

CHAPTER II

CONTEXT, PURPOSE, METHODS AND CONCEPTS

Cultural Ecology

Antique folk have been the inheritance of anthropologists ever since the academic line of Friedrich Ratzel stagnated while that of Franz Boas thrived. But this is a fact of intellectual history rather than a fact of Nature, to the extent that it is fact at all, and should not prevent interest in such societies by anyone who can muster competence in a given topic equal to that of anthropologists or others. When it comes to man-habitat relationships in folk, peasant or tribal cultures then geographers and anthropologists appear to be evenly handicapped: the weakness of many social anthropologists' training in life and earth sciences is balanced against geographers' largely ethnocentric preparation.

The evolution of geographic thought includes several proposals that human geography might well deal with the ways people relate to places (i.e. habitats) in which they live. The repeated collapse of this perennial 'new direction' might have come from a lack of methodology: the idea is good, but what do you do with it? The very first time it appeared the label *human ecology* was used, but Harlan Barrows was not only ahead of his time in geography: the biological groundwork in ecology was scarcely begun when he addressed the Association of American Geographers.¹ Whittlesey's *sequent occupance* included attractive but weakly founded prospects, combining the

¹ Barrows, 1923.

sociological usage of *ecology* at the time with the outlook of Davisian geomorphology.²

The term which has recently come into vogue as shorthand for the autobiogeography of the human animal is *cultural ecology*. Biological as opposed to behavioral subtopics have been partitioned off as *human ecology*, matching the distinction of physical from cultural anthropology, but a little reflection will show that the distinction is more academic than empirical.³ The human animal has ordinarily been excluded from biogeography except as a modifying agent in the habitats of other life forms. Various branches of human geography are supposed to take up the resulting slack, since the biogeography of man in his present world-wide scientific-mechanical-industrial matrix implies an unwieldy synthesis of the whole of current knowledge and belief. All the physical sciences, social sciences, technologies and faiths would have to be taken together to account for man and his habitat in the way one would account for a mid-latitude forest and its habitat.⁴

A few centuries ago, though, the scope of human interconnected-

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Whittlesey, 1929.

³ The theoretical point is brought up in Clarkson, 1968, pp. 1-3, and in Netting, 1968, p. 11. However, the way a culture operates in a given habitat will depend very much on the numbers of its members, their health, and even their body type; at the same time the numbers, health and genetics of a population can be deeply affected by culturally set rules of behavior: cf. W.F. Loomis, 1970.

⁴ For example, Strahler, 1971. Yet the impossible may become the merely difficult since this very synthesis is attempted in Meadows, *et al.*, 1972.

ness was not so great and by the same token the interaction of each cultural grouping with its habitat was presumably more intense. Where people conserve ways of life out of that past (people who by choice and fortunate accident have not been absorbed or annihilated despite loss of economic and political autonomy in many cases) "ethnobiogeography" need not add up to an all-inclusive absurdity.

Contribution by Geographers

General clarification of the relation of cultural ecology to human geography appeared in the 1960's along with a number of case studies of individual peoples and habitats.⁵ In a broad way and with specific use of the idea of man as an ecologic dominant, Carl Sauer made a geographer's contribution to this most interdisciplinary of topics as far back as the 1950's,⁶ in addition to other contributions throughout an enduring love-hate debate opposing "natural history" to "ecology".⁷

Purpose

The purpose of the study presented here is to document one culture's characteristic relationship of numbers, behavior and habitat in order to illustrate the cases where these interact. The documentation applies to a very small piece of space and time so the illustrations and explanations fall far short of universality, even

⁵ Eyre and Jones, 1966; Morgan and Moss, 1965; Stoddart, 1965; Ackermann, 1963; Aschmann, 1959; Clarkson, 1968; and Pennington, 1963.

⁶ Sauer, 1954: 49-69.

