

I. Sequence as a whole.

The preceding pages present a static, discouragingly incomplete representation of cyclically reoccurring behavior chains, whose each new enactment differs slightly from its immediate predecessor. The minute variations, which distinguish one enactment from its immediate predecessor, constitute over long periods of time diachronic trends.

The purpose of this final section of the paper will be to take this diachronic overview, looking first at the serial as a whole, and then at its scenically isolated component parts.

The exceptionally low productivity of the current serrano horticultural activities must strike any observer, even the most pro-serrano. The specific mechanisms by which this decline was brought about will be discussed below. But the historical conditions under which the ancestors of the serranos learned their shifting cultivation must also be briefly examined.

In comparison to the shifting cultivation of many other shifting cultivation groups, the mountaineers lack many important skills which permit effective shifting cultivation to other groups. Some groups have sophisticated land-management practices--trenching, draining, composting, and others.

The presence of indicator plants, the thickness of tree growth stands, the luxuriance of growth, the volume of vegetative material that will produce the best volume of chemical-yielding ash, the cen-

tering of certain plants either in very poor or in the best possible soils, the size of trees in relation to the cutting labor required--these and many other evidences have long been known to experienced shifting cultivators.⁵³

They often plant a much wider variety of crops. They possess a repertoire of discriminative and technical skills much more keenly adapted to the full exploitation of their natural environment than the present day serranos of Pino Tumbao.

Recognition of the impossible topography, the unsuitability of the serrano's present environment for agricultural purpose, is one side of the answer. But the fact that the parents and grandparents of the serranos also lacked these more refined techniques must not be forgotten.

One important element involved is the fact that the present day Dominicans are the descendants of latecomers to the island of Hispaniola. Neither physically nor culturally are they related to the pre-Conquest aboriginals who had adapted so effectively to the island environment. The ancestors of the serranos were conquerors, colonists, or slaves, who came from other parts of the globe and had to learn what they could of local horticulture from the rapidly vanishing aboriginals. What they learned was not the finely adapted, efficient exploitation of the natural environment which the Arawak must have practiced to support a stratified nucleated society of a million inhabitants principally on the shifting cultivation of root crops. It should not be surprising that the newcomers learned not this system in its entirety,

but only the technological basics. There is an irreparable lack of accurate ethnographic reporting of the life of the Arawak; but the evidence that exists leads one to the conclusion that the aboriginal population was probably much better equipped technologically to live on the island of Hispaniola than the newcomers. For centuries the inhabitants of what is today the Dominican Republic were bypassed by the events which were transforming the Western Hemisphere-- even the western end of the island, present-day Haiti. The population of the Dominican end of the island, after losing its most energetic and capable segment in the post-1520 rush to the mainland, and failing in its initial attempts to put sugar production on an efficient commercial basis,⁵⁴ reverted to the trapping of wild cows and pigs (which had multiplied astronomically in the first century of Spanish occupancy), and to that technologically diluted version of shifting cultivation which they were able to learn from the aboriginals before their final extinction. And the sparse population density which characterized the nation up until the third decade of this century offered no incentive for improving on this technology. It is a historical paradox that the descendants of the culturally advanced invaders sank to a technological level far lower than that of the aboriginals their ancestors had exterminated. The shifting agriculture today practiced in Pino Tumbao must be seen in this historical frame. It is offspring of of the post-Conquest slash-and-burn parody of the integral shifting cultivation

of the pre-Columbian Arawak.

But the mountaineer horticulture of 1970 must be seen against another backdrop as well; the ecologically adapted mixed economy of their immediate ancestors. For the parents and grandparents of the mountaineers of today, the conuco was only an adjunct to extensive grazing of cows and extensive pig-raising "en el sitio" (on the hills, unfenced). This animal-raising was the vertebral chord of their economy. The first migrants to Pino Tumbao and Monte Adentro were "rico de crianza," rich in animals, according to their descendants. Their shifting cultivation was every bit as primitive, technologically, as that of the present day serranos, but it sufficed. There was always meat in abundance; any cash always came from the sale of animals--that same hato economy on which the island (east of Haiti) had subsisted for centuries.

But this mixed economy is possible only with a very sparse population; any increase of population which brings much of the land under cultivation strikes at the heart of raising animals "en el sitio." And thus almost all the animals have disappeared. The serrano of today still depends on his cows and pigs--but it is a rare serrano who has five of the former and ten of the latter, including young. And so the mountaineer of today has gradually come to depend primarily on an activity that was historically only an adjunct to a much more profitable activity, ranching and pig-farming. Not until recently have the serranos had to turn to the conuco for cash and all their proteins. And so the mountaineers are victims of historical developments.

Their parents equipped them with a technologically primitive horticultural system which was never meant to be the backbone of an economy, but only an adjunct. The gonuco, as now made by the serranos, could never bear the brunt of a large population; it never had to. The functional load that is cast upon it today is the result of historical developments which yanked from beneath the mountaineers the props that had sustained their fathers and grandfathers.

