). Con la prudencia necesaria se pasa a continuación a recordar brevemente la materia médica vegetal, con las propiedades que presentan y el uso que de ellas se pudo hacer.

- Mocán (Visnea Mocanera):

Es autóctona de Canarias. A su fruto los aborígenes lo llamaban "yoya". Su diámetro es similar al del garbanzo y primero es verde para pasar luego al color rojo y finalmente negro. Es sumamente dulce y de él se hacía la famosa miel de mocán o "chacerquen".

Todas las fuentes señalan su uso en casos de "cámara" (como astringente) y en el dolor de costado. Verneau (1987 [1891]) y Jaén Otero (1984) añaden un nuevo uso: la cicatrización de las heridas. Señalan igualmente que, si se mezclaba con jugo de dátiles, se podía usar como laxante.

Actualmente, en La Palma, los pastores lo siguen utilizando para curar heridas externas (Jaén Otero, 1984).

- Drago (*Dracanea Draco* o *Draco Palma Canariensis*):

Se da en Tenerife, La Palma, El Hierro y Gran Canaria. Señala Jaén Otero (op. cit.) que es endémico de Canarias. La resina que rezuma cuando se corta su corteza, la conocida "sangre de drago", fue exportada a Europa hasta el siglo XIX.

Según Viera y Clavijo (1776), se utilizó por vía oral para disenterías, hemorragias y gastroenteritis; y por vía tópica en la cicatrización de las heridas. También se usaba para el fortalecimiento de las heridas.

En infusión, su fruto se usa como antitusígeno. Según Jaén Otero (op. cit.) hoy se usa muy poco.

- Tabaiba:

A la que se refieren la mayoría de los autores clásicos es a la Tabaiba Dulce (*Euphorbia Dulcis Canariensis* o *Euphorbia Balsamifera*), que es una variedad del titímallo que se da en los terrenos incultos de todas las islas.

Da una leche espesa, abundante, glutinosa, que como chicle (según la terminología empleada por L. Diego Cuscoy) se usa para fortalecer las encías y dentaduras. Viera y Clavijo (1866) indica que se usaba para cerrar los pezones de las ubres de las cabras cuando están llenas de leche.

En medicina popular, y según Jaén Otero (1984), su jugo se emplea para tratar tumores cutáneos, verrugas y otros procesos de la piel, con muy buenos resultados.

La tabaiba salvaje (*Euphorbia Silvatica Canariensis*) se usaba para el tratamiento de eczemas (Viera y Clavijo, op. cit.) y para la artritis (Chil y Naranjo, 1876).

- Cardón (*Euphorbia Canariensis*):

Se da en todo el archipiélago, excepto en Lanzarote, en los terrenos incultos. Da una leche muy blanca, espesa, acre y corrosiva, cuyo sólo olor es capaz de producir exantemas en la región nasal.

Según Viera (op. cit.) y Bosch Millares (1961-62) se pudo haber usado, en forma de polvo, para el tratamiento de las alteraciones del aparato locomotor y para las heridas (presumiblemente como desinfectante). El propio Viera le añade otros usos: en trastornos digestivos como purgante; para la gangrena; para las ciáticas; y, mezclado con huevo, a modo de bálsamo que se aplicaba sobre el pecho, para los vómitos (?).

Afirma Jaén Otero (op. cit.) que en Igueste de Candelaria (Tenerife) se usa como remedio para las odontalgias.

- **Grama o Greña (*Triticum Repers*):**

Era el principal ingrediente de la tisana corriente, según Viera y Clavijo (1866), y también se usaría como diurético, tal como hoy se sigue haciendo en medicina popular.

- **Borraja (*Borrigo Officinalis*):**

Da un jugo viscoso e insípido, y sus hojas se utilizaban como expectorante. En medicina popular se usa como sudorífico y diurético.

- **Retama (*Teline Microphyla*):**

Aparece en las regiones montañosas de las islas, entre los 300 y 1.900 metros.

En infusión es usada en medicina popular como diurético y la raíz cocida contra las pulmonías.

- **Sabina (*Juniperus Phoenica*):**

Aparece en todas las islas, excepto en Fuerteventura y Lanzarote. Hoy se usa muy poco en medicina popular (Jaén Otero, 1984). Antes se usaba, tras cocción, como sudorífico, diurético, y abortivo.

- **Tilo Canario (*Ocotea Foetens Aiton*):**

Andrés Bernáldez, refiriéndose al Garoé o árbol santo de El Hierro, señala:

“... e es verde todavía, que nunca pierde la oja, y su fruto que da es unas bellotillas que amargan como hiel, e si las comen son medicinales e no hazen daño al cuerpo” (Andrés Bernáldez, s.a.).

- **Aloe:**

Espinosa (1594) se refiere a él como “Ligno áloe”, señalando que es un árbol muy oloroso cuyo humo, de olor suave, es medicinal y contravenenoso. Se usaba mucho, según la misma fuente, entre los guanches.

Suponemos que se refiere al Aloe Bastardo (*Agave Vivipara*), cuyo jugo resinoso se emplea en farmacia como purgante.

- **Almácigo (*Pistacia Atlántica*):**

Es señalado por Abreu Galindo (1602) como planta medicinal usada por los antiguos canarios.

En medicina popular, en opinión de Jaén Otero (1984), algunos campesinos todavía utilizan su corteza mascada para fortalecer los dientes y las encías; y en infusión para catarros y diarreas.

- **Brezo (*Erica Arborea*):**

Se da en zonas forestales altas (800-1.000 metros) de las canarias occidentales y de Gran Canaria.

En la folkmedicina actual se emplea contra las nefropatías.

- Palma (Phoenix Canariensis):

Señala Jaén Otero (op. cit.) que es un endemismo canario de todas las islas del archipiélago. Su fruto se conoce como "tamara o tamarán" (antitusígeno) y su jugo se emplea contra tumores de la piel. Con la savia de la palmera fermentada se hace la miel de palma (tónico estomacal).

- Beleño negro (Hyosciamus Niger):

Se trata de una solanácea que, según H.R. Raper (1953), fue muy usado como narcótico suave, analgésico y midriático en muchos pueblos primitivos. De él se obtiene la escopolamina, en sus formas atropina e hioscina.

En las islas hoy se usa para el tratamiento de las odontalgias (Jaén Otero, op. cit.), pero no está claro que existiera antes de la conquista.

*** MATERIA MEDICA ANIMAL:**

A través de la lectura de las fuentes parece que fue ampliamente usada.

- Leche de cabra:

Basándose en el relato de Antonio de Viana (1604), autores como Chil y Naranjo (1876) y Verneau (1987 [1891]), indican que la leche de cabra se usaba como purgante. Sin saber de donde saca estos datos, Bosch Millares (1961-62) afirma que la leche desnatada (?) la usaban los aborígenes canarios como coadyuvante en el tratamiento de la disentería y de las hemorragias.

- Mantequilla de ganado:

Afirma Chil y Naranjo (op. cit.) que la mantequilla de cabra constituía la base de la terapéutica de los aborígenes. En efecto, repasando las fuentes, se observa que en casi todas aparece la mantequilla como remedio ampliamente usado. Según Abreu Galindo (1602), el uso principal era como pomada poniéndola sobre el lugar afectado, y, en El Hierro, se empleaba también para untar el cuerpo de los enfermos, cubriéndolo luego con pieles, con lo cual se conseguía un efecto sudorífico.

Según René Verneau (1987 [1891]), la mantequilla se pudo haber utilizado de dos maneras:

Añeja: Empleada generalmente como pomada en dolencias externas por medio de fricciones. Las fuentes señalan que cuanto más añeja mejores son los efectos que produce.

Fresca: En uso tópico: tras hacerla hervir se aplicaba sobre la parte lesionada. Por vía oral: que, según Chil (op. cit.), era ingerida en forma de poción, se usaba contra numerosas enfermedades, sin que se conozcan cuales.

- Tuétano del hueso:

Es señalado por Abreu Galindo (1602) como uno de los remedios más empleados en algunas enfermedades, pero no especifica que tipos de enfermedades. Esto se vería especialmente en El Hierro.

Desde luego, en nuestra opinión, no parece que haya tenido tanta difusión como los anteriores.

* MATERIA MEDICA MINERAL:

Nada señalan los antiguos cronistas e historiadores sobre el uso terapéutico de sustancias del reino mineral, incluidas las aguas. Bosch Millares (1961-62) sugiere que aguas tales como las de Salinetas y Gando (Gran Canaria) pudieron haberse utilizado como laxantes, y las de Firgas, Teror, etc... como digestivas, pero nada se puede afirmar al respecto.

TERAPÉUTICA QUIRURGICA:

Como afirma Sigerist (1987 [1951]), entendiendo la cirugía como práctica con el fin de extirpar zonas enfermas o para restaurar la arquitectura corporal, basándose en el conocimiento anatómico, es obvio que los primitivos canarios no la desarrollaron. Ahora bien, si se toma como práctica quirúrgica cualquier intervención manual premeditada sobre el organismo con el fin de devolver la salud al individuo, podemos afirmar que los aborígenes de las Islas Canarias conocieron algunas técnicas. Veámoslas.

TRAUMATOLOGIA:

Para Rodríguez Maffiotte (1981), ésta sería la rama mas desarrollada de la cirugía primitiva, aunque en muy pocas ocasiones estaría desprovista de cierto contenido mágico-religioso. Esto es lógico, pues como indica Sigerist (op. cit.), las fracturas y luxaciones —siempre presentes en cualquier tiempo, lugar y cultura— llaman a la acción inmediata y esto significa que los primitivos en contacto habitual con esos accidentes llegarían a desarrollar algunos métodos racionales de inmovilización y reducción (sin descartar la curación natural de las mismas tal y como Schultz, 1967, ha observado entre simios, que ocurriría en ocasiones).

Cualquiera que observe las colecciones osteológicas de los museos de las islas puede comprobar el alto porcentaje de fracturas bien curadas, lo que implica un tratamiento que englobe la reducción de la fractura, la inmovilización del miembro fracturado y el reposo.

Siempre se especuló con la posibilidad de tratamiento de las fracturas entre los aborígenes canarios hasta que Chil y Naranjo (1900) dio a conocer un descubrimiento de capital importancia en el Barranco de Guayadeque (Gran Canaria): un aparato de inmovilización fracturaria que constaba de los siguientes elementos:

- Una envoltura de piel en la parte más externa.
- Cuerdas de junco y tiras de cuero.
- Vendajes circulares de tela de junco y cuero barnizados en resina.

- En la parte mas interna aparecía un entablillado de tabaiba.

Ello demuestra que, en efecto, los aborígenes conocían la contención de las fracturas. No obstante, hay que señalar que sus limitados conocimientos anatómicos serían un handicap en la reducción de fracturas y luxaciones en ciertos casos.

PRACTICAS CEFALICAS:

Serían de tres tipos: trepanación, cauterización y escarificación. Lo que es imposible contestar es cuando y bajo que circunstancias se pondrían en práctica estas intervenciones sobre el cráneo. Por etnología medica comparada, podría imputarse a creencias magicorreligiosas, sin descartar, por supuesto, fines terapéuticos.

* Trepanación:

Es la mas conocida de todas ellas. Las técnicas usadas en Canarias fueron la de raspado y la de barrenado (ésta se ha observado con mayor frecuencia en La Palma), y los instrumentos con que fueron realizadas eran de basalto u obsidiana. Las islas en las que se ha constatado la práctica de la trepanación son Tenerife, Gran Canaria y La Palma.

Lo que más ha llamado la atención de los investigadores desde las primeras observaciones de Luschan (1896) ha sido la alta tasa de supervivencia y la ausencia, en gran número de casos, de complicaciones. Los lugares donde aparecen son el frontal y el parietal principalmente, y con menos frecuencia sobre la sutura sagital o interparietal (esto sólo se ha comprobado en La Palma).

Los motivos, como ya se ha apuntado, no están nada claros ya que no se ha encontrado ninguna relación con procesos patológicos que dejen su impronta en el cráneo. Bosch Millares (1961-62) apunta la posibilidad de que se emplearan en casos de cefalea e hipertensión intracraneal como medio de salida de los "espíritus causantes del mal". Pero, lo cierto es que esto es muy especulativo.

