

Archaeological Investigations in Central Ifugao

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MOST anthropologists know at least something about the Ifugao. This knowledge is probably due in part to the fact that the Ifugao are an intrinsically interesting people whom professors find useful in their efforts to obtain the attention of undergraduates in introductory anthropology classes. More important, however, is the nature of the study which has been given Ifugao culture.

Intensive investigation was begun at the start of this century by two of the most important figures in Philippine anthropology, Roy Barton and H. Otley Beyer. In 1924, Francis Lambrecht was posted to the Catholic Mission at Kiangnan and afterwards was parish priest at Banaue (Fig. 1). He soon concerned himself in a highly professional manner with the tasks of understanding and reporting on Ifugao customs. Although none of these men gave his career exclusively to the Ifugao, each maintained a close association with that society over many decades. During those years they were joined from time to time by other anthropologists who pursued more limited investigations. Virtually every anthropologist who visited the Philippines found himself in Ifugao at some point during his stay. Harold Conklin's research has carried the intensive study of the Ifugao up to the present time. In brief, trained anthropologists have conducted an unusually long and competent monitoring of a single culture. Their work has produced information, understanding, and lively controversy.

One of the debates has concerned the antiquity of Ifugao culture. Specifically, the discussion has turned on the question of how long the Ifugao have been in their present territory, practicing terraced agriculture. By implication, those parties to the debate would seem to have agreed upon the basic importance of the subsistence-ecological factors, which suggests that they feel that when these are found in a relationship like the present one, other features which characterize the culture, such as the personal kindred, headhunting, a hierarchical organization of the society

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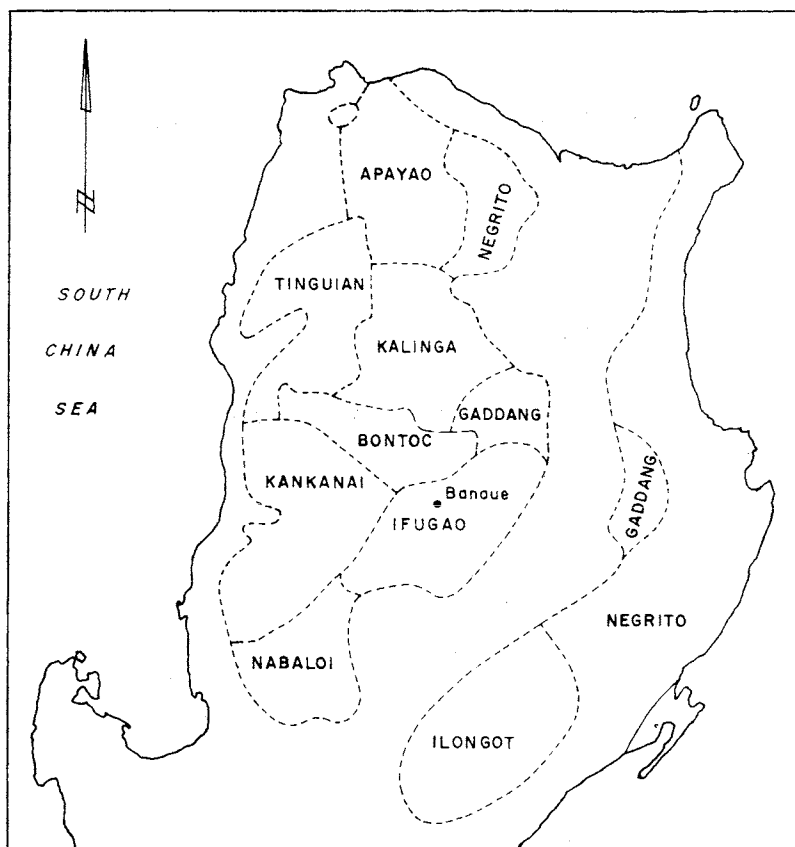


Fig. 1 Distribution of non-Christian ethnic territories in northern Luzon (modified from Barton 1919).

based upon the ownership of rice fields, a highly decentralized political system, along with an unusually sophisticated legal code, either are present or will follow shortly.

It is ironic that despite Beyer's reputation as the father of Philippine archaeology and the special place the Ifugao held in both his personal and research lives, the discussion of Ifugao antiquity has had to take place without the benefit of a single shovelful of archaeological evidence. Instead, it has been another of those cases, so familiar in pioneer anthropology, where positions concerning temporal questions are developed by inferences drawn from tangential evidence or the wringing of sparse historical accounts for information which is all too likely not to be in them.