⁷ Specifically, Sauer, 1952: 2; see also Sauer, 1969.

for the culture studied. This is simply the nature of the subject, which is too complex to be mastered by one or two students and a few informants working for a year or so but at the same time too fragile to withstand study by a task-force and too novel to attract abundant funding. Ecology is a synthesis of many specialities and hence, perhaps, the lateness of its popularity.⁸ Even though one person may combine several abilities a satisfactory study requires several field seasons, wide consultation, and many dollars.⁹

Methods and Concepts

The principal method used in the field work on which this study is based was participant observation. It is a method originated, developed and used by anthropologists, but there is no patent on method except that implied by relevance to a problem and by competence in the practitioner. Participant observation is about the only way to do cultural ecology since dependence on second-hand interpretation of either language or culture - or even numerical data - is not likely to provide answers to the questions that must be asked, nor correct answers to all those that are answered.

Observation without participation may appear to avoid influence on the object of observation, but if so it is only at the cost of much useful information. Yet one cannot acquire another kind of 'invisibility' by participation in body but not spirit. This tactic of remaining passive and inconspicuous may be useful for students of

⁸ Elton, 1929: 34-35.

⁹ For example, Conklin, 1957: 4.

social phenomena but to study subsistence there is no substitute for full on-the-job participation. The essence of this was well stated in a recent work on Alaskan Eskimo habitat knowledge and use:

when full participation is used to document a technique, the ethnographer must learn to do it himself with at least a minimum proficiency necessary for success. In a sense, then, he observes others and learns from them, but he learns by observing himself as well.¹⁰

A stranger who tries to ape the natives remains obviously strange and hilariously clumsy. So much the better: an observer who is patiently harmless may be free to do and ask what his detached - and probably suspect - counterpart could not.

Solicitous and harmless as he may be, it remains true that a participant observer succeeds by exploiting the dominant position of his culture in that he depends on freedom to pry and pester and hire members of the studied culture to ask things which would cost the hireling dearly were he to ask on his own account. Invert the situation and you have the proof: how far would a Maya Indian go supposing he tried to learn about North American culture by settling in a small town and hiring informants half again his age, through which to conduct probing interviews and intrude on every business in the county and finally conduct an exhaustive census?

Desirable Information

In a thorough culture-ecological inventory the ideal is to compile complete energy budgets, mass budgets (in terms of crucial

¹⁰ Nelson, 1969: 394.

elements and chemical compounds), area-use inventory, and demographic statistics in addition to the inventory of culture traits. Some of the key questions which ought to be answerable, in numbers as well as words, would then be:

- 1) What are the culturally defined ways of meeting needs for subsistence materials, also culturally defined?
- 2) What materials in the habitat are perceived as resources suited for use in the above-defined technologies?
- 3) What are the dimensions of each technologic activity: costs, returns, rate and calendar of production, etc.?
- 4) How are time and material resources allocated so that makers' and users' lives are satisfactorily close to culturally defined optima?
- 5) What do the answers to questions one through four imply for the habitat: how long to exhaustion of non-renewing resources; less than full use, full use, or exhaustive use of self-renewing resources?
- 6) From the answers to question five, is the relationship of population, culture and habitat stable, conditionally stable, oscillating, or absolutely unstable?

The feedback which occurs between population size and the ways and rates of applying subsistence technology to habitat does not allow a satisfactory answer to question five, above, without first finding answers to these questions:

- 1) What is the present population structure (numbers by age and sex)?
- 2) What are the implications of that structure, and the age specific death and birth rates which maintain it, for actual and potential changes in structure and total number?
- 3) What are the implications of that structure, when combined with cultural definitions of activities appropriate to each

age and sex class, for actual and potential rates of production and consumption of material goods?

Then there is the core topic of autecological study of animal populations: energy exchange. How do organisms individually and in sum capture the food and other forms of energy used for life, how is this energy allocated and expended to maintain life and support procreation, and how do symbiosis, parasitization and death render one set of organisms into sources of energy for others? This simple and logical frame of reference, though, conceals a Pandora's box of details even when the population in question consists of unicellular organisms. At least two studies have attempted to compile the energy budgets of tribal and folk societies of human organisms,¹¹ but the research presented here was undertaken mainly to contribute the understanding of culture on which such a study might be built in future.

Geographical Methods

So far there have been no references to classically 'geographical' methods or topics or treatment. Regions will eventually be defined and described, maps will be presented, and areal comparisons made; but these are properly means and not ends in the present context.