* CAUTERIZACION:

Fueron descubiertas por von Luschan en 1896 y descritas por Lehmann-Nitsche en 1903. Podemos decir que su práctica estuvo bastante difundida en nuestro archipiélago.

Los lugares del cráneo donde se han observado con mayor frecuencia son la zona bregmática (cauterización bregmática), la zona sagital (cauterización en T-Sincipital), sobre el inion (cauterización suprainiana) y, en general, en cualquier parte de la bóveda craneal como cauterizaciones puntiformes. Al contrario que la trepanación los fines parecen ser la terapéutica revulsiva, ya que se las ha encontrado asociadas a diferentes tipos de fracturas y a ciertos casos de sinusitis frontal.

La técnica empleada en la cauterización variaba según los casos. Unas veces se realizarían por medio de instrumentos líticos calentados al rojo y en otras ocasiones se emplearía grasa de animales hirviendo (empleando cañas de junco para colocar la sustancia en el lugar elegido, Abreu Galindo, 1602).

* Sangría:

Es este un método universalmente extendido para tratar diferentes dolencias, y que también fue utilizado en las islas con alta frecuencia, tal como citan las fuentes escritas y se puede comprobar por medio del examen paleopatológico.

En general se practicaba la sangría (valiéndose de las "tabonas" de obsidiana) en los lugares donde se localizaba la dolencia. Los lugares del cráneo donde más aparecen son el frontal (sobre los surcos vasculares para hacerla más efectiva) y los parietales.

Según Sigerist (1987 [1951]), pudo emplearse en casos de fiebre elevada por la repentina mejoría que se experimenta, como se ha podido comprobar en los indios Arapahoes de América del Norte. La interpretación de la mayoría de las culturas primitivas y arcaicas ante este hecho es que la sangre es un vehículo de salida del demonio o de los espíritus malignos.

AMPUTACIONES:

Indica Sigerist (op. cit.) que no hay duda de que las amputaciones quirúrgicas fueron llevadas a cabo ocasionalmente por los primitivos, aunque es indudable que muy raramente. En Canarias no se ha podido comprobar ningún caso por medio del análisis paleopatológico, aunque Abreu Galindo (1602) señala que Mayantigo, el líder palmero, sufrió una herida en la mano y en la muñeca derecha que se gangrenaron y él mismo se la cortó, por lo que desde entonces se le conoció como Aganeyé (el del brazo cortado). De todas maneras, este comentario —según Rodríguez Martín et al (1986)— no es suficiente argumento para afirmar que los canarios conocieran algún tipo de técnica para la amputación.

CONDUCTA SEXUAL: OBSTETRICIA: NEONATOLOGIA:

Es uno de los temas más interesantes pero menos estudiados de la Prehistoria insular, y aunque nada sabemos de los tabúes sexuales tan frecuentes entre los pueblos primitivos (Sigerist, 1987 [1951]) hay una serie de datos que pueden ser muy interesantes.

Mucho se ha debatido en cuanto a la poliandria y a la poligamia entre los aborígenes canarios. Torriani (1592) afirma que solamente en El Hierro los hombres casaban con cuantas mujeres querían, respetando sólo a las madres (este hecho es señalado también por Abreu Galindo (op. cit.) para Tenerife. En general, los canarios sólo respetaban a madres y hermanas, pero en Teneri-

fe los nobles de alta alcurnia podían casarse con sus hermanas para no impurificar su sangre si faltaban mujeres de su propia estirpe.

Dado el hábitat insular y las normas que regían sus casamientos puede deducirse que la consanguinidad no fue precisamente un problema pequeño, que tratarían de solucionar por medio de cruzamientos de miembros de diferentes grupos.

Uno de los temas más importantes en cualquier comunidad de este tipo es el del embarazo-parto. Señala Sigerist (op. cit.) que para favorecer la fecundación es muy frecuente encontrar esculturas de diferentes animales en posición de cópula o de animales de gran fortaleza sobre mujeres embarazadas. En las fuentes se pueden encontrar vestigios de esta práctica en Gran Canaria: un macho cabrío en posición de cópula con una cabra.

Del embarazo nada sabemos, pero sí del parto. Las fuentes (Espinosa, 1594, Abreu, 1602, y Viana, 1604) hablan de la existencia de comadronas, que serían unas mujeres con las que nadie podía tener relación sexual y cuyo oficio era atender a las parturientas y a los niños recién nacidos. Espinosa (1594) niega que su función se tratara de una práctica bautismal, sino más bien de un lavatorio similar al de otros pueblos. La Paleopatología ha demostrado que participaban activamente en los partos difíciles. En efecto, Rodríguez Martín y Rodríguez Maffiotte (1989) han estudiado un feto de 6-7 meses, procedente de Tenerife, en el que se observan lesiones típicas de maniobras de extracción (luxación fractura de las cervicales C6 y C7 y fractura de clavícula).

En cuanto a la neonatología poco también es lo que sabemos. Abreu Galindo y Torriani señalan que en El Hierro, antes que el pecho, las mujeres daban a sus hijos los "aguamanes" (pasta de helecho y manteca). Este hecho es común a muchos pueblos de similares características (Sigerist, 1987 [1951]). Pero para el gran historiador de la medicina esto se relaciona más con el destete de los niños para prevenir los vómitos al pasar a una dieta sólida, que con una primera comida. Pudiera ser que los antiguos historiadores hubieran malinterpretado este dato ya que difícilmente el estómago de un niño de horas puede aguantar un condimento semejante, ya difícil de digerir por un estómago adulto.

Un hecho especial en la Prehistoria de Canarias es el infanticidio femenino practicado en Gran Canaria después de que se tuviera la primera hija. Esto es explicable, tal y como se ha observado en otros pueblos, cuando la superpoblación amenaza a la subsistencia del grupo por escasez de recursos (Hassan, 1981).

Nada sabemos, y creemos que será muy difícil de saber, en cuanto a las medidas de contracepción empleadas por los antiguos canarios.

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HISTORIA

IL PROBLEMA DELLE FONTI NELLA DESCRIZIONE DELLE CANARIE DI ALVISE DA MOSTO

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Quella dei Da Mosto era una tipica famiglia mercantile veneziana del XV secolo, il cui benessere economico era stato creato dal nulla, a poco a poco, frutto del duro e rischioso lavoro dato dai commerci per mare. Inoltre il padre di Alvise, Giovanni, non era stato molto fortunato con alcune operazioni finanziarie, e non avendo le doti di buon amministratore, vi fu un momento in cui arrivò molto vicino alla rovina, anche a causa della sua cattiva fama di uomo disonesto che ormai si era diffusa nell'ambito commerciale veneziano.¹

Perciò, da un lato la tradizione marinara di Venezia, dall'altro la sfavorevole circostanza economica familiare, condussero Alvise a scegliere di aggregarsi in giovane età ad una flotta mercantile, allo scopo di cominciare a farsi un'esperienza marittima, come egli stesso ci ha tramandato nelle sue memorie:²

... Venezia l'anno del Signore 1454, essendo di età di circa anni ventidue, avendo navigato per alcune parti di questi nostri mari mediterranei, avea determinato di tornare in Fiandra ...

Da quel momento in poi la fortuna comincia a farsi sentire anche per i Da Mosto: non abbiamo particolari in proposito, e non sappiamo come Alvise riuscì a pagare i debiti del padre e a diventare un ricco mercante, ma ancor oggi rimane la testimonianza architettonica del benessere raggiunto dalla famiglia nel bel palazzo in stile bizantino che si affaccia sul Canal Grande. (Fig. 1)

Avendo quindi cominciato a navigare poco più che adolescente, Alvise non ebbe certamente modo di dedicarsi a studi umanistici e letterari: la sua vera scuola fu il mare, questo certamente forgiò il suo carattere e la sua personalità, ma a ciò si aggiunge una particolare inclinazione di narratore, innata nella sua



Fig. 1: Palazzo Da Mosto, antica residenza di Alvise, come appare oggi: l'edificio, di architettura ispirata a modelli bizantini, all'epoca di Alvise era limitato alla porta sull'acqua e al primo piano con colonnato. Nei secoli successivi vennero aggiunti i due piani superiori, e dal XVI al XVIII secolo divenne «Albergo del Leon Bianco».

sensibilità di viaggiatore, e quindi di osservatore del mondo.

Già quel suo primo viaggio alle Fiandre, (Belgio) gli fece nascere la curiosità di spingersi verso altre terre, verso altri popoli, certamente animato dalla voglia di uscire al più presto dalla povertà, ma scegliendo per questo problema una soluzione che dimostra sia la tenacia del suo animo che la voglia d'avventura e di conoscenza che si portava dentro: quella di affrontare e sfidare l'Oceano, di conoscere i segreti delle regioni equatoriali e delle popolazioni che le abitavano e, se possibile, ricavarne gloria e profitto. La sua scelta fu molto coraggiosa, per la mentalità del tempo forse addirittura folle, determinata da una ferma volontà di arrivare in luoghi mai toccati prima da un Europeo e confidando solo nelle sue proprie forze, come egli stesso specifica:³

... per nostre giornate navigammo tanto, che Dio per sua misericordia, quando li piacque, ne condusse a buon porto ...

Forse può essere che il suo giovane orgoglio fosse stato sollecitato da quei popolarissimi versi di Dante (Inferno, Canto XXVI) che, immaginando l'estrema avventura di Ulisse, sembrano quasi rieccheggiare quelle sue parole:

...considerate vostra semenza: fatti non foste a viver come bruti, ma per seguir virtute e conoscenza...

E' probabile anche che Alvise abbia pensato in qualche momento di considerarsi un nuovo Ulisse, perché in effetti lo fu in un certo modo, dato che anch'egli, come l'Eroe di Omero, sfidò gli dèi e i pericoli dell'ignoto senza mai cedere e senza mai perdere di vista il suo scopo.

Ma le oneste descrizioni "etnografiche" che ci ha lasciato nel suo diario⁴ dimostrano chiaramente che accanto al suo legittimo desiderio di ottenere successo nel mondo commerciale, egli aveva anche ambizione di conoscere usi e tradizioni delle etnie con le quali entrava in contatto, e non superficialmente come in genere facevano i mercanti-viaggiatori di allora, ma sforzandosi sinceramente di capire e penetrare psicologicamente quelle società così aliene agli occhi di un Europeo.

Ma prendiamo in esame le sue brevi note descrittive sulle Isole Canarie. Si è detto che lo scopo primario delle due spedizioni esplorative di Da Mosto (1455 e 1456) è quello di "aprire" nuovi mercati spingendosi il più possibile a Sud, quindi il navigatore veneziano non ebbe certamente il tempo di conoscere dettagliatamente le singole isole, eppure non rinuncia a descriverle nel suo diario, ben sapendo che a quel tempo le isole già avevano perduto il ruolo di "terre sconosciute".

Forse la piccola spedizione fece scalo nell'arcipelago, almeno per rifornirsi d'acqua potabile in vista del lungo viaggio (ancora non si sapeva dell'esistenza delle Isole di Capo Verde, che lo stesso Da Mosto scoprirà casualmente), quindi senza sostare a lungo, ma Da Mosto riesce ugualmente a fornire notizie precise, anche se ridotte, su ciascuna isola. A questo proposito riteniamo opportuno riportare *integralmente* il brano del suo diario della Prima Navigazione Atlantica (1455), in cui appunto elenca tutte le notizie certe in suo possesso riguardanti l'arcipelago canario.

«V. Delle sette isole delle Canarie, e delli loro costumi.