Essentially, ideas of Ifugao antiquity have fallen into one of two camps. One holds that the Ifugao started building rice terraces in their present territory as much as two to three thousand years ago. The other sees terrace construction as a significantly more recent development, the result of a migration into the eastern reaches of the Cordillera Central pushed along by the pressures of Spanish expansion into northern Luzon in the sixteenth and seventeenth centuries. Appropriately, the interpretation of greater age is the older of the two. It was arrived at by Barton and

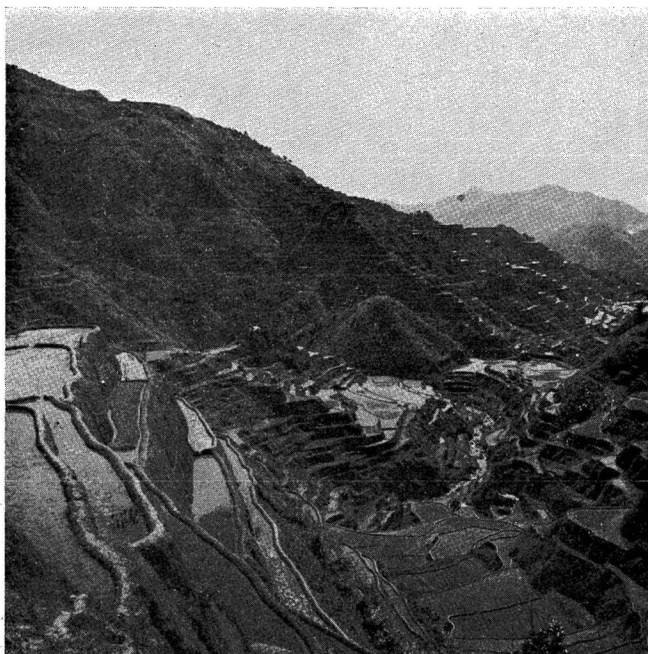


Plate I Banaue Valley rice field terraces, Ifugao.



Plate II Ifugao rice pond terrace under construction.



Plate III The terrace shown in Plate II nearing completion.

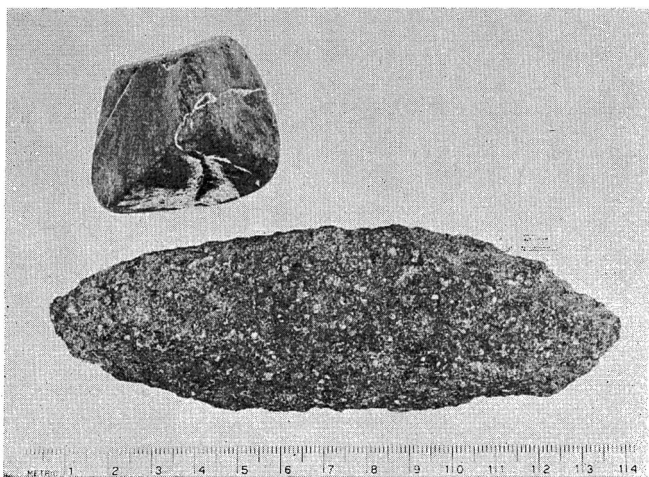


Plate IV Stone artifacts. Polishing stone (*top*),
problematical piece (*bottom*).

Beyer through estimates of how long it would have taken to construct the elaborate systems which fill valley after valley of Ifugao country (Pls. I, II, III).

Beyer does not make clear all of the considerations which went into his estimates, but he came to the conclusion that it "took between two and three thousand years to cover northern Luzon with the great terraced areas that exist there now" (Beyer 1955: 394). Later in the same report, after advancing evidence that the terrace systems had once been more extensive than they are today, he states that "it must have been some time before the terraces reached their maximum extent, because it took a really long time to build those terraces. And so I would rather think that it was a thousand or 1500 years ago when the terraced areas were at their maximum" (Beyer 1955: 396).

Barton's idea was similar.

One who stands on some jutting spur of the mountainside in Asin, Sapao, or Banaue can scarcely help being impressed with the feeling that he is looking upon a work of tens of centuries. Any calculation must be based on vague and hazardous figures of course, but, without having any theories to prove and making due allowance for increased rate of building during peaceful times and for the pressure of the needs of increased population, from a comparison of the estimated area of voluntary rice-field building with the areas already constructed, I come to the conclusion that the Ifugaos must have lived in their present habitat for at least two thousand years, and I believe that these figures are too small. (Barton 1919: 11)

For a time there were no competing statements on the matter, and one could only either accept or reject Barton's and Beyer's estimates with no visibly superior reasons for doing one over the other. In recent years, however, evidence has come in from a variety of directions which mounts a strong challenge to the older hypothesis and supports the view of a relatively recent move into Ifugao territory, probably associated in some way with Spanish pressure. Curiously, as Conklin (1967) points out, despite the richness of reporting on many aspects of Ifugao culture, such fundamental activities as terrace construction have been given scant attention. As information was developed on terraces in other parts of northern Luzon, the age estimates of millennia for terrace building were shown to be unnecessary. Keesing, for example, pointed out that

the whole Loo valley terrace system was built, according to government reports, in about two years. In 1932, the construction of a new irrigation ditch in the Mainit area of Bontok opened the way for "several hectares of new rice terraces" to be built. Even a hundred years of active building, for such people, could undoubtedly accomplish an amazingly extensive series of new or extended terraces. (Keesing 1962: 323)

Similarly, Dozier's (1966) study of the northern Kalinga indicates a very rapid spread of irrigated terracing through that area within a time remembered by people who were living during the period of his fieldwork.