II Changing Scenes

But it is one thing to speak about the general historical context of a system, and quite another to show the changes which specific influences bring to bear on the execution of specific sub-sequences within the larger system. The former is historical interpretation; the latter approaches a much more powerful functional analysis.

The breakdown of a community's life into a series of well defined scenes provides a potentially powerful instrument for doing this latter type of diachronic trend analysis. Because scenes are constructed from on-the-ground current events, and because the human signal system, if properly used, can be used to reconstruct historical events, it is possible to do a longitudinal comparison of categorically-identical scenes at two different points in time. In this frame of reference, "culture change" becomes a very visible

and tangible construct; that which happens in current scenes which did not happen in historically reconstructed scenes, and vice versa.

In the following section I will briefly state what are the salient differences between the conuco scenes which occur currently, and those same scenes, as they are reported by older informants, thirty years ago.

Scene 1: site appropriation. The corresponding scene forty years ago was quite different from its present day version. In the first place, there were only two widespread categories of land in those days: monte and loma de pino. The number of sites that were already cropped and fallowing was very small in comparison to the number of hillsides which were monte and loma de pinos. In appropriating sites for cropping, there was never any need to choose fallow land. Indeed the use of the word botao (past participle of the verb botar, to throw away, abandon) to refer to fallow land suggests strongly that the migrants had no intention of returning to that land; and that perhaps the entire informal system of local land tenure is a very recent development in response to a land scarcity which the early coiners of the word botao had never envisioned. In the earlier decades of this century, the Cordillera Central was a vast, forbidding, uninhabited rain forest of interest to nobody except the few mountaineers looking for small patches on which to make conucos. Who could have foreseen that the

day would come when there would be no more monte on which to make conucos? No mountaineer ever laid an axe or a ceñón to fallow land; this is a characteristic of present day scenes which did not occur in the past.

Moreover in the same scene of forty years ago, the amount of land appropriated and surrounded with a callejón was much larger. The small size of today's conuco is due not only to the time involved in fence making (which was also done in the old days), but also to the present unavailability of extended tracts of adequately regenerated land in one site. Thus several farmers report making two conucos, both of diminutive size. It is rare to find an extended tract of adequate fallow of more than eight or nine tareas (approximately half a hectare). It would be possible to clear double the amount of land which is presently cleared, but this would have to be done in two sites. And that would require the fencing of two conucos instead of just one. There is always exaggeration in retrospect to the "good old days," but it is probably true that a man cleared and cropped twice as much land then as he does now.

Finally in the appropriation scene of 30 years ago there was no forestal whose permission had to be acquired before clearing. The forestal is a new actor on the scene. Many serranos have ignored him and chopped away at will; and these have been frequently jailed. Thirty years ago there was no such external agent in the hills. The advent of the forestales has specific causes; the interest of

different outsiders in the forest of the Cordillera Central. In the early parts of this century, there were no outsiders with immediate interest in the sierra. But the industrialization which took place during Trujillo's regime (mostly by Trujillo and his favorites) provided the climate where it was almost inevitable that sooner or later the pine forests would catch somebody's eyes. They did. And the forestales' initial role was the protection of the rights of a lumber company to the pine trees. In more recent times the sawmills have been closed; the government itself has expressed the determination to halt once and for all the deforestation of the mountains; and the forestales are now agents for the government. There are two classes of forest rangers; those in the employ of the lumber company, which still possesses rights to the pine trees though they may not be felled now and which consequently maintains its forest rangers in the hills; and the forest rangers in the employ of the Dominican government. The forestal who accompanies the mountaineer to the prospective site is of the latter class.

Scene 2: Clearing. The clearing operations were carried out by the serranos with the same tools as have been mentioned in the current scenes. The serrano's inventory of tools has remained constant through the decades. But there has been a drastic shift in the quantity of time allotted to each of the operations which form the clearing sequence. Thirty years ago, the tumba (the felling of large timber) was the

highpoint of the clearing activities; and nowadays, because so many of the sites have only thin secondary growth, the clearing can frequently be done without the use of axes.

There has been a concomitant decline in certain characteristics of the junta, the informal work group. The juntas of yesteryear were larger and more energetic, because of the heavier tasks they had to perform. The juntas that are now seen in the sierra are rather anemic parodies of the enthusiastic communal efforts that are depicted as being the juntas of yesteryear. Much lip-service is given to the ideal of neighborly help; and the mountaineers still describe themselves as being neighbors who help each other out. But few people would show up at the juntas that were called while I was in the sierra. If the scenic representations of the juntas of decades ago are valid--and there is no reason to suppose that they are purely retrospective imagination--it appears that the junta is a declining institution in the sierra. The enthusiasm and joking and singing that are supposedly part of the juntas now are seen in the coffee harvesting and rice harvesting groups, which are for the most part wage labor. Thus, though the tradition of mutual help is by no means dead, it has been partially supplanted by wage labor.