»Partimmo dalla infrascritta Isola di Madera seguendo il nostro cammino per ostro; e pervenimmo alle isole di Canaria, che sono distanti dall'Isola di Madera circa miglia trecento e venti. Queste isole di Canaria sono sette: quattro abitate da Cristiani, cioè Lanzarotta, Forte-Ventura, la Gomera e il Ferro; tre sono d'idolatri, cioè la Gran Canaria, Teneriffe, la Palma. Il signore di queste abitate da' Cristiani è nominato Ferrera, gentiluomo e cavalier naturale della città di Sibillia [Siviglia] e soggetto al re di Spagna. Il vivere di questi Cristiani, per quello che hanno queste isole, è pan d'orzo, carne e latte assai, e principalmente di capra, delle quali ne hanno molte: non hanno vino nè formento, se d'altre parti non ve n'è portato; porchi frutti, nè quasi niuna altra cosa buona hanno. Truovasi in queste isole copia di asini salvatichi, e specialmente nell'isola del Ferro. E sono queste isole lontane l'una dall'altra da quaranta in cinquanta miglia: tutte stanno alla fila l'una dopo l'altra, e guardasi la prima con l'ultima, quasi levante e ponente.

»Si tragge da queste isole gran somma d'una erba che si chiama oricello, con il quale si tingono panni: il qual capita in Calese (Cadice) e al rio di Sibillia [Siviglia], e di lí si naviga per levante e por ponente.

Traggesi eziam gran somma di corami di capra che sono grossi e in tutta perfezione; e sevo [*sego*] assai, e anche di buoni formaggi.

»Gli abitanti di queste quattro isole soggette a' Cristiani sono Canarj, e sono differenti di linguaggio, e poco s'intende l'un con l'altro: le quali isole non hanno alcuno luogo murato, salvo villaggi; ma hanno ridotti nelle montagne, per esser quelle altissime; e passi monto forti, che tutto il mondo non gli piglieria, salvochè per assedio. Questo basti quanto alle quattro abitate da Cristiani: cadauna delle dette isole è grande, e la minore di esse non volge meno di novanta miglia. Le altre tre, abitate da idolatri, sono maggiori e molto meglio abitate; e specialmente due cioè la Gran Canaria che fa da circa otto in nove mila anime, e Teneriffe che è maggior di tutte tre, che si dice aver da quattordici in quindici mila anime: la Palma fa poca gente; è bellissima isola a vedere. Le quali tre isole, per esser abitate da molta gente da difesa, con montagne altissime, e luoghi pericolosi, i quali sono forti, non si hanno mai potuto soggiogar da' Cristiani.

»Di Teneriffe, che è la più abitata, è da farne menzione; chè è una delle più alte isole del mondo, e vedesi con tempo chiaro un grandissimo cammino. E da marinari degni di fede ho inteso, quella aver vista in mare, a suo arbitrio, da settanta in settanta leghe di Spagna, che sono da dugentocinquanta miglia delle nostre; perchè ha una punta, over monte, nel mezzo dell'isola a modo di diamante, che è altissima, e continuamente arde. E questo si puote intendere da Cristiani che sono stati prigionieri in detta isola, che affermano, la predetta punta esser alta dal piede fino alla cima leghe quindici di Portogallo, che sono miglia sessanta delle nostre italiane.

»In questa isola hanno fra loro nove signori, chiamati duchi: non sono signori per natura, che succeda il figliuolo al padre; ma chi più può è signore. E fanno alle volte fra loro guerre, ammazzandosi come bestie. Non hanno altre armi, che pietre, e mazze a modo di dardi, e alla punta mettono un corno aguzzo in luogo di ferro: le altre che non hanno corno sono abbruciate nella punta, e fassi quel legno duro come ferro; e con quello offendono. Vanno sempre nudi; salvochè alcuni pur si mettono certe pelli di capra, una davanti, l'altra didietro: e ungonsi la carne di sevo di becco composto con sugo d'alcune loro erbe, che ingrossa la pelle, e difende dal freddo; benchè poco freddo regni in quelle parti, per esser verso l'ostro. Non hanno case di muro nè di paglia: stanno in grotte, ossia in caverne di montagne, vivono d'orzo e di carne, e latte di capra, di che ne hanno abbondanza; e di alcuni frutti, specialmente di fichi. E per esser il paese molto caldo, raccolgono le sue biade del mese di marzo e d'aprile.

»Non hanno fede; ma adorano, alcuni il sole, altri la luna e altri pianeti; e hanno nuove fantasie di idolatria.

»Le femmine sue non sono comuni; ma a ciascuno è lecito pigliarne quante vuole: e non torriano femmine vergini, se prima non dormissero col signor suo una notte; e questo lo reputano grande onore.

»E se mi fusse detto come si sa queste cose, rispondo che gli abitanti delle quattro isole de' Cristiani hanno per costume con alcune loro fuste andar ad assaltar queste isole di notte per pigliar di questi Canarj idolatri; e alle volte ne prendono maschi e femmine, e li mandato in Ispagna a vendere per ischiavi: e intraviene che allefiate rimangono presi alcuni delle fuste, i quali i detti Canarj non fanno morire, ma fannoli ammazzar capre e scorticarle, e far carne, che tengono per vilissimo officio, e per dispregiarli; e li fanno far fino a tanto che si possano riscuotere [*liberare*].

»Hanno detti Canarj un'altra usanza, che quando li signori suoi entrano nuovamente nella signoria, alcuno si offerisce voler morire per onorar la festa: e vengono tutti ad una certa valle profonda, dove dappoi fatte certe sue cerimonie, e dette alcune parole, quel tale che vuol morire per amor del signore, si getta giuso in quella gran valle, e fassi in pezzi: e dipoi quel signore riman obbligato a far grandissimo onore e beneficio alli parenti del morto. Questo constume brutto e bestiale vien detto esser così, e li Cristiani che sono riscossi [*liberati*] di prigione l'affermano.

»Ancora questi Canarj sono uomini asciutti, e gran corridori e saltatori per esser avvezzi in quelle bricche [*balze*] di quelle isole piene di montagne: e saltano di sasso in sasso, discalzi, come capriuoli; e fanno salti, che non sono da credere. Ancora tirano diritto e fortemente una pietra, sicchè percuotono dove vogliono; e hanno siffatto braccio, che a pochi colpi fanno uno scudo in mille pezzi; dinotandovi che io vidi un Canario cristiano nell'Isola di Madera, che si obbligava, a pegno [*per scommessa*], dare a tre uomini dodici arance a cadauno: e egli ne voleva prendere altre dodici: e si obbligava ferir cadauno di loro con le sue dodici arance in modo, che niuna anderia a fallo; e che mai alcun di loro non lo toccheria con alcuna delle sue, salvochè nelle mani per volersi con quelle riparare; e che non si approssimassero a lui ad otto ovvero dieci passi: e non si trovò chi volesse stare al pegno, perchè ciascuno conosceva ch'ei faria meglio di quello ch'e' diceva. Sicch'io concludo che i più destri e più leggieri uomini che siano al mondo è la progenie di costoro.

»Ancora sanno dipingersi, così maschi, come femmine, le carni sue con sughi d'erbe verdi, rossi e gialli: e tengono che simili colori siano una bella divisa, facendone opinione, come facciamo noi delle belle veste.

»E io Alvise fui in due di dette isole di Canaria, cioè nell'isola Gomera, e nel Ferro, che sono de' Cristiani; e anche all'isola della Palma, ma in questa non dismontai per seguir il nostro viaggio.»

Evidentemente dunque, il navigatore veneziano, dovette disporre di fonti d'informazione sicure da cui attingere, ma quali? Anche attualmente i marinai, quando scendono nei porti, si informano dai loro colleghi che incontrano sulle caratteristiche del luogo, ma le informazioni in possesso di Da Mosto fanno pensare a qualcosa di più, e dimostrano che il suo interesse per le Canarie si reggeva su solide basi informative, facendo sospettare la lettura da parte sua di qualche fonte antica.

Tutti i giovani europei di nobile famiglia del XV secolo conoscevano almeno il latino, se non addirittura il greco, e si potrebbe dunque ragionevolmente credere che durante i lunghi giorni delle sue navigazioni Alvise abbia potuto leggere, tra le altre cose, anche la *Naturalis Historia* di Gaio Plinio Secondo, detto "il Vecchio". Vediamo dunque, per un confronto, questa fonte classica, anch'essa integralmente per quanto riguarda le Canarie⁵

«Traditur et alia insula contra montem Atlantem, et ipsa Atlantis appellata. Ab ea v dierum praenavigatione solitudines ad Aethiopas Hesperios et promunturium quod vocavimus Hesperu Ceras, inde primum circumagente se terrarum fronte in occasum ac mare Atlanticum. Contra hoc quoque promunturium Gorgades insulae narrantur, Gorgonum quondam domus, bidui navigatione distantes a continente, ut tradit Xenophon Lampsacenus. Penetravit in eas Hanno Poenorum imperator prodiditque hirta feminarum corpora, viros pernicitate evasisse; duarum Gorgadum cutes argumenti et miraculi gratia in Iunonis templo posuit, spectatas usque ad Carthaginem captam. Ultra has etiamnum duae Hesperidum insulae narrantur, adeoque omnia circa hoc incerta sunt, ut Statius Sebosus a Gorgonum insulis praenavigatione Atlantis dierum XL ad Hesperidum insulas cursum prodiderit, ab his ad Hesperu Ceras unius. Nec Mauretaniae insularum certior fama est. Paucas modo constat esse ex adverso Autololum a Iuba repertas, in quibus Gaetulicam purpuram tinguere instituerat.

»Sunt qui ultra eas Fortunatas putent esse quasdamque alias, quo in numero idem Sebosus etiam spatia complexus Iunoniam abesse a Gadibus DCCL p. tradit, ab ea tantundem ad occasum versus Pluvialiam Caprariamque; in Pluvialia non esse aquam nisi ex imbri. Ab iis CCL Fortunatas contra laevam Mauretaniae in VIII horam solis; vocari Invallem a convexitate et Planasiam a specie, Invalis circuitu CCC p.; arborum ibi proceritatem ad CXL pedes adulescere. Iuba de Fortunatis ita inquisivit: sub meridiem quoque positas esse prope occasum, a Purpurariis DCXXV p., sic ut CCL supra occasum navigetur, dein per CCCLXXV ortus petatur. Primam vocari Ombrion, nullis aedificiorum vestigiis; habere in montibus stagnum, arbores similes ferulae, ex quibus aqua exprimatur, e nigris amara, ex candidioribus potui iucunda. Alteram insulam Iunoniam appellari; in ea aediculam esse tantum lapide exstructam. Ab ea in vicino eodem nomine minorem, deinde Ca-

prariam, lacertis grandibus refertam. In conspectu earum esse Ninguariam, quae hoc nomen acceperit a perpetua nive, nebulosam. Proximam ei Canariam vocari a multitudine canum ingentis magnitudinis -ex quibus perducti sunt Iubae duo-; apparere ibi vestigia aedificiorum. Cum omnes autem copia pomorum et avium omnis generis abundant, hanc et palmetis caryotas ferentibus ac nuce pinea abundare; esse copiam et mellis, papyrum quoque et siluros in omnibus gigni. Infestari eas beluis, quae expellantur adsidue, putrescentibus.»

Si dice anche che

«di fronte al monte Atlante ci sia un'altra isola, anch'essa detta di Atlante, dalla quale in 5 giorni di navigazione, lungo zone desolate, si raggiunge la terra degli Etiopi Esperi e il promontorio che abbiamo chiamato Esperu Cheras, punto in cui la linea di costa comincia a piegarsi verso ovest e verso l'Oceano Atlantico. Si racconta che anche di fronte a questo capo ci siano delle isole, un tempo sede delle Gorgoni, le Gorgadi, ad una distanza dal continente, secondo Senofonte Lamp-saceno, di due giorni di navigazione. Esse furono raggiunte dal generale cartaginese Annone, il quale riferì di avere visto che i corpi delle loro donne erano ricoperti da una fitta peluria; gli uomini invece erano riusciti a fuggire grazie alla loro velocità. A riprova di ciò e per suscitare curiosità egli depose nel tempio di Giunone a Cartagine le pelli di due indigene delle Gorgadi, che rimasero esposte fino a che la città non fu presa dai Romani. Si narra che al di là di tali isole si trovino le due Esperidi, ma tutte le informazioni in merito sono così confuse che Stazio Seboso le pone a 40 giorni di navigazione dalle Gorgadi oltre il monte Atlante, e a un solo giorno da Esperu Cheras. E certo non c'è meno dubbio sulle isole della Mauritania: di esse si sa soltanto che Giuba ne aveva scoperto un piccolo arcipelago di fronte alla terra degli Autololi e che lì aveva istituito un centro per la tintura delle stoffe di porpora getulica.