The idea that construction of the great Ifugao terrace systems must have taken thousands of years no longer seems tenable. Nevertheless, the question of age was not settled by destroying the basis for the older age estimates. They still might be correct even though the means of achieving them were not. Keesing (1962) moved

against this situation through his admirable study of the historical materials available on northern Luzon. He was particularly impressed by what was not in these materials. The terraces are simply not mentioned in the early Spanish accounts—"military commanders, mission fathers, and other visitors fail to give them even passing mention" (Keesing 1962: 322-323). Although he advances his analysis with appropriate caution and a recognition of the thinness of his data, Keesing makes it clear that he "has purposely emphasized the possibility that the terracing system developed as late as the beginning of Spanish times . . ." (Keesing 1962: 322). Keesing's argument appears to have less guesswork in it than the older one, but at its center is a similar impression with the immensity of the terrace system. To Barton and Beyer the system was so great that it could only have been constructed over a long period of time, while to Keesing it could not have been looked upon without some record being made.

More recently, Lambrecht has entered the discussion from a direction provided by his great knowledge of Ifugao folklore. In the course of presenting and analyzing one of the Ifugao's long romantic tales or *hudhud*, Lambrecht (1967) builds an argument based on lexical and linguistic evidence from the story that comes to a conclusion very similar to Keesing's. Since he feels that "the evidence Keesing adduces to support his theory is not too convincing" (1967: 318), Lambrecht attempts to shore it up with some of his own. On the question of how quickly terraces might be constructed, he testifies that

on several occasions, the author observed that, within two months time, several (from 5 to 10) stone-walled terraces of moderate dimensions were built by a group of not more than five Ifugaw men working on steep slopes. The author himself has seen five long *halapat*, "narrow stone-walled terraces," constructed within less than three months by one fifty-year-old man who took off many a day to rest and, as a rule, worked only about four hours a day. (1967: 320)

In the matter of direct historical evidence supporting the actuality of a late move into the mountains, Lambrecht is understandably less helpful. In the body of his report, he says, pessimistically, that "Keesing's hypothesis is based on but a few historical documents, and it is doubtful whether further evidence of the kind will come to light to support his inferences" (1967: 323). Nevertheless, in a footnote Lambrecht is indeed able to present some additional documentary evidence recently discovered by William H. Scott in the Dominican Archives at Quezon City. Excerpts are quoted from two manuscripts that provide evidence which, like Keesing's, is not conclusive but can be taken to support the interpretation that the Ifugao had moved into their present territory from the Magat River valley in recent centuries.

Lambrecht is most impressed, however, by what the *hudhud* seems to say. He regards it as obvious that terraced rice agriculture preceded the *hudhud*, since the latter speaks of terraces. What he points to as most significant, however, is that terraces are mentioned emphatically as being around the "center" where the wealthier families live, but are conspicuously not mentioned in the topographic descriptions of the areas of neighboring or outlying villages, whereas today terraces are abundant in both regions. Except for this and one other anomaly to be mentioned shortly, Lambrecht judges that the topographic descriptions contained in the

hudhud “perfectly describe today’s configuration of Ifugawland” (1967: 326). He concludes that the *hudhud* accurately describes an earlier situation in which terracing was present but relatively new and had not expanded beyond a few focal locations. In other words, Lambrecht believes that the rice terraces are only slightly older than the *hudhud* and “that the antiquity of the *hudhud* romances could be approximately determined, if it could be ascertained when the Ifugaw began to build their terraces” (1967: 318).

The other important discordance Lambrecht finds between the landscape of the *hudhud* and that of Ifugao today lies in what he calls the *kadaklan* motif. He translates the word as “large river,” particularly one which has “a *pantal*, a ‘river bed’, wide and long enough to serve as battlefield for the kind of spear fights described in the narrations” (1967: 326), and “stretches of *tubtubuhan*, ‘river reed’, growing in its bed so extensive as to provide an excellent hiding place for someone waiting to waylay an enemy” (1967: 326). Despite repeated references to *kadaklan* in the *hudhud*, Lambrecht finds no such river in present-day Ifugao. He concludes that when the *hudhud* was created the Ifugao must have been living in another place where such a river can be found. The most likely possibilities are the valleys of either the Cagayan or the Magat rivers. Since the Spanish accounts do not mention the presence of Ifugao in the Cagayan Valley when he thinks that they should have been there, Lambrecht dismisses this possibility and decides upon the Magat Valley. “They must have settled in the Magat River area (in the Paniquy area for those who would later settle in the Kiangnan region) before they entered Ifugawland. In this narrow valley, the Ifugaw would have learned wet-rice cultivation from the Isinay of the Ituy region toward the end of 16th century or the beginning of the 17th century” (1967: 331).

Lambrecht finds further evidence for a post-Spanish date for the *hudhud* in passages which he believes describe the use of firearms. In one episode an invisible firebrand is used to burn houses from a distance. Lambrecht interprets the “firebrand” as being a rifle and as providing direct evidence that the *hudhud* in which it is mentioned cannot be pre-Spanish. He goes further in declaring that since this *hudhud* differs in no way from the others except for the episode of the “firebrand,” then they also cannot be pre-Spanish.