At times the content may resemble economic geography or even economics, but this is a similarity not to be avoided. Ecology and economics are no more separate than their common etymology. While

¹¹ Kemp, 1971; Rappaport, 1971.

economists of the last several decades may have drifted far from concern with the natural history of their planet, "externalities" have begun to intrude at such a rate that the former path is becoming blocked. If costs, profits, margins and other supposedly economic features are mentioned below, they appear because cultural ecology depends on careful bookkeeping in these as well as bio-geochemical dimensions. Good economics may turn out to be no different.

Language

The role of language in culture-ecologic work is such that the topic cannot be avoided although expertise may not be necessary. Language is the main format for expressing perception and classification of habitat as well as the means for communication on technical subjects in aid of vision and imitation. At the same time, earnest interest in the language of informants is a well-worn way to gain sympathy in a cross-cultural situation.

The need to get some grasp of a language which is unwritten and spiked with unfamiliar phonemes is also a factor limiting the rate at which information on other topics can be compiled. However, the mental effort and misinterpretations which make all language learning strenuous may also contribute a freshness of insight that familiar habits lack.

Without entering any linguistic controversy it can be said that the existence of a term implies perception of nature, operation on it, and communication about it mainly by means of that term. Only

those phenomena in the habitat which receive names are likely to be significant from the point of view of the culture in question; on the other hand, absence of a name does not imply the impossibility of perception but relegates nameless items to low significance within a broad generic term.¹² What is and is not significant may well vary within the territory of one language. For example, soil and subsoil variations around San Juan Chamelco are less complex and require a lesser vocabulary than those around Chichipate in the Polochic Valley.¹³

The role of language in ecologic and other contexts has been productively systematized by W.C. Sturtevant in what he proposes to call *ethnoscience*. His *etics* are categories in a general scheme of knowledge valid for all cultures (though not all categories will be filled in anyone culture), while *emics* are categories in the systematization of nature peculiar to a single culture and its language.¹⁴ The emics of nature turn out to be the natural history lexicon of a language while etics find their expression in the technical sublanguages of English, French, German, Russian and a few other languages spoken by professional students of nature and other cultures. Coincidences of etic and emic categories are to be expected given the many common elements in human experience regardless of place or

¹² Relation of language to habitat is a topic in itself: see, for example, Raven, Berlin and Breedlove, 1971, or Mason and Langenheim, 1957.

¹³ Carter, 1969: 20-31.

¹⁴ Sturtevant, 1964.

time, but overlapping and sloppy matches are the forms to be expected.

Culture

Anthropologists no more agree on the definition of *culture* than geographers agree on the definition of *region*, but in either case there is an outer limit to disagreement. For this study a rather gross specification of the former term will suffice. A culture is a set of rules for perception and action, rules which may be implicit, technical or explicit.¹⁵ Taken together these rules set the rates and kinds of energy capture and allocation peculiar to a given culture in a given habitat. What is done becomes a small fraction of what *might* be done with human time and intelligence, and the materials of the earth's surface.

So pervasive is the role of culture in fixing people's perception and manipulation of natural phenomena that different populations, though occupying the same habitat, may have literally different re-sources. Indeed, it is only insofar as a habitat has been made valuable by the culturally available beliefs and techniques of a people that it contains any resources at all.¹⁶

The Choice of a Case

Application of general purposes, methods and concepts must be made by choosing where on earth to apply them to best effect. There remain several options for culture-ecologic work with folk and tri-

¹⁵ As defined in Hall, 1959: 63-92.

¹⁶ Firey, 1960: 27; note also his definition of *culture* on that page.

bal societies: Africa, Australia, Melanesia, Micronesia, South America and Middle America all have one or more "backward" peoples and territories. Each has also been the site of at least one previous attempt at ecologic ethnography.

Given their long - though hardly uninterrupted - histories in the general areas they now occupy, the various Maya peoples of Guatemala should offer some good examples of long-term relations between humans and their habitats. The social and territorial disruptions of the Conquest must have deflected these adjustments in ways they would not have taken if left alone, but peasant cultivators who remain so by preference (as much as by necessity or coercion) cannot have had reason to change their subsistence activities beyond a few losses, adoptions and modifications.¹⁷ The relationship between Guatemalan Indians and their land ought to have changed least of all in those places where not only cultivation but ownership of land has remained in Indian hands.