»Qualcuno pensa che, oltre queste, si trovino le Isole Fortunate e altre ancora, a proposito delle quali il suddetto Seboso dà anche alcune misure, riferendo che Giunonia dista da Cadice 750 miglia e che altrettanto ne distano Pluvialia e Capraria, poste più a ovest. Aggiunge che a Pluvialia non si trova acqua se non dopo che è piovuto. Le Isole Fortunate distano da queste 250 miglia e sono situate di fronte alla parte sinistra della Mauritania, in direzione ovest nord-ovest. Una di esse si chiama Invali per la sua superficie convessa; essa misura 300 miglia di circonferenza; un'altra, Pianosa, prende il nome dalla sua conformazione. L'altezza degli alberi raggiunge lì i 140 piedi. A proposito delle Isole Fortunate Giuba ha accertato i seguenti dati: esse giacciono in direzione sud-ovest e distano dalle Purpurarie 625 miglia, a

patto che, per 250 miglia, si tenga una rotta di nord-ovest e poi per 375 si punti decisamente a est. La prima isola che si incontra si chiama Ombrio e non ha traccia di edifici: nei monti c'è un lago, i suoi alberi sembrano canne e da essi si estrae l'acqua, amara da quelli scuri, potabile da quelli chiari. La seconda isola ha il nome di Giunonia e in essa c'è solo un tempietto di pietra. Nelle sue vicinanze c'è un'altra isoletta con lo stesso nome e più oltre Capraria, che pullula di grosse lucertole. Di fronte a queste si trova Ninguarua, sempre avvolta da nubi, il cui nome deriva dal fatto che è innevata durante tutto l'arco dell'anno. Vicino giace Canaria, che deve il proprio nome alla moltitudine di cani di grosse dimensioni che la popolano (Giuba ne riportò due con sé) e che conserva visibili tracce di edifici. Mentre tutte quelle isole abbondano di una grande quantità di frutti e di uccelli di ogni genere, Canaria è ricca anche di palme da datteri e di pigne. Vi si trova anche molto miele e i fiumi pullulano di piante di papiro e di pesci siluro; queste isole sono infestate poi da carcasse putrescenti di animali, che vengono in continuazione gettate sulla riva.»

Il paragrafo 36, da 199 alla fine, riporta le poche notizie, per di più incerte e confuse, che al tempo di Plinio esistevano circa le terre situate al di là delle "Colonne d'Ercole" (Stretto di Gibilterra): l'Autore stesso dimostra di credere poco a ciò che riporta, facendo largo uso di espressioni quali *si dice, si racconta, si narra*, sottolineando in tal modo trattarsi di un miscuglio di dicerie false, di notizie vere ma molto travisate, di errate interpretazioni, di fatti leggendari o mitologici, ecc. L'impressione complessiva che se ne ricava conferma quei concetti di paura e di mistero che caratterizzavano la mentalità collettiva dei popoli mediterranei, che consideravano l'Oceano Tenebroso abitato da mostri e da esseri fantastici: in questo spirito narrativo Plinio cita appunto le due pelli pelose delle indigene delle "Isole Gorgadi". L'unico dato meritevole di credibilità è costituito dal riferimento alla tintura delle stoffe per mezzo della *porpora getulica*; forse un'interpretazione latina della *orchilla* canaria. Ma il vero e proprio accenno alle "Isole Fortunate" si ha al paragrafo 37, che rivela ugualmente le scarse conoscenze che si avevano in Età Classica sull'arcipelago, ma almeno fornisce un elenco abbastanza esatto di nove isole (Invallem, Planasiam, Ombrio, Iunonia Minor e Iunonia Major, Caprariam, Ninguariam, Canariam, Pluvialiam).

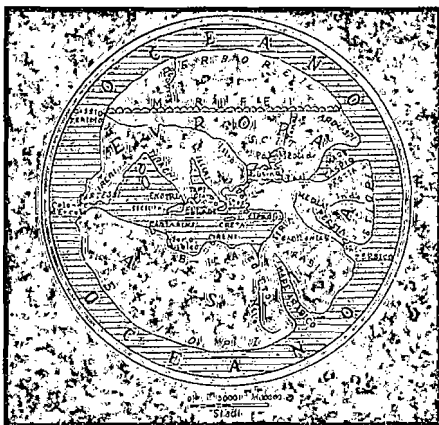


Fig. 2: Il mondo secondo la cosmologia di Anassimandro di Mileto.

Ci sono elementi che lasciano intravedere che la fonte di cui si servì Plinio conteneva delle verità, come ad esempio anche gli accenni alle grandi lucertole e alle nevi del Teide. Ma nel complesso tutta la descrizione è animata da una grande dubbiosità e integrata da una buona dose di fantasia, tutte cose diametralmente opposte alle peculiarità che troviamo nei diari di Da Mosto, sempre veritieri, contenenti notizie scrupolosamente controllate e perciò autentiche. Non a caso il Veneziano chiude il suo diario della Seconda Navigazione Atlantica (1456) con questa frase:⁶

«E qui finisce il mio secondo viaggio che io Alvise Da Mosto ho fatto a trovare cose da non credere dalla gente strana, ma sono verissime, e senza bugia perchè sono più che io non scrivo si nei costumi come nel vivere. Finis».

Eppure egli si fermò effettivamente solo in due isole come ci specifica alla fine del suo brano sulle Canarie (Prima Navigazione Atlantica): scese a terra a Gomera e a Hierro, mentre a La Palma, dove pure la nave attraccò, non ne ebbe il tempo, e rimase a bordo. Da dove prese, dunque, le notizie esatte sul resto dell'arcipelago?

Mancava ancora un secolo prima che Juan de Abreu Galindo componesse la sua opera, dunque è assolutamente certo che Da Mosto non vi attinse; per lo stesso motivo cronologico resta esclusa anche l'opera di Leonardo Torriani.

Il testo di Da Mosto riguardante le Canarie si riferisce soltanto alla Prima Navigazione Atlantica, poiché l'anno seguente, durante la Seconda, il navigatore volle tentare di spingersi ancora più a Sud dell'anno precedente, e per poter sfruttare meglio i pochi mesi della buona stagione decise di non sostare nell'arcipelago, continuando a veleggiare verso Meridione. Alvise dice infatti nel diario del secondo viaggio:⁷

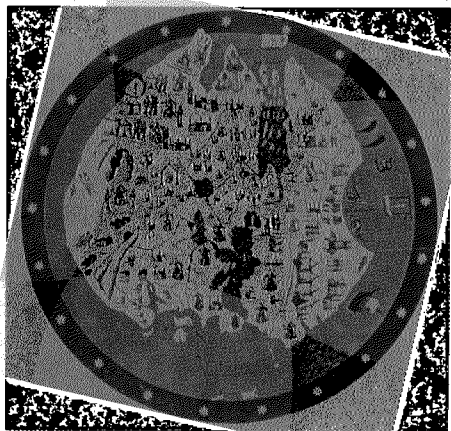


Fig. 3: Planisfero di Andrea Bianco (1436), Venezia, Biblioteca Marciana.

... e tenemmo la volta delle Canarie, e in pochi giorni vi giungemmo: e secondandone il tempo, non curammo di toccar le dette isole...

Del resto anche le sue indagini geografiche preliminari in preparazione dei due viaggi atlantici dovettero basarsi sullo stesso tipo di informazioni raccolte direttamente da altri navigatori, poiché le mappe disponibili ai suoi tempi avevano la stessa approssimazione di quelle di vari secoli prima, considerando che per tutto il Medioevo i progressi nelle co-

noscenze geografiche erano stati praticamente irrilevanti. Se infatti confrontiamo il mappamondo di Anassimandro di Mileto (610-546 a.C.) (Fig. 2) con il planisfero di Andrea Bianco, contemporaneo di Da Mosto (1436), vediamo che le novità circa la "visione" del mondo sono tutto sommato trascurabili (Fig. 3), lasciando sostanzialmente inalterato il concetto secondo cui la Terra veniva immaginata come una grande isola, costellata da varie insenature, galleggiante sull'Oceano, e da esso circondata. Nel mappamondo di Anassimandro (Fig. 2) all'estremo Nord sono situate le terre degli Iperborei, a Sud l'Asia, che comprende anche l'Africa. La terra degli Etiopi, situata all'Estremo Oriente, è attraversata dal fiume Indo. Analoga confusione si evidenzia nel planisfero di Andrea Bianco (Fig. 3), ancor oggi conservato alla Biblioteca Marciana di Venezia: in posizione diametralmente opposta al Mediterraneo sta il Mar Rosso con la Penisola del Sinai; appare già l'arcipelago canario, anche se disegnato molto approssimativamente, con lavoro di fantasia.

Qualche conoscenza superiore circolava nell'area di cultura araba, come dimostra la *Tabula Rogeriana*, opera del cartografo al-Idrisi (1099-1164 ca), geografo arabo attivo presso la corte di Ruggero II re di Sicilia: qui le maggiori variazioni si notano nel settore orientale asiatico: il Golfo di Aden e il Corno d'Africa sono esagerati, mentre invece la regione atlantica non gode di molta attenzione, e i suoi arcipelaghi appaiono costituiti da una serie di isole disposte in fila lungo il margine della mappa (Fig. 4).

In definitiva, da tutto ciò emerge ancor più la personalità "scientifica" di Alvise Da Mosto, che con quelle scarse notizie di poco aiuto e con un'equipaggio di marinai audaci seppe non solo dare un valido contributo alle esplorazioni del XV secolo, ma anche ci lasciò quella che va considerata senza dubbio una delle primissime relazioni "etnografiche" dell'Età Moderna.⁸



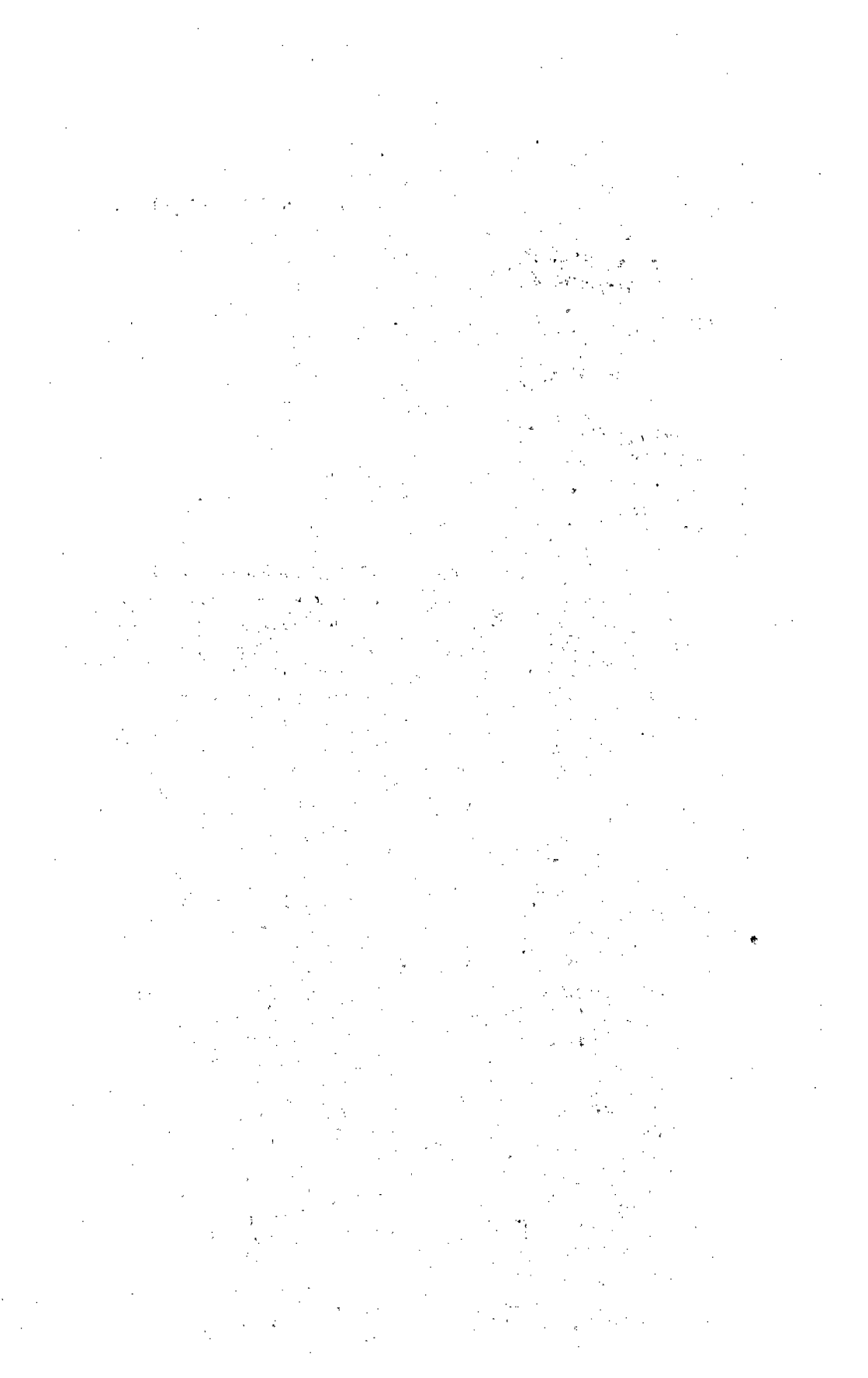
Fig. 4. La *Tabula Rogeriana*, opera del cartografo arabo al-Idrisi (o El Edrisi), 1099-1164 ca.