For his final evidence, Lambrecht turns to the extensive genealogies he has painstakingly recorded. Among the Ifugao, genealogical knowledge provides the essential evidence to determine ownership of terraced rice fields. Because of the integral relationship between genealogical system and terrace system, Lambrecht assumes with some justification that genealogical depth is a measure of the age of the terraces, or rather that it almost is. “Since genealogies were not yet needed in the beginning, it can be legitimately inferred that the genealogical tree of Kiangnan fails to include the names of the two or three generations of forgotten forebears” (1967: 336). The Kiangnan genealogy goes back twelve generations from the time it was recorded in 1950. Lambrecht estimates 22.5 years per generation for the Ifugao and arrives at 1680 as a likely beginning for the genealogical record. Assuming that the rice terrace system preceded this date by several generations, he places its acquisition by the Ifugao in the early seventeenth century, a dating that neatly supports the thesis that Ifugao culture found its form and place under the proddings of Spanish expansion.

Lambrecht's reconstruction of Ifugao culture history is an interesting one. It has the strength of resting upon three separate sets of evidence—Spanish documents, the *hudhud*, and genealogical time depth—all of which can be interpreted so as to independently support his thesis. Certainly the elements of the reconstruction are more fully revealed to us than those that went into what Keesing called "pseudo-archaeological guesses," a category within which one must believe he included Beyer's age estimates. Nevertheless, just as Keesing and Beyer each had to make certain assumptions before their separate data would lead them to their very different conclusions, so Lambrecht too has had to suppose some things about his evidence before it will all march in the same direction. Keesing and Lambrecht together are convincing in their argument that the terraces could be constructed rather rapidly and that a great span of time was not necessary to allow for their vast spread throughout Ifugao country. One notes, however, that to demonstrate that it was not necessary is not to disprove that it happened.

In his interpretations of the *hudhud*, Lambrecht's assumptions are made at a very fundamental level. To let his evidence take him where it does, he must suppose that the *hudhud* literally means what it says: that it provides a systematic topographic description in that what is not described can be taken not to exist just as what is described can be taken to exist exactly as described, and that what it says today is what it said at its beginning.

Similarly, to match the age of his genealogies with that of the terraces, Lambrecht must assume that the former are complete; that, except for a few generations while the need for them was building up, they begin at the beginning. Unfortunately, Lambrecht's (1954) own account of his Kiangnan genealogies gives little support to his crucial assumption. Among most of the wealthy people (*kadangyan*), those with property interests which would require the support of genealogical knowledge, he found that "they were able to recite all the descendants of their ancestors of the fifth, sixth and even in some cases the seventh and eighth generation" (Lambrecht 1954: 366). A few "experts" could do even better and "began their enumerations from the twelfth generation and up, even from the fifteenth in some instances" (Lambrecht 1954: 366). The situation described is one in which many people have what seems to us a remarkable remembrance of their ancestral relationships and in which some people know more than others. However, there is not the slightest indication that the person who knows twelve generations (or fifteen) is starting at the beginning, only that he is the most knowledgeable.

The difficulties in Lambrecht's interpretation reveal themselves even more directly in the genealogies he gathered in the Mayoyao area (Lambrecht 1953). Initially he worked there with a number of informants but obtained "rather poor and incomplete information" (Lambrecht 1953: 22). Eventually, however, he was led to a man named Mungkolnon, who "is universally recognized as the most famous among all priests and go-betweens and that his knowledge of genealogies exceeds by far that of any other priest and go-between, however influential he may be. No one in Mayawyaw will deny this" (Lambrecht 1953: 22). This is truly having all of the eggs in one basket with what that means in danger of possible loss. Obviously if Mungkolnon were to die before he could pass on his great knowledge to a successor, and this is a laborious and lengthy process, the time depth of Mayoyao genealogies would be less than it is. What Lambrecht describes is a

preliterate system which is remarkably good at retaining certain kinds of information from the past, but which, by its nature, can be expected periodically to suffer information loss. Consequently, one can argue that Ifugao genealogies, rather than representing a cumulative and complete development of one aspect of Ifugao history, are a data system serving important functions in maintaining property rights and certain social relations, a system that, as it has been transmitted through generations, has characteristically gained information from new generations and lost information from its older strata. In the process it has maintained a time depth of up to twelve generations or so, which is all that is needed for it to provide its services.

This critical analysis cannot, of course, refute Lambrecht's position, but it should reveal that the strength of his argument rests upon its weaknesses. The fact that he used several sets of independent evidence in arriving at his reconstruction lends it strength, but in the process he has been required to make a series of equally independent assumptions, each of which can be replaced by a conflicting assumption that destroys the interpretation of that particular set of evidence. Beyer's and Keesing's arguments are simpler and more direct, but they also rest upon assumptions which can rationally be replaced by their opposites. The terraces are extensive, and they may have taken a long time to build, but, on the other hand, they may not have. One would expect persons given command of exploratory expeditions to report such dominating features of the landscape, but men differ in their inclinations to record what they have seen and, in any case, the documents left to history in this instance are almost certainly incomplete.

To criticize arguments is not to fault men's efforts to make them. All three of the scholars mentioned here were attempting to illuminate an important question with the evidence available to them. Their difficulty, one that has repeated itself in the frontier areas of anthropology, is being required to answer questions which are essentially prehistoric with evidence which is not. One of the purposes of this paper is to present an archaeological solution to the controversy.