The Q'eqč'i? and Alta Verapaz

In proportion to their numbers and the extensive area they occupy, the K'ekchi' (henceforward spelled Q'eqč'i?) have received relatively little academic attention. The only nearby language groups for which even less information has been published are the Pokomchi? and a few of the lesser members of the Mam family, yet all of these taken together cannot match the present territory or

¹⁷ See La Farge, 1940: 281-291.

numbers of the Q'eqčiči'.

The explanation of this neglect may be in the remoteness of the *Departamentos* of Alta Verapaz and Izabal from the main center of population in Guatemala, and partly in the absence of fetching characteristics in the Q'eqčiči' themselves. Their weaving is relatively uninteresting, their pottery crude, their language simple (at least by comparison with Ixil) and their habitat renowned only for caves and dreary rain. Though never conquered in battle, the descendants of warriors who provoked the Spanish to call their land "Tierra de la Guerra" are today much less ferociously independent in character than the general run of Quiches, Cakchiqueles, or Tzutujiles. Yet all of the latter peoples were trounced by Pedro de Alvarado and others time and again in the far past and all suffer closer contact today with larger Ladino populations.

Documentation of most features of Q'eqčiči' culture could be justified by the absence of that information so far - a matter of filling in the map. But it happens that the Q'eqčiči' are more worthy of study than any other group when attempting a culture-ecologic treatment since they have more habitat than any other part of the Maya family, perhaps excepting Yucatec. There is "more" in the sense of more square kilometers as well as more altitudinal and successional diversity within that area.

The only general study of Q'eqčiči' culture within the last fifty years was that by Antonio Goubaud Carrera. Unfortunately, the work of Goubaud and others in the Carnegie Institution study of diet in

Guatemala did not reach full publication. Excerpts have been published by the Seminario de Integración Social Guatemalteco¹⁸ but the remainder is available only in the form of raw data and microfilmed field diaries, including Goubaud's own notes on San Juan Chamelco.¹⁹

Karl Sapper's observations in Alta Verapaz around the turn of the century appear in some pre-WWII German books and journals, but they are remarkable only because their descriptions of Q'eqč'i? culture could as well have been written today.²⁰ Sapper's sketch of daily life (in German, unfortunately) gives a very clear impression of the rugged land, clothed in a patchwork of milpa and woods, crisscrossed with footpaths and dotted with thatch-roofed houses. He describes the houses' interior, with rows of maize ears hung from the walls and steeped in the smoke from a three-stone hearth on the dirt floor. And he presents the men, women and children as they still are: shy, reserved, and so soft-spoken that the guttural sounds of Q'eqč'i? seem crisp rather than harsh. Wives and eldest daughters spend a large fraction of their lives boiling and grinding the maize for meals; men march for hours before dawn to reach their milpas; and children scarcely ever cry or shout unless severely ill. All dress in clothes that may show much wear but rarely show dirt. They are gravely proper in all public situations, even the annual fiesta,

¹⁸ Goubaud, 1959; Goubaud, 1964: 51-108.

¹⁹ Goubaud, 1940.

²⁰ See Sapper, 1922, 1936, and especially 1913.

though when drunk the men may become loud and even murderously aggressive to others who may have wronged them. Though many Qʼeqčiči work on coffee plantations, even those who live as tenants spend only six to twelve days a month working for European planters; the rest of their time they allocate to their own fields, to house construction, to firewood, or even to hunting or fishing or care of domestic animals.

Language and Temperament

An introduction to the phonetics and grammar of Qʼeqčiči is provided in Appendix A (and other works cited there). This information is only the bare minimum necessary for understanding the chapters on earth phenomena and ethnobiology, Appendices E, F and G, and other lists and uses of Qʼeqčiči words.

Qʼeqčiči is very regular in its grammar and logical to a fault once the principles of syntax are grasped. It is flexible and precise where description of shape, size, texture, color, motion and relative time are concerned - points which suit it well to convey habitat information - but dependent on Spanish to express comparison (*mas* is used). Affective expression is very cramped, but Maya peoples are noted for reserve and stoicism.²¹ So far as habitat relations are concerned, this compression of emotion is significant mainly as it increases losses to health, life and property by way of cathartic drunken fits.