NOTE BIBLIOGRAFICHE

- 1) - A questo proposito vedi: A. De Vita e M. Dall'Agnola, Su una caravella veneziana, in: *Geodes* n° 1 (1984), pp. 68-75.
- 2) - Questo e tutti gli altri brani tratti dai diari di Da Mosto sono ricavati dall'edizione integrale in italiano moderno, curata da R. Caddeo, *Le navigazioni atlantiche di Alvise Da Mosto, Antoniotto Usodimare e Niccoloso Da Recco*, Milano 1928, 1929, 1956; in quest'ultima e più recente edizione la frase qui citata appare a p. 81, mentre i brani che trattano delle Canarie e dei loro abitanti sono alle pp. 87-91, e qui li riportiamo integralmente.
- 3) - R. Caddeo, *op. cit.*, p. 155.
- 4) - Questo particolarissimo aspetto del diario di Da Mosto è stato esaminato nel *IX Coloquio de Historia Canario-americana*: M. Dall'Agnola e A. Bevilacqua, "Testificación de un navegante-etnólogo del siglo XV: Alvise Da Mosto", Las Palmas, Casa de Colón, 8-12 Ottobre 1990.
- 5) - Riportiamo integralmente il brano della *Naturalis Historia* (VI, 36, 199, e 37, 202-205), dall'ottima edizione Einaudi, Torino 1982, pp. 761-765.
- 6) - R. Caddeo, *op. cit.*, p. 155, nota 1.
- 7) - R. Caddeo, *op. cit.*, p. 141.
- 8) - Per una più ampia bibliografia su Alvise Da Mosto in particolare e sui navigatori italiani del XV secolo rimando ad altri miei precedenti lavori su questo tema, in particolar moda: M. Dall'Agnola, "La scoperta dell'arcipelago di Capo Verde da parte del navigatore veneziano Alvise Da Mosto", in: *Eres (Arqueologia)*, Vol. 1 (1), Santa Cruz de Tenerife, 1990.



PALEOPATOLOGÍA



PALEOPATOLOGIA DE LA NECROPOLIS DE ARTEARA (GRAN CANARIA)

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INTRODUCCION

Los restos estudiados proceden del Túmulo 727 de la necrópolis de Arteara, en el Barranco de Fataga (Gran Canaria), dónde hemos podido determinar la presencia de, al menos, 13 individuos inhumados: un niño de un año, un joven, cinco varones adultos, cuatro mujeres adultas y dos adultos alofisos (Jiménez Brobeil y García Sánchez, 1990). El material óseo no permite un estudio patológico individual puesto que se hallaba revuelto y había sufrido la acción de excavadores aficionados, quienes retiraron la mayor parte del mismo. Ello nos obliga a describir los diferentes procesos detectados en el material analizado de una forma global, sin poder relacionarlos con individuos concretos.

1. PATOLOGIA MAXILO-DENTARIA.

Los restos examinados corresponden a dos cráneos completos, dos maxilares y cuatro mandíbulas en estado fragmentario. En este material hemos observado 115 alvéolos y 67 piezas dentarias permanentes (37 "in situ" y 30 sueltas), correspondientes a ambas arcadas (cuadro 2). A continuación veremos las diferentes entidades que constituyen este apartado, indicando que, dado el escaso tamaño de la muestra, los resultados no resultan muy representativos, y por supuesto no tienen parangón con los de otras poblaciones coetáneas de la Isla.

A) Desgaste en molares.

Para este estudio hemos seguido el procedimiento de Broca (1875), que considera cinco grados de desgaste. De un total de 26 molares observados, el

grado más frecuente es el 3 o de desgaste intenso, seguido del grado 2 y 4, mediano o muy intenso, respectivamente. Por último, el desgaste iniciado, o grado 1, aparece menos frecuentemente, no habiendo ningún ejemplar sin desgaste, o de grado 0 (cuadro 1).

Cuadro 1.- Grado de desgaste dental en molares permanentes.									
Grado 0		Grado 1		Grado 2		Grado 3		Grado 4	
n	%	n	%	n	%	n	%	n	%
-	--	3	11,5	7	26,9	9	34,6	7	26,9

B) Pérdidas "ante mortem".

Las piezas caídas en vida (alvéolos reabsorbidos), ascienden a un total de 15 es decir el 13% (cuadro 2), siendo el primer molar el más afectado. Entre las causas implicadas en este proceso, figuran el desgaste dental, la caries y periodontitis (Hardwick, 1960; Brothwell, 1963 y 1987), aunque también pueden ser la expresión de acontecimientos traumáticos (Brabant et al., 1958; Campillo, 1983), rituales o terapéuticos (Ring, 1989).

C) Caries.

En general, la baja frecuencia de caries en las antiguas poblaciones parece estar favorecida por el menor consumo de carbohidratos refinados (Darling, 1981), determinado por una economía basada en la ganadería, recolección o mixta (Powell, 1985). En la totalidad de las piezas dentarias examinadas, sólo hemos podido comprobar la presencia de dos caries (en un segundo premolar y en un segundo molar), lo que representa el 3% (cuadro 2).

D) Quistes radiculares.

En la mandíbula del cráneo núm. 4, perteneciente a un varón adulto, aparece una lesión de este tipo a nivel de la raíz del segundo premolar derecho. También en un maxilar de un adulto alofiso, existe un quiste apical sobre la raíz del canino izquierdo. Como sucede la mayoría de las veces (Gorlin, 1981), en ambos casos la abertura a la cavidad bucal fue hacia el vestíbulo, tras insuflar la lámina externa a través de un orificio redondeado.

E) Total de piezas lesionadas.

Está constituido por la suma de las pérdidas "ante mortem", caries y quistes radiculares. En total el número de piezas lesionadas asciende a 19, predominando en el primer molar y canino, —aunque en la mayoría de los estudios paleopatológicos el canino suele verse poco afectado—. Según las observaciones de M. Fusté (1961), la población de los Túmulos de Gáldar (Gran Canaria), muestra un mejor estado de salud bucodental que las de las cuevas del interior de Gran Canaria. Asimismo, M. García Sánchez (1980), ha referido la escasa frecuencia de este tipo de patología en los Túmulos de S. Nicolás de

Tolentino (Gran Canaria). Aunque el Túmulo 727 de Arteara muestra una mayor patología, sobre todo a expensas de las pérdidas "ante mortem", insistimos en que no podemos determinar si los valores que aquí presentamos responden al azar o a una mayor incidencia patológica real.

Cuadro 2.- Pérdidas "ante mortem", caries, quistes radiculares y total de piezas lesionadas en dentición permanente de ambos maxilares.

ALVEOLOS OBSERVADOS		DIENTES OBSERVADOS		PERDIDAS "ANTE MORTEM"		CRIES		QUISTES RADICULARES		TOTAL PIEZAS LESIONADAS	
n		n		n	%	n	%	n	%	n	%
115		67		15	13,0	2	3,0	2	1,7	19	16,5

2. OSTEOMA.

Esta neoformación ósea compacta, de pequeño tamaño (1 cm. o menos), se localiza preferentemente en los huesos planos, sobre todo del exocráneo (Zimmerman y Kelley, 1982; López Bote et al., 1983). Aunque el hallazgo en el occipital es poco frecuente (Bosch Millares, 1975; Campillo, 1977; Ortega Vallet, 1989), hemos encontrado un caso en el occipital del cráneo B, perteneciente a un varón adulto. Se encuentra localizado 15 mm. a la derecha de la línea media y a 10 mm. de L1; es de forma redondeada, de 12 mm. de diámetro y de escasa elevación sobre el plano óseo subyacente.

3. PATOLOGIA ARTICULAR.

Se trata de la lesión más ampliamente representada a nivel óseo, a juzgar por el número de piezas afectadas entre los restos del Túmulo. En la gran mayoría de los casos se trata de lesiones secundarias a artrosis, como vamos a ver seguidamente.

A) Espondiloartrosis.

De las 120 vértebras procedentes del Túmulo 727 (49 cervicales, 47 dorsales y 24 lumbares), 22 ejemplares (18,3%) presentaron signos macroscópicos indicativos de artrosis. Como suele ser característico en esta artropatía, los sectores más afectados son el lumbar y cervical (Maese, 1981; Campillo, 1983). De esta forma, hemos observado como presentan señales de artrosis el 18,4% de las vértebras cervicales, el 10,6% de las dorsales y el 33,3% de las lumbares. A nivel cervical han aparecido manifestaciones de espondiloartrosis en 9 vértebras. En cuatro ocasiones con ligeros labios marginales y porosidades en la superficie discal de estas vértebras; un ejemplar ya presenta osteofitos desarrollados y en otra vértebra se advierte un verdadero aplastamiento del cuerpo. En tres casos la artrosis afectó a las carillas articulares laterales con osteo-

condensación en los márgenes, aplanamiento y porosidades en la superficie articular (lám. I, a-d).

En el sector dorsal, la frecuencia de vértebras afectadas es sensiblemente menor que a nivel cervical y lumbar. Así, de la totalidad de las vértebras dorsales, sólo en cinco ejemplares existen osteofitos más o menos marcados en la periferia del cuerpo vertebral. En la superficie craneal del cuerpo de una de estas vértebras se aprecia un nódulo de Schmorl, consistente en una hernia del núcleo pulposo del disco intervertebral en la sustancia esponjosa del cuerpo vertebral (lám. I, g).

Por último, en el segmento lumbar, seis ejemplares muestran osteofitos en el borde craneal o caudal del cuerpo vertebral. De igual forma, en otras dos vértebras aparece proliferación ósea tanto en el borde craneal como caudal del cuerpo y una de ellas muestra un aplastamiento somático.

B) Artrosis del miembro superior.

A nivel de la clavícula, dos ejemplares derechos masculinos muestran vestigios de esta afección en la cara articular para el esternón; por otra parte, las dos clavículas de otro varón presentan aplanamiento y formaciones osteofíticas en la superficie articular. En ambos casos podemos sugerir que el origen de estas alteraciones sea secundario a una artrosis esterno-clavicular.

En los huesos de la mano, concretamente en un trapecio derecho, hemos advertido la eburneización de la carilla articular para el hueso trapezoides. Asimismo, dos primeros metacarpianos, derecho e izquierdo, muestran ligera neoformación ósea y pulimento en la superficie de la cabeza (artrosis metacarpo-falángica). Por último, en una primera falange aparecen señales de pulido en su extremidad distal y en dos terceras falanges en sus carillas articulares proximales (artrosis interfalángica).

C) Artrosis del miembro inferior.