ARCHAEOLOGICAL EXCAVATIONS IN IFUGAO

In 1961, as a part of a larger study of Ifugao culture, I undertook test excavations at four habitation sites in the central region. It was intended that a program of more intensive investigation would be developed on the foundation of these initial explorations and put into action within a relatively short time. For various reasons, however, the research had to be delayed until early 1973. While it would have been preferable to me to have waited until the whole of the project was completed before reporting the initial findings and not burden the discipline with one more "preliminary report," I have come to the conclusion that further delay is the greater disservice. The literature on Philippine prehistory, particularly that of northern Luzon, is still much too sparse to justify a leisurely treatment of data which do exist. In addition, interested scholars should not be required to discuss the antiquity of the Ifugao occupation without the only archaeological data we so far have which bears upon it, particularly since those data especially illuminate that question. What follows, then, is a presentation of some of the most relevant results of the 1961

excavations, informed to some extent, I hope, by the ethnographic research which was being carried on concurrently as a part of the same project.

Site selection was guided closely by information derived from contemporary Ifugao culture. The most significant considerations were as follows:

1. Terraced, wet rice agriculture is the basis of the Ifugao economy and the most significant single influence upon Ifugao social structure.

2. Given the nature of the mountainous terrain and the agricultural system's need for reliable sources of water, the largest Ifugao social unit based on territory is an agricultural district. It encompasses the territory served by a more or less discrete drainage system and receives its boundaries from the limits of that system. Agricultural districts differ in area and population in accordance with the extent and volume of their respective drainage systems.

3. Regardless of how long the process may have taken, the terrace system in any district was not an instantaneous construction. Some fields were built before others, and one might reasonably expect the first fields to be constructed in locations having the most accessible and reliable sources of water. While there are other factors which determine a good field, such as its size and exposure to the sun, I found that contemporary Ifugao shared this view as the rational one. Their attitude was that if a choice were available, who but a fool would construct a field where the water supply was uncertain in preference to a location where it could be depended upon? In addition, Ifugao legend and oral history are supportive, and Lambrecht's *hudhud* materials at least imply this situation.

4. Ifugao villages are relatively small and scattered throughout the agricultural district. The eleven I studied ethnographically ranged in size from three to forty-five households, with an average of approximately seventeen. Residence can be influenced by a number of concerns, but for those with rice fields the need to live at a place convenient to their property is probably the most common consideration (Lambrecht 1929: 117). Consequently, one should expect that the older habitation sites will be in the area of the older rice fields, and that sites located near the boundaries of the drainage system where the water supply is less reliable and often difficult to exploit will be associated with fields which were constructed later and will themselves be later.

5. Given these conditions, one would expect that in the more mature areas of the Ifugao ecosystem the relationships between the elements of the system would be more stable than in younger areas. This difference should show itself in a greater endurance of pattern in the mature regions as contrasted with fairly rapid ecological succession in the younger. In analyzing changes in landforms, Conklin (1967: 110) expressed it this way:

Such a series of short-term changes in the status of terraced land can be observed only at the periphery of an irrigated sector. At the 'center' (the putatively oldest site) of every agricultural district (*himpuntanagan*), one finds a single, named, ritual plot or parcel (*puntanagan*) which is traditionally the first to be planted, transplanted and harvested. Owners of land at and near such sites tend to keep walls and fields in excellent condition, and in a perpetual [pond] stage.

Consequently, four habitation sites, designated If-1, If-2, If-3, and If-4, were selected for exploratory excavations on the basis of their significantly different locations relative to their respective drainage systems.

If-1 and If-2 are located near the northwestern boundary of the Nabyun agricultural district in the upper reaches of its drainage system (Fig. 2, Fig. 3). According to informants, If-1 was destroyed by fire about 1900 and never rebuilt. If-2 was also an abandoned site, but whether it had suffered the same fate as If-1 is not clear in the memories of those who seemed well informed on If-1. The other sites, If-3 and If-4, are located near the present market and administrative town of Banaue in the heart of the great Banaue Valley. Both are at the bottom of the valley, one on each bank of the Alimit River, which is the principal stream draining central Ifugao.

If-3 is a single house-site which was abandoned around the time of World War II. Since the owner intended eventually to rebuild on it, he would not permit us to excavate on or below the slope leading down from the flat surface of the house platform for fear that our work might make the slope vulnerable to erosion. Because the neatness of Ifugao housekeeping habits determines that the flat living area of the house platform be kept clear by sweeping trash and debris over the edges of the platform, this was an unfortunate decision for us. It meant that we could not sample the richer midden area below and had to content ourselves with excavations on the platform itself. As a result, our sherd sample was less rich than it would