Regionalization

²¹ Morley, 1946: 32; Thompson, 1954: 29-31.

The use of regions which is made in this study does not take them to be testable hypotheses, though this is a sound and much-used technique. Rather, the region in which interest is to be focused is automatically defined by the areal extent of a human population characterized by a common language and culture (Map 1). This is an untidy region in that it has outliers which will not be scrutinized and inliers, or even a superpos-ed region, dominated by intrusive cultures: Ladinos, and through them the rest of West European and North American societies.

The total area of the region of interest, so defined, comes close to 14,000 square kilometers (5,460 mi. sq.) and includes an elevation range of 2,645 meters (8,660 ft.) (Map 2). As could be expected, there are linguistic sub-regions or dialects as well as obvious differences in habitat and its use within so large a territory. But these differences make little sense until the culture is comprehended as it operates in one locality, one collection of persons, and one or two principal mentors and their families.

Thus a second choice of region is required: a part of the first which is a unit recognized as separate by its inhabitants, with a size and population comprehensible by a task force limited to two or three people at work during the time available, in this case fifteen months. The base for field work was the town of San Juan Chamelco, Alta Verapaz, but the region of quantitative study was Aldea Cojilá

Map 1
LOCATION OF ALTA VERAPAZ AND THE Q'EQČI' IN GUATEMALA



- a self-proclaimed dependency of the *Departamento* capital, Cobán (see Map 3).

However, documentation of habitat-related activities was not confined to *Aldea Cojila* (even though referred to its population) since commitment to that particular place was not made until five months into the study and since experience outside the *Aldea* was essential to give perspective to information from within it. The 'field site', as it will be called, is to be taken as an example of Q'eqč'i? relations to habitat and not as the sole focus of study. Generalizations based on so small a test region, in this case three square kilometers and 337 people, must be used hesitantly until put in perspective by many more case studies.²²

San Juan Chamelco

San Juan was for my wife and I what it was for most of the Q'eqč'i? population of the *Municipio* in which it is *cabecera*: a convenience with obnoxious overtones. Few towns could be less integrally related to their surroundings than the type Chamelco represents even though it is not quite a perfect "vacant highland town" as pictured by the McBrides.²³

At present the majority of town functions exist by national fiat or for Ladino interests and ill serve Indian needs. The services which the Q'eqč'i? appreciate and depend on are diesel-powered mills

²² Such as Adams, 1965; Carter, 1969; and Fisher, in preparation.

²³ McBride and McBride, 1942: 258; for information on the history and role of towns in Guatemala refer to Elbow, 1972.

to grind maize, imported maize from the lowlands, butchers' shops, and various religious functions. The Q'eqč'i? also provide cheap labor in the only "industry": sweatshop tailoring of work clothes. The whole output is commissioned and wholesaled in Cobán or Carchá.

The *Municipio* of San Juan Chamelco does not appear to be typical of the rest of Alta Verapaz, the rest of the Q'eqč'i? language area, and certainly not the rest of Guatemala. But it is atypical in very useful ways. Its very high proportion of Indian population and relatively high proportion of land in Indian ownership can probably be matched only in the north of the Department of Huehuetenango and a few *municipios* between El Quiche and Quetzaltenango,²⁴ places which are even less accessible physically and culturally than is southern Alta Verapaz. The almost unparalleled combinations of access, Indianness and cultural openness was the second reason for selecting San Juan over other potentially interesting base sites. The first reason was the impression made by flourishing Indian agriculture, producing huge ears of maize, despite a cool and cloudy highland environment which would seem to put forceful limits on agricultural success.

Informants

Goubaud Carrera's work in San Juan is still remembered by my own informant, who was a boy of fourteen at the time. According to him, Goubaud's main informant was a well-known thief and liar, an opinion

²⁴ This is a guess based on field reconnaissance and figures in Dirección General de Estadística, 1969.

which may be taken as raw truth or as a clue that he and my informant's family were on bad terms. In the seething social brew of any small aggregation of people both interpretations are more likely than either alone. In any case, the presence of a man as informant as well as his bad reputation could easily stem from the status of Ladino protegé - or Uncle Tomás. For Q'eqčiči?, being fluently bilingual and being willing to talk are attributes which are rare enough today ... and much rarer thirty years ago.