Han aparecido alteraciones en la superficie articular de una rótula, un metatarsiano y cinco falanges. De este modo, la "fascies articularis" de una rótula izquierda presenta ligeras rugosidades y labios neoformados en la periferia, sugerentes de una artrosis fémoro-patelar.

Un primer metatarsiano derecho muestra en su cabeza una ligera osteofitosis y pulimento de la misma (artrosis metatarso-falángica). En el primer dedo del pie derecho, figuran una primera (lám. I, h) y segunda falange con pequeños osteofitos y pulimento en la extremidad distal y proximal respectivamente, indicativos de artrosis interfalángica. Otro dedo muestra en la primera falange pequeños osteofitos localizados en su extremo proximal y pulimento de la cabeza (artrosis metatarso-falángica); la segunda falange, muy deformada, presenta osteofitos y pulimento en su extremidad proximal y bruñido en la distal, sugerentes de artrosis interfalángica (lám. I, f). Finalizando con el miembro inferior, otra primera falange muestra aplanamiento y agrandamiento de la superficie articular distal, indicativos de artrosis interfalángica.

3. TRAUMATOLOGIA.

Entre los restos óseos estudiados, han aparecido varias lesiones traumáticas en la clavícula, cúbito, peroné y pelvis, tal como hemos podido comprobar macroscópicamente y confirmado por radiología convencional.

A) Fractura del tercio medio de la clavícula.

Se trata de una clavícula derecha, perteneciente a una mujer adulta, a la que falta el extremo acromial. En ella se aprecia un callo de fractura en el tercio medio y una pérdida de la incurvación fisiológica, de tal manera que el fragmento externo está rotado unos 90° hacia adelante; de esta forma la cara craneal pasa a ser —merced a esta rotación— anterior y la caudal, posterior (lám. II, c). Sin duda, el resultado funcional, especialmente en la articulación acromioclavicular, debió verse dificultado por la anormal orientación de la extremidad acromial.

B) Traumatismo en la extremidad proximal del cúbito.

En un cúbito izquierdo, de una mujer, llama la atención una notable alteración de la superficie articular en la que aparecen signos de artrosis, seguramente secundarios a un traumatismo (lám. II, b). De este modo, la normal anatomía de la cavidad sigmoidea mayor presenta una serie de modificaciones debido a los fenómenos de proliferación y degeneración ósea. A este nivel, aparece la superficie articular con un aspecto muy irregular con numerosas excrescencias; también el pico del olecranon y la apófisis coronoides están deformados, apreciándose numerosos osteofitos en su periferia, así como en todo el borde de la “incisura semilunaris”.

Por contra, tanto la carilla articular para el radio (“incisura radialis ulnae”), como la superficie articular distal de este cúbito, son macroscópicamente normales, así como el cúbito derecho, donde tampoco se aprecia ninguna alteración.

Sin duda, las secuelas funcionales en el codo izquierdo debieron ser importantes, con dificultades al realizar movimientos, especialmente de flexo-extensión.

C) Fractura de la extremidad distal del peroné.

A nivel del tercio distal del peroné derecho de una mujer, se aprecia un callo de fractura con ligera desviación lateral del extremo distal, más evidente si se observa el perfil de este hueso (lám. II, a). La fractura está bien consolidada, apareciendo en la cara interna, —a unos 15 mm. por encima de la carilla articular para el astrágalo—, varias exóstosis terminadas en pico. En la periferia de esta carilla articular existen además discretos osteofitos, por lo que suponemos cierta repercusión a nivel de la articulación del tobillo.

D) Fractura de las falanges

En el esqueleto del pie han aparecido dos fracturas de escasa consideración que afectan al tercio medio de dos primeras falanges. Ambas presentan un buen estado de consolidación, si bien una de ellas presenta una ligera angulación dorsoplantar (lám. I, e).

E) Fractura del anillo pelviano

Mención especial merece este traumatismo por su rareza en paleopatología, aún cuando hoy día son relativamente frecuentes debido, sobre todo, a los accidentes de tráfico y laborales.

En el estudio de los restos óseos de Arteara hemos observado, en una pelvis femenina, una fractura bilateral, localizada en la parte anterior del anillo pelviano y otras alteraciones a nivel de la articulación sacroilíaca derecha (lám. III y IV).

Por una parte, existe una fractura de las ramas isquio e iliopúbicas del lado izquierdo. Generalmente, estas dos lesiones suelen ir asociadas y en este caso existe un acortamiento transversal del agujero obturador, con formación entre ambos fragmentos de un callo de fractura, más evidente en la rama iliopúbica.

En el lado derecho, hay otra fractura que afecta también a ambas ramas, si bien en este caso la defectuosa consolidación no dio origen a un auténtico callo, apareciendo la sínfisis y parte de las ramas isquio e iliopúbica integradas en un fragmento que queda separado del resto del hueso. Seguramente en el vivo, agotado el período de consolidación, la unión entre ambos fragmentos debió estar mantenida por la formación de una pseudoartrosis, que originaría graves problemas funcionales, ya que, en estos casos, persiste la movilidad en el foco y más donde existe una articulación de carga como es la coxo-femoral.

La fractura inicial y la inestabilidad resultante, parece ser la responsable de las alteraciones que observamos en la articulación sacroilíaca derecha. En ambas caras articulares se aprecian evidentes signos osteoartrosicos, como proliferación ósea, irregularidad de las superficies articulares y acusado desgaste y aplanamiento, especialmente en el ala derecha del sacro.

Aunque la consolidación de estas fracturas es buena, por tratarse de un hueso esponjoso y bien vascularizado, es necesario al menos de 40 a 60 días en decúbito supino y la precoz rehabilitación de las extremidades y de la musculatura abdominal, eso sin contar con las frecuentes complicaciones urológicas y vasculares que suelen ir asociadas a este tipo de traumatismos (Deltoro, 1980). Por ello, suponemos que la paciente debió necesitar de unos cuidados durante este período y, posteriormente, la ayuda de algún apoyo (muletas, bastones?) para favorecer la deambulación. De todas formas, la curación no fue completa y quedaron importantes secuelas que, como hemos dicho antes, darían lugar a cierta impotencia funcional, especialmente del miembro inferior derecho.

RESUMEN Y CONCLUSIONES

Los restos estudiados no ofrecen un grupo de población homogéneo debido, sobre todo, a lo revuelto del material, por lo que la integridad de los esqueletos es prácticamente nula. No obstante, hemos podido determinar la existencia de unos trece individuos de ambos sexos, de edad variada, que va desde la primera infancia hasta la edad adulta.

En general, el estado de salud buco-dental podemos considerarlo como aceptable, aunque existe un acusado *desgaste dentario*, predominando los grados intenso (34,6%) y muy intenso (26,9%). Si bien la frecuencia de *caries dental* es baja (3,0%), existe un mayor número de *reabsorciones alveolares* (13,0%) y escasa aparición de *quistes radiculares* (1,7%).

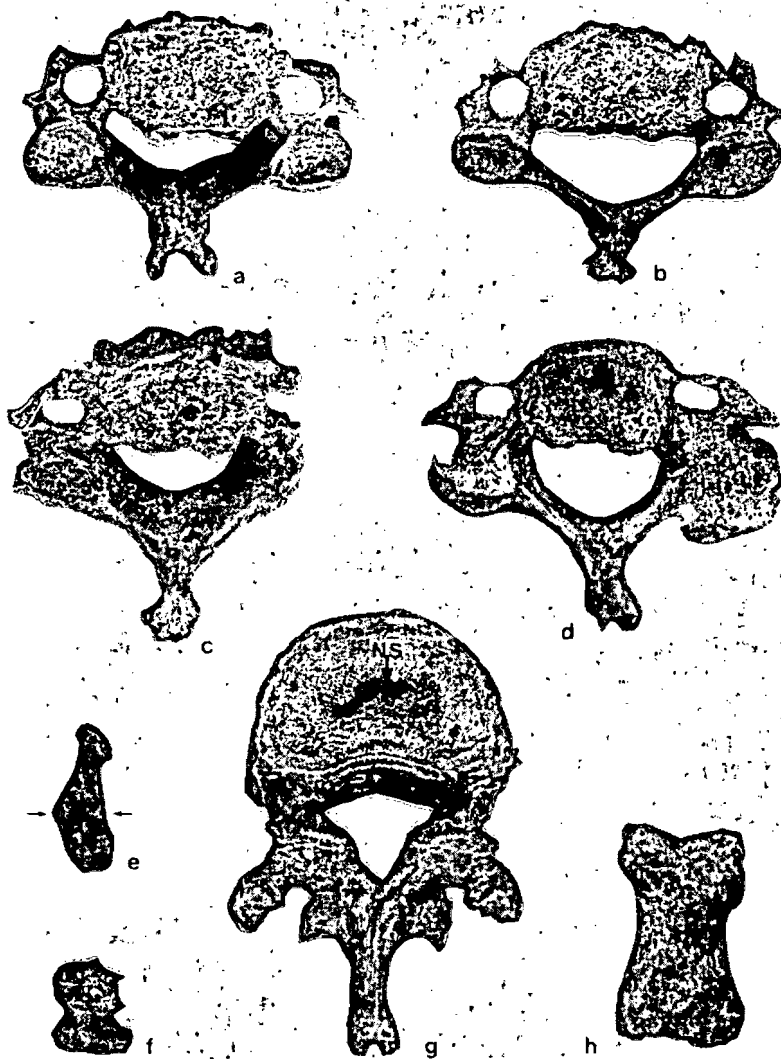
En el esqueleto post-craneal han aparecido numerosos estigmas secundarios a *artrosis*. En este sentido, la columna vertebral está frecuentemente afectada por esta enfermedad, especialmente en los sectores lumbar (33,3%) y cervical (18,4%). En el miembro superior hemos observado signos de artrosis esternoclavicular en dos ocasiones, así como en diferentes huesos de la mano, tanto del carpo como del metacarpo. También en la articulación sacroilíaca derecha y en la cavidad sigmoidea mayor de un cúbito izquierdo, pertenecientes ambos a una mujer, se aprecian signos de artrosis presumiblemente post-traumática. Tampoco las extremidades inferiores han estado exentas de este tipo de enfermedad, ya que diferentes huesos presentan alteraciones de origen artrósico, como son el caso de una rótula, un primer metatarsiano y cinco falanges.

Las *lesiones traumáticas* han afectado al tercio medio de una clavícula, a la extremidad proximal de un cúbito y a la extremidad distal de un peroné. Hemos de destacar un importante traumatismo de pelvis, con pérdida de la continuidad del cinturón pelviano y que afecta de forma bilateral a las ramas ilio e isquiopúbicas. Ya que esta fractura suele ir asociada a otros traumatismos, -y considerando que las características métricas y no métricas de los huesos traumatizados parecen corresponder a un mismo individuo-, podemos sugerir que estas lesiones correspondan a la misma mujer tras un grave politraumatismo. Otras fracturas de menor importancia son las aparecidas en dos primeras falanges del esqueleto del pie.

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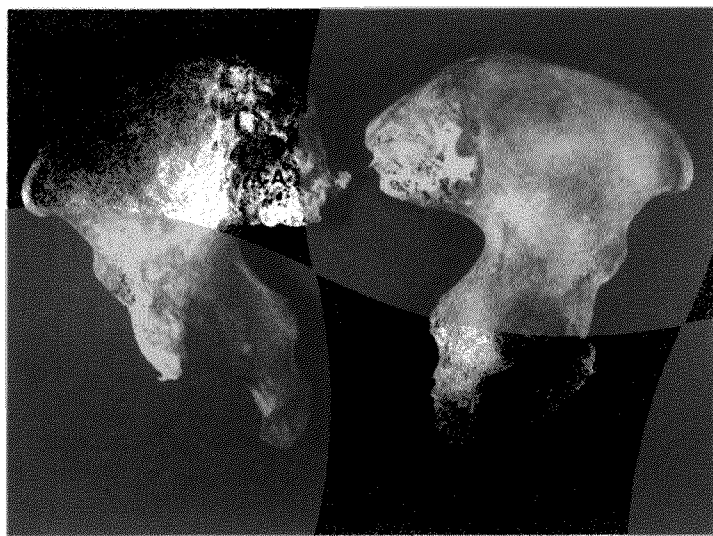
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Lám. I.- Manifestaciones de espondiloartrosis en diferentes vértebras del sector cervical (a-d) y en una vértebra dorsal (g), en ésta última se aprecia además un nódulo de Schmorl (NS). f) Segunda falange del pie en la que aparecen signos de artrosis tanto en la base como en la cabeza. h) Primera falange del primer dedo del pie; en su extremo distal se observan discretos osteofitos y pulimento. e) Primera falange del pie vista lateralmente y fractura en su tercio medio (→ ←) con ligera angulación residual.