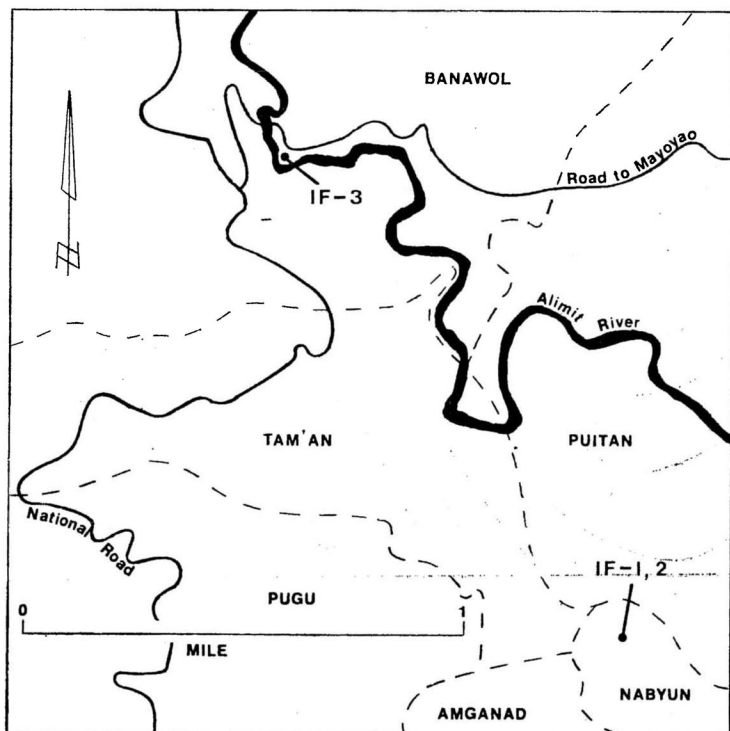


Fig. 2 Ifugao territorial units with locations of archaeological sites (after Conklin 1972).

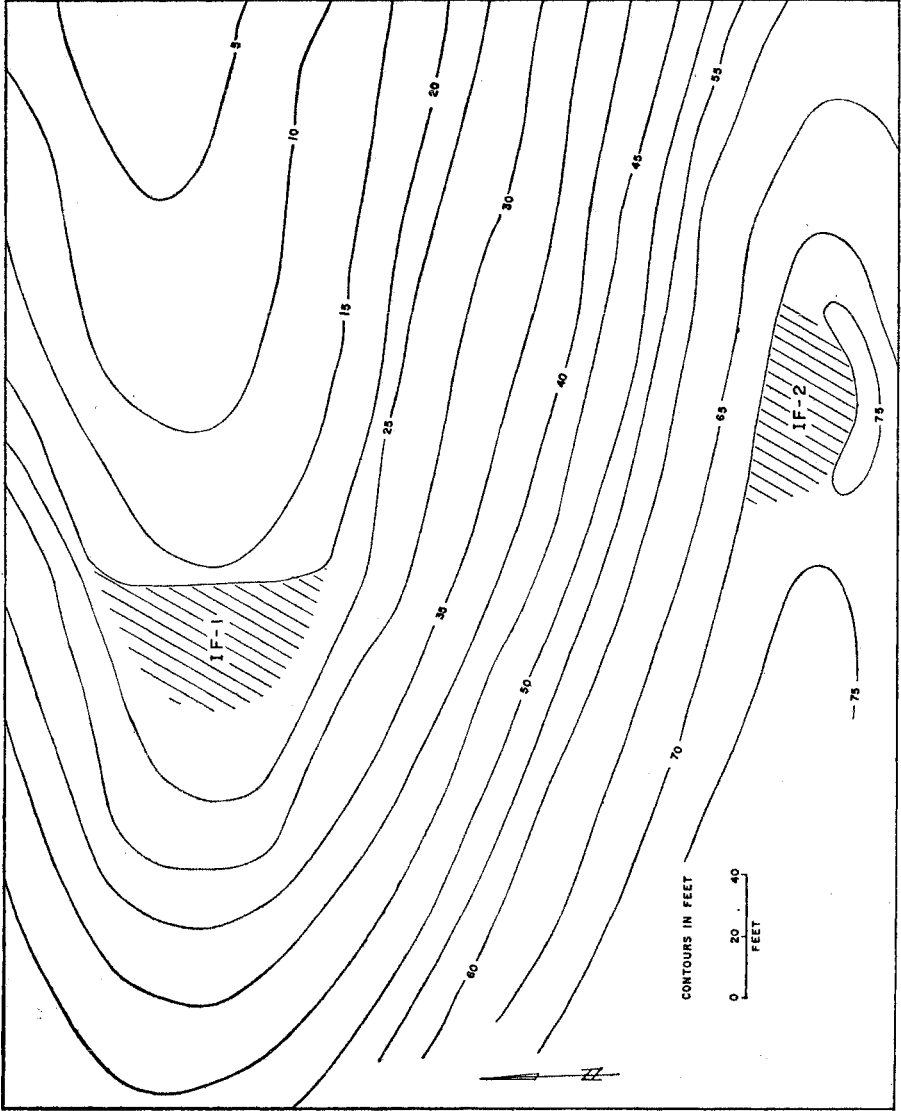


Fig. 3 Relative locations of If-1 and If-2.

have been, but we were able to find datable carbon at a location very nearly on the original platform surface.