My principal informant lived an unexceptional life, for a Q'eqčiči?, until age twenty-two when he broke a leg and had to give up his trade as traveling merchant. Subsequent training in tailoring led to thirteen years in that profession, and then his experience suddenly broadened through selection for a course for *promotores sociales* which required six weeks' residence in Guatemala City. The value of this award must be balanced against the robbery of all valuables in his house during his absence. Subsequently he was employed in the summer of 1968 as informant and guide for part of Professor Carl Johannesson's study of maize in Guatemala.²⁵ His recommendation for this job grew out of his passage through all the grades of *mayordomo* in a *cofradía* and through voluntary work as secretary of the Church, work which brought him to the attention of the Benedictine Brothers and Sisters based in Cobán, whose responsibilities include San Juan Chamelco. He and his wife had three daughters and two sons living out of the first ten children, and another son has since been born.

²⁵ Johannessen, in press.

His wife had inherited land from her adoptive grandparents in *Aldea Cojilá*, an asset which led eventually to choice of that locality for detailed study.

My second informant was a friend of the first and in many ways a more "unspoiled" Q'eqč'i? despite his year of military service and despite the fact that one brother is a bus driver living in Guatemala City. His full-time occupation in field work began in March 1969 when he was no longer employed as informant for the linguistic work of Ray Freeze.²⁶ Through him we enjoyed participation in the marriage of a daughter and in several *cofradía* reunions, and suffered through the death of his wife and a disastrous remarriage.

Cyclical Activities of the Agricultural Year

When speaking of the Q'eqč'i? relationship to habitat one is in fact dealing with a variant of swidden horticulture. The cycle through which my informants led me involved the use of fire, dibble and hoe in order to bring in crops of maize, beans, squash and a diverse collection of supplementary plants. Though the division is not precise, those crops which grow mainly in open fields will be taken up one by one while crops grown mainly in dooryard gardens will be covered in a single chapter.

Use of land for crops implies some arrangements for authority over land. A few *municipios* in Guatemala maintain communal land tenure and periodic redistribution, but fee-simple ownership by purchase or inheritance is the rule among those Q'eqč'i? who have

²⁶ See Freeze, 1970.

managed to evade serfdom to a *patrón*. The ownership and surveying of land is discussed in Chapter IV, with additional information on place names and ethnogeography.

Alternative Activities

No simple agricultural system dictates the use of every waking moment in the year; usually there is a choice to be made among many economic and non-economic uses for "free" time, and ordinarily some part of each year will be preempted by illness or care for the ill. Traditional crafts or trades and the raising of domestic animals are taken up chapter by chapter, but the disease configurations and medical precepts of Q'eqč'i? culture include enough material for a separate book. Only a short section on ill-health in the field site population appears in Chapter XIII, supplemented by a vocabulary of diseases and parasites in Appendix G.

The one handcraft which has been so thoroughly documented as to require no further review is weaving on the backstrap loom. This ancient, traditional, and scantily remunerated craft is a common occupation of Q'eqč'i? women and the techniques in use remain as they were described by Lila M. O'Neale,²⁷ though the traditional identification of style and place of a woman's birth is beginning to break down.

Demography and Economy

General documentation of the horticultural and other activities of a Q'eqč'i? population can be quantified only by compiling

²⁷ O'Neale, 1945.

information relating to a specific collection of people. A month or so from the end of field work a complete demographic and economic census was made in the field site and the information processed to show the population structure, reproductive characteristics, migration, and household by household economic balance in relation to land use.

Statements and 'Facts'

One of the pitfalls of full participant observation is a loss of cultural identity, at least in the reporting of events and explanations. A lot of careful sorting is necessary if statements are to reflect clearly the perceptual framework in which they belong: that of the student or that of the object of study. Explanations and definitions quoted in the informants' own words pose only the problem of translation, but when those statements are paraphrased or synthesized the perceptual filter becomes two-layered. This situation has been handled here by qualifying paraphrased Q?eqči? beliefs with cautions like "... is said to be ..." and "... is believed to occur ...", especially where these 'facts' do not square with the 'facts' of the scientists' sub-culture. Even so, the reader will find many statements of 'fact' in which he or she will have to identify the appropriate cultural framework from the context of each statement.