Lám. II: a) Peroné derecho visto por su superficie posterior e interna, donde se advierte la fractura del tercio distal ($\rightarrow \leftarrow$) y una exóstosis posttraumática (EP). b) Vista radial del cúbito izquierdo; llama la atención la irregularidad de la "incisura semilunaris" (IS); apófisis coronoides (AC) y pico del olecranon (PO), notablemente deformados. c) cara inferior de la clavícula derecha; en su tercio medio se aprecia un callo de fractura ($\rightarrow \leftarrow$) con rotación del fragmento externo (FE).



a

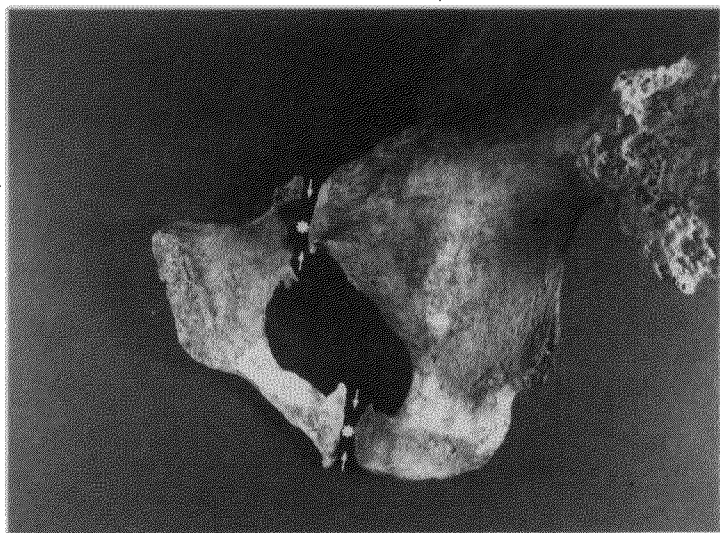


b

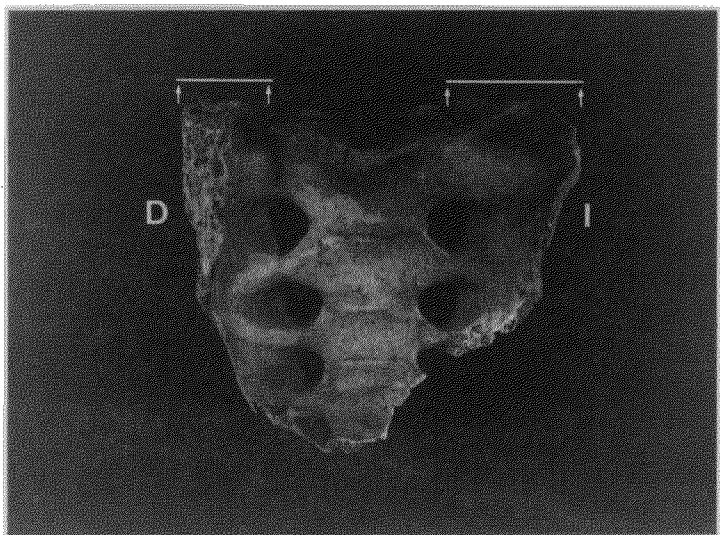


c

Lám. III.- a) Vista interna de los coxales; en el derecho existen evidentes signos de osteoartritis en la cara articular para el sacro (CA). b y c) Detalle de los coxales vistos por su cara externa mostrando la fractura de las ramas ilio e isquiopubianas (→ ←) en ambos huesos.



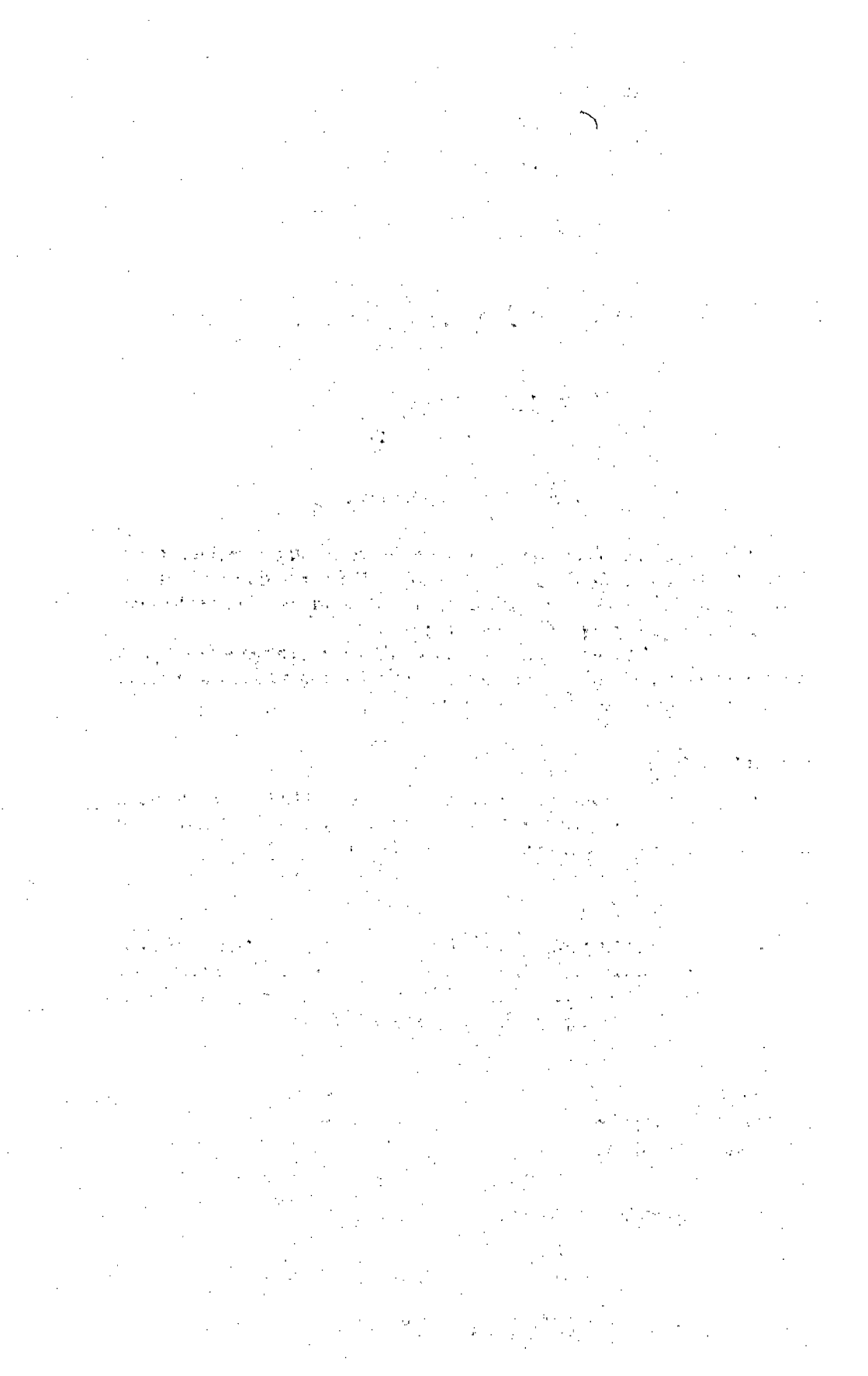
a



b

Lám. IV.- a) Detalle del coxal derecho visto por su cara interna; apréciase el foco de fractura y la pérdida de continuidad anatómica a este nivel ($\rightarrow**\leftarrow$). b) Cara ventral del sacro; se puede contemplar el gran desgaste y aplanamiento del ala sacra derecha (D) respecto a la del lado izquierdo (I).

NOTICIAS



HALLAZGO ARQUEOLOGICO EN ARAFO

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MARGUI RUIZ-GÓMEZ DE FEZ³

Museo Arqueológico y Etnográfico

El día 4 de Abril del presente año el Museo Arqueológico recibió el aviso del Sr. Alcalde de Arafo, D. Domingo Calzadilla Ferrera, a fin de que tuviese constancia del hallazgo de una vasija guanche en su término municipal, descubierta de forma ocasional por D. Manuel López Pérez.

Ese mismo día nos trasladamos a la zona del hallazgo acompañados por el agente urbano D. César Rodríguez Rodríguez, tomando contacto con las personas que tenían conocimiento del descubrimiento.

LOCALIZACIÓN

La pieza cerámica fue hallada casualmente, oculta en el interior de un escondrijo, cuando se realizaban actividades agrícolas en una zona del malpaís de Arafo, conocida como "Higueras de Juanico" u "Hoya del Pino".

DESCRIPCIÓN

Se trata de una vasija fracturada de clara tendencia semiesférica realizada a mano, con labio irregular, borde convergente y fondo redondeado, careciendo de apéndices. Sus dimensiones son: altura máxima, 8 cms.; diámetro boca, 15'3 cms.; diámetro panza, 14'1 cms.; grosor de las paredes, 0'7 cms.

¹ Conservador

² Becario de investigación

³ Contratada administrativa

La pasta es de calidad media con desgrasante medio. La técnica de acabado es espatulada siendo más tosco el exterior, mientras el interior muestra un tratamiento más cuidado. Su cocción es irregular. Presenta, igualmente, una decoración acanalada en bandas horizontales ubicadas en un sector del borde y pared externa, bajo las cuales parten otras bandas de acanaladuras verticales con motivos que recuerdan a las representaciones rupestres de Tenerife.

El vaso carece de parte del borde y pared, así como de un fragmento de fondo fracturado al ser extraído.