If-4 proved to be a disappointment. The site is the still inhabited village of Ambalyu immediately below the town of Banaue. Informants regarded it as one of the oldest inhabited parts of the valley. Permission was obtained to excavate test pits in an abandoned house platform on the periphery of Dukligan and in the steep slopes below the village. Excavations in the house platform were relatively unproductive, and the test pits on the slope produced recent artifacts such as nails, modern crockery, and fragments of glass bottles down to their lowest levels. Among the more interesting finds were .50 caliber machine gun shell casings, evidence of the war years when American fighter planes made strafing runs on the Japanese headquarters in the town above the village. The steepness of the slope had carried older material to the bottom, where it was washed away by the river, and had made a chaotic scramble of what remained. Accordingly, this article will concentrate on If-1, If-2, and If-3, and will leave the unscrambling of If-4 to future work.

Site If-1

One house terrace or platform was tested at If-1 by excavating three 5-foot squares into the flat surface of the platform and two along its descending edge (Fig. 4). The strata revealed by the latter are interesting (Fig. 5). An upper level of loamy clay, designated as Zone A, averaged about 2 feet in depth. Except for two stone objects (Pl. IV), the portable artifacts discovered at the site consisted wholly of potsherds, and these were restricted to Zone A. Next was a level of clay, averaging 10 inches in thickness, which was designated Zone B. The effects of fire on the clay in Zone B could be seen throughout its thickness but were particularly evident in the bottom half of the zone. Below was a stratum of sterile clay which could be distinguished as lighter in color than Zone B and without signs of fire action. It was designated as Zone C, and between it and B we found the charred remains of runo reeds (*Miscanthus sinensis*, called *biláu* by the Ifugao). Carbon-14 analysis gave a date of 205 ± 100 years (GX0668) to the runo. This date and the others reported here are based upon the Libby half-life of 5570 years and are referenced to A.D. 1950. Water seepage was clearly evident along the cleavage lines between Zone C and the levels above and below it. Zone C itself, however, was relatively dry. When excavations in the three squares near the center of the house terrace were taken more than 6 inches into Zone B, water rose into the excavations and covered the bottoms of the pits. Below Zone C and clearly distinguishable from it was a 2½-foot stratum of wet gray clay, mottled strongly with darker areas indicating decayed organic material. My Ifugao excavation crew had no hesitation in identifying this level, designated Zone D, as a former rice pond. Even without such expert testimony the interpretation would not have been difficult. Kept moist by the seepage of underground water, Zone D still looks like a rice field. Beneath the abandoned and buried field we entered a stratum of dense red clay (Zone E), which experience here and at other sites told us was the basic subsoil of the mountain. Because of the special stratigraphy at If-1, Zone E lay under 6½ feet of other deposits. Elsewhere we encountered it much nearer to the surface.