Another aspect of the clearing which occurred 30 years ago but rarely occurs today is the felling of pines. This has already been discussed.

Scene 3: Burning: The Burning scene of yesteryear was apparently similar to the burning scene of today, except that the pre-firing desiccation period was longer because of the nature of the vegetation felled at that time. And of course, fewer precautions were taken to prevent the fire from spreading to the surrounding mountainside.

In line with this there was another burning scene not directly connected to the conucos. Because the serranos had cows foraging in the hills, and because there was pitifully little herbaceous vegetation on the primary growth mountainsides, forest fires were frequently lit intentionally. The result of these fires was a fresh crop of grass in the following year. Many of the savannas which are seen in the sierra are a result of this formerly widespread practice. And the practice has not quite died. Every few years forest fires still appear in the hills. These fires are attributed to "caminantes," "passers-by." Some of them are undoubtedly started by the older men who have cows foraging in the hills.

Scene 4: Fence-making. Because there were larger clearings, the task of making fences used to take more time in past years, and consequently there were frequent juntas de levantar palisá, fence-raising work groups. More pine wood was used for the fence, as pines could be felled. Pine wood fences are the sturdiest and longest lasting, thus there was less need for the frequent fence-repairing activities which take

up so much time in present years. In past days many farmers used bojucos (vines) to bind the main fence posts together, whereas wire is almost universally used in present years. There is much more foraging around for wood for fencing materials now; the fallow sites simply do not possess the quantity of ligneous vegetation necessary for providing a good fence. Thus wood must be felled on other mountainsides. And the wood is usually of a poorer quality, with the result that today's fences deteriorate more rapidly.

Because fencing is such a serious consideration, the choice of whether or not to clear a particular site is more heavily dependent on the amount of wood present than on the quality of the soil or the degree of slope.

Scene 5: Cropping. In general the conucos of yesteryear were apparently characterized by essentially the same crop assemblage as in present years. The crops themselves have not changed according to informants. What has evolved over time is the place each of these crops has held in the cash economy.

The background of this is as follows. The earliest pre-30's migrants had livestock. As the population increased, the foraging livestock vanished, dying off. Droughts were cited by several informants as being largely responsible. But there were two appropriative activities which the mountaineers performed for cash income; the sale of pine wood (both as lumber and as kindling, called cuaba) and panning for gold. The latter activity was reported to bring in as much as 35 pesos per day at best (though there were days

when nothing came in.) But in the forties Trujillo forbade this activity in the entire country, the reason given being that many campesinos were abandoning their lowland agriculture to go to the hills to look for gold. Thus gold panning was forbidden, and has never been resumed. Mention has already been made of the prohibitions against felling pines.

But at the same time that these two avenues of cash income were closed, two others opened. In the late forties there was a growing market for rice and for coffee; and the mountaineers started growing these two items--which were already present in the sierra--in greater abundance. Thus an important transformation came about. Land was seen not only as a producer of consumer foods, but a potential source of income. Thousands upon thousands of tareas kl throughout the sierra are now planted with coffee trees. This has been one factor restricting the quantity of land which was available for subsistence cropping. And at the same time the conuco began to be put to a use for which it had previously never been employed in this part of the sierra; the production of cash crops.

The market for rice declined as a cash crop, and in recent years beans have become its substitute. But the decreasing fertility of the soil is resulting in fewer beans being sold each year. To crop enough beans to sell a surplus, the mountaineer must generally search out the patches of monte which are still available in the high

sierra. Thus beans also are now undergoing a decline. But the basic crops which have always been planted are still planted. Rice and beans have each had their turn at the center of the stage as cash crops, but now both have receded to more modest positions, though still remaining on the conuco.

Scene 6: Weeding. On the conucos of yesteryear, weeds were no problem. Today the clearing of weeds is a time consuming activity that must be repeated several times on most conucos. The prominence of weeding activities is a direct result of the ~~switch~~ to fallow land.

Scene 7: Harvesting. By far the greatest difference in the harvesting scenes of yesteryear and those of today must be looked for ~~that~~ the quantity of the crops harvested. The yields have dropped to less than half, often less than a third, of the yields reported for bygone years. This must not be attributed solely to retrospective exaggeration on the part of the older men. Though under ordinary circumstances fifteen years of fallow should permit good yields, the steepness of the slopes and the consequent erosion that takes place on clearing of the land results in quasi-permanent destruction to many sites, which cannot be repaired by the process of natural vegetative regeneration. Thus the harvest of today is quite a different scene from the harvest of

yesteryear.

In past times the viveres were produced in such abundance that they frequently went to waste on the conuco. Gifts of plantains and yuca were extremely common. Vestiges of this practice of food giving remain, especially in the case of yuca. But the present is a time of scarcity and hardship, in comparison with the past.