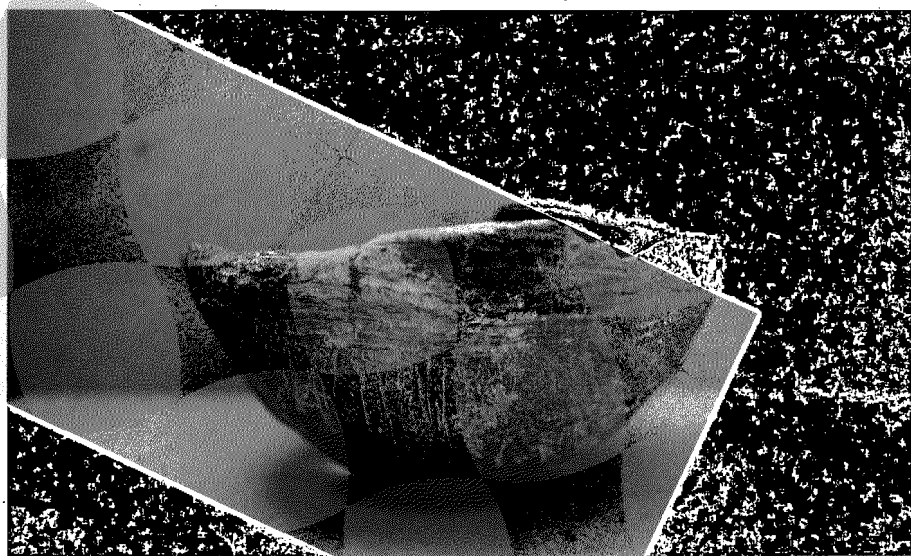
SITUACIÓN

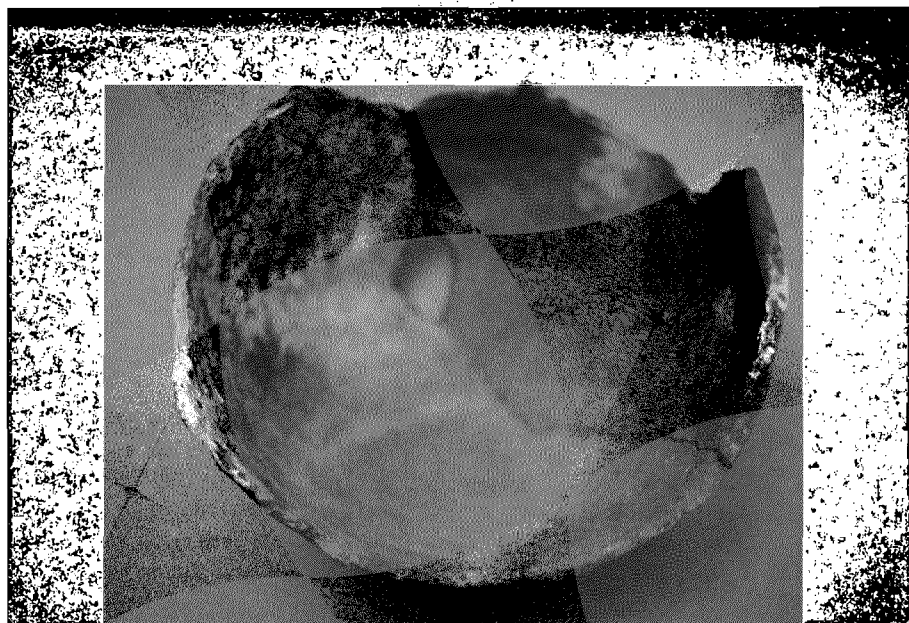
A tenor del análisis de improntas de tierra y humedad en los restos, la pieza se encontraba colocada en posición inclinada, quedando enterrado el sector decorado del vaso y el otro -sin decorar- expuesto a las inclemencias externas, lo que sin duda contribuyó a su fragilidad y fractura posterior. La presencia de una huella, de tendencia oval, en el fondo interno de la vasija parece poner de manifiesto la existencia pretérita de una sustancia líquida indeterminada, que vierte levemente en relación a la inclinación posicional originaria de la pieza, cuya coloración actual aproximada corresponde al código 7.5YR6/4 del Munsell.

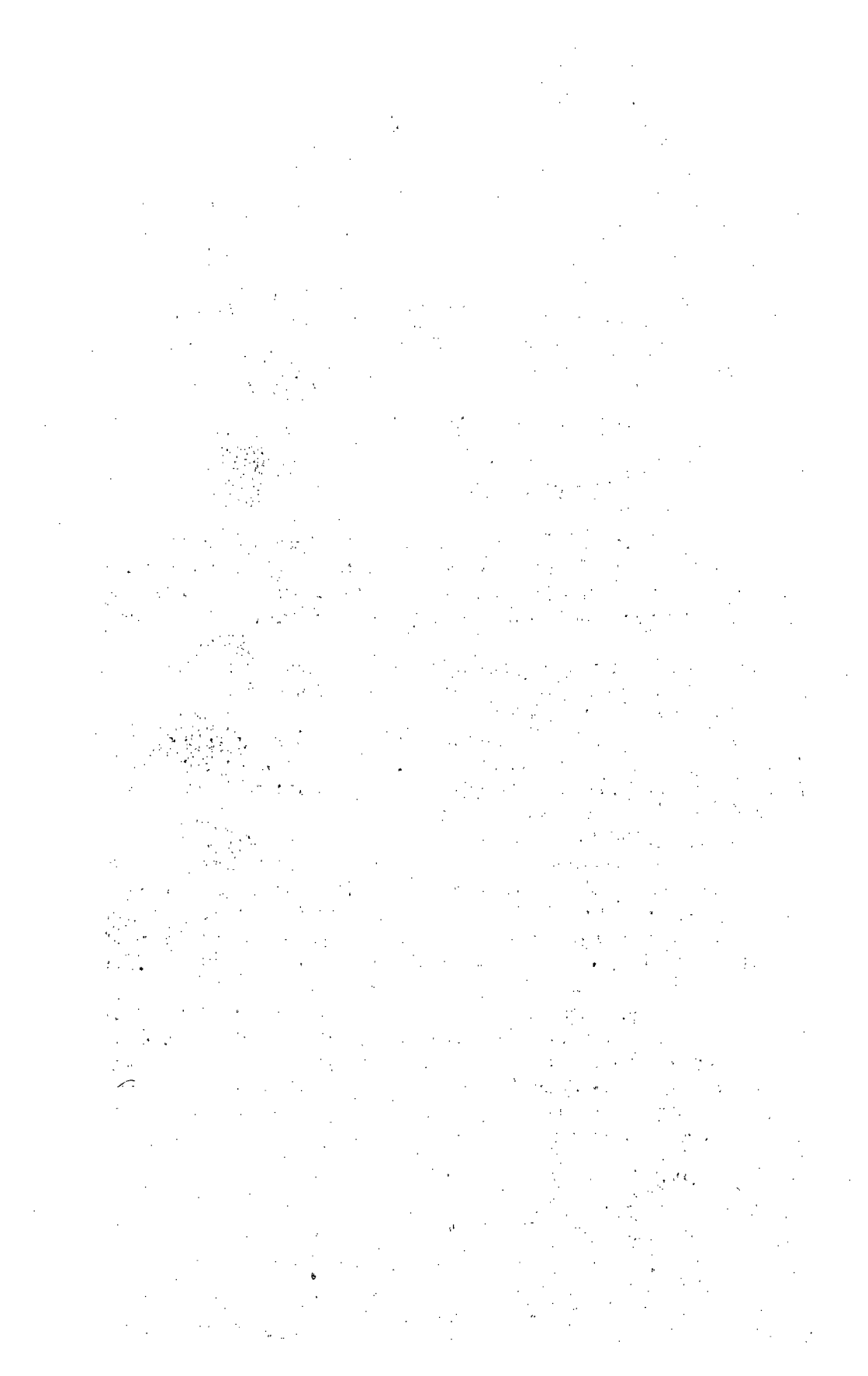
Esta cerámica fue donada por su descubridor al Ayuntamiento de Arafo que, a su vez, la ha donado al Cabildo de Tenerife por medio del Museo Arqueológico, incorporándose a sus fondos tras ser objeto de estudio.

LAMINAS

Autor: José Juan Jiménez González







I SIMPOSIUM DE ARQUEOLOGIA ANTROPOLOGICA IMPARTIDO POR EL PROFESOR MARVIN HARRIS, UNIVERSIDAD DE FLORIDA-GAINESVILLE (USA)

(15 al 17 de Octubre de 1990, Cabildo de Tenerife)

COMITÉ DE REDACCIÓN, ERES ARQUEOLOGÍA

El Museo Arqueológico de Tenerife ha iniciado una línea de investigación en el ámbito de la Arqueología Antropológica. Consecuentemente, ha venido realizando contactos nacionales e internacionales que suponen una reorientación global e innovadora de los estudios arqueológicos y antropológicos de la Prehistoria de Canarias.

En este sentido, el Museo Arqueológico en combinación con el Aula de Cultura del Cabildo de Tenerife ha comenzado a publicar monografías que se inscriben en estos novedosos planteamientos.

Con el deseo de establecer relaciones científicas y profundizar en un reciclaje de conocimientos a todas luces necesario, el Museo estimó la posibilidad de realizar un Symposium que implicase la recepción progresiva de los más importantes investigadores conectados a este ámbito de estudio.

En esta primera ocasión, al hilo de los criterios teóricos, metodológicos y temáticos manejados por nuestros investigadores, hemos querido contar con una personalidad destacada: el profesor Marvin Harris, uno de los mejores antropólogos en el panorama mundial. El creador de la estrategia materialista cultural es ampliamente conocido en el ámbito académico, investigador y público lector en general por sus numerosas monografías, la mayor parte traducidas al castellano con una reiterada reedición.

El desarrollo de las actividades planteadas contó con la inestimable ayuda del Catedrático de Antropología Ubaldo Martínez Veiga, la dirección de Rafael González Antón, Director del Museo Arqueológico y Etnográfico, y el patrocinio del Cabildo de Tenerife y de la Consejería de Turismo y Transportes del Gobierno de Canarias. La preparación y coordinación de los actos del Symposium tuvo como responsables a José Juan Jiménez Gonzalez Conservador del Museo Arqueológico.

co, y Fernando Estévez González Director del Centro de Estudios Antropológicos, contemplando tres sesiones de conferencias abiertas al público y una serie de seminarios de trabajo para el personal de nuestra institución.

Las sesiones impartidas por el profesor Marvin Harris, entre los días 15 y 17 de octubre del pasado año, a tenor de las sugerencias brindadas por nuestro centro, llevaron por título:

1) *Una crítica materialista cultural de la arqueología y la etnografía postprocesual y postmoderna.*

2) *Visión de una teoría general de las preferencias dietéticas humanas y su aplicación al consumo de especies animales domesticadas.*

3) *Principios de la selección cultural aplicados a la evolución de las jefaturas y los estados.*

Temas que, además, fueron objeto de diferentes sesiones de trabajo.

Marvin Harris pertenece a una de las generaciones más brillantes de la antropología norteamericana y es hoy su representante más destacado. Profesor de la Universidad de Florida, Gainesville, ejerció la docencia y la investigación durante más de treinta años en la Universidad de Columbia, Nueva York. Sus obras han tenido una gran difusión, no sólo entre los antropólogos profesionales sino también entre el público en general. Sus dotes de gran escritor junto a la naturaleza de los temas que trata, le han convertido en uno de los escritores más notables de Estados Unidos. En España también ha tenido una amplia divulgación como lo demuestra la edición de sus principales obras.

El profesor Harris ha llevado a cabo numerosos trabajos de campo, destacando especialmente los realizados en Brasil, Mozambique y la India. Estos, junto a una sólida formación intelectual y científica, le han permitido elaborar un amplio conjunto de teorías socioculturales que él mismo ha denominado como materialismo cultural. Grandes temas que siempre han preocupado a los científicos sociales como el origen de la guerra, la aparición del Estado o el machismo, se combinan con audaces interpretaciones sobre muchos enigmas culturales como la vaca sagrada de la India o los tabúes alimenticios de diferentes culturas. Sus teorías son, por otra parte, una propuesta seria para superar la actual diferenciación entre las ciencias biológicas y sociales, en un intento de explicar más coherentemente las complejas relaciones entre la naturaleza y la cultura. Contrarias a los determinismos raciales y biológicos, las teorías de Harris son, igualmente, una sólida alternativa al eclecticismo y el idealismo, cuando no al oscurantismo, que caracterizan a buena parte de las ciencias sociales en la actualidad.

Su compromiso en los años sesenta con los movimientos de liberación africanos, el enfrentamiento a la política norteamericana en Vietnam y el apoyo a los derechos de las minorías étnicas y sociales le han convertido en uno de los antropólogos más controvertidos del panorama de la antropología contemporánea.

Entre sus obras en castellano destacan:

Caníbales y reyes. Los orígenes de las culturas. Madrid. Alianza Editorial. 1977.

El desarrollo de la teoría antropológica. Una historia de las teorías de la cultura. Madrid. Siglo XXI. 1979.

Vacas, cerdos, guerras y brujas. Los enigmas de la cultura. Alianza Editorial. 1980.

El materialismo cultural. Madrid. Alianza Editorial. 1982.

La sociedad americana contemporánea. Una visión antropológica. Madrid. Alianza Editorial. 1984.

Introducción a la antropología general. Madrid. Alianza Editorial. 1985.

Bueno para comer. Enigmas de alimentación y cultura. Madrid. Alianza Editorial. 1989.

Antropología cultural. Madrid. Alianza Editorial. 1990.

Finalmente, deseamos manifestar nuestra satisfacción por contar en este nuevo número de "ERES. Arqueología" con la participación del profesor Marvin Harris que sin duda será del interés de nuestros lectores: "Anthropology: ships that crash in the night", que publicamos en su versión original en inglés.

ARQUEOLOGIA ANTROPOLOGICA

Prof. MARVIN HARRIS

UNIVERSIDAD DE FLÓRIDA-GAINESVILLE (USA)



CICLO DE CONFERENCIAS
15 al 17 de octubre de 1990, 18 h.
Salón Noble del Cabildo Insular