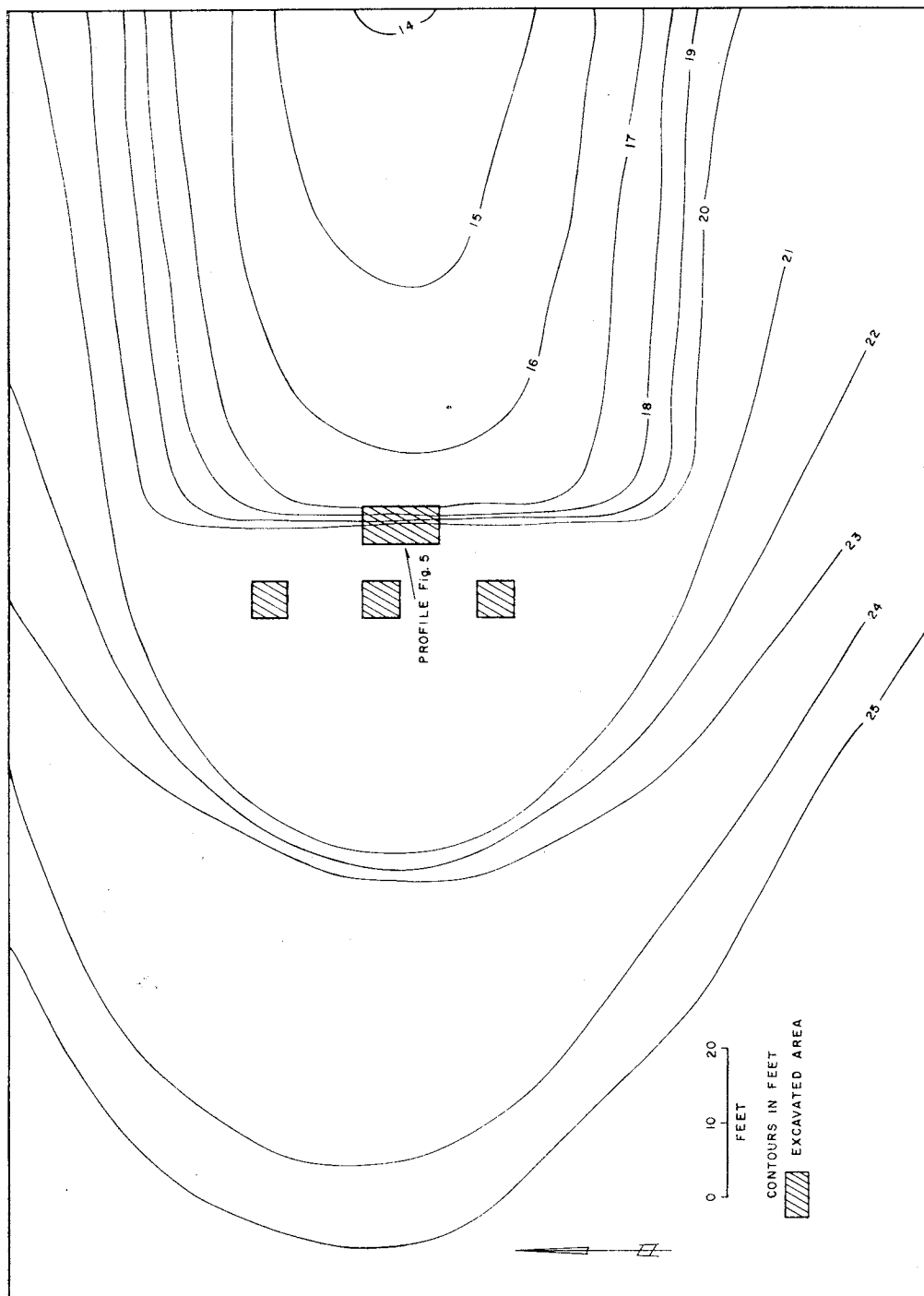


Fig. 4 If-1.

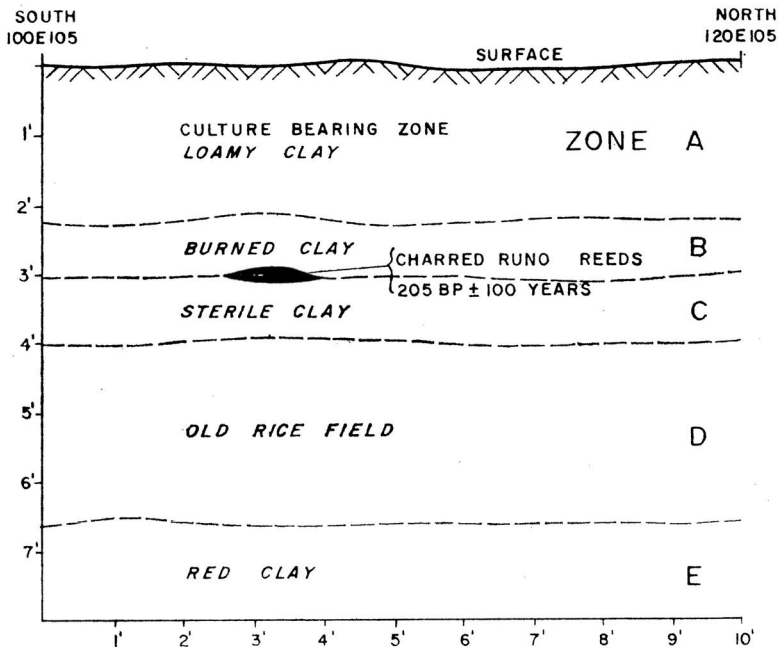


Fig. 5 Profile of excavations from 100E 105 to 120E 105, If-1.

The strata uncovered are the remains of a history of ecological succession specific to the microsystem of the house terrace at If-1. Conklin (1967), on the basis of ethnographic evidence, has defined eight land surface types which cover all significant Ifugao land uses. He has also worked out patterns of sequence which may be expected to occur from one of these landforms to another. The eight types are grassland (G), forest (F), caneland (C), woodlot (W), swidden (S), house terrace (H), drained field (D), and pond field (P). For the Ifugao,

an ideal long-term sequence begins in an initial, homogeneous, natural state of F and develops into an agriculturally dominated environment covered exclusively by P, W, and H. One of the easiest ways to assess the relative economic standing of an Ifugao agricultural district is to note the degree to which this target condition has been approached. (Conklin 1967: 110)

Such an ideal sequence, however, cannot be obtained everywhere. It is more likely to occur in those parts of the drainage system where conditions for successful agriculture of the Ifugao type are most reliably present. As was already suggested, it is also here that settlements are earliest and valued forms of land usage (i.e., rice pond) most persistent. By contrast, as one moves toward the limits of the drainage system the pattern becomes less stable, and some rapid and rather complex sequences may occur. For example, Conklin (1967: 110) has worked out successions at a site first cleared of forest in 1937 which by 1965 had moved through nine major stages involving, at different times, six of his types of landform.

At If-1 the sequence may be interpreted in the following way:

1. Zone E represents the basic subsoil.

2. The rice pond (Zone D) was constructed, obliterating whatever may have been the landform prevailing at the start of the sequence.

3. How long the site remained a pond field cannot be determined from the present data, but this usage was eventually abandoned. Since the terrace is at the periphery of the Nabyun agricultural district, it is likely that the pond field was the victim of an unreliable water supply. Only extraordinary circumstances would cause a contemporary Ifugao to abandon a productive rice field.

4. The next stage was a drained field, during which time Zone C was built up. Whether this was a purposeful construction cannot be told, nor are there any indications of agricultural use during this stage.

5. The line between zones C and B certainly represents an old surface, dating from a time when the site had clearly ceased being cultivated and had become caneland. At this stage the sequence had achieved the only landform which articulates with all others in the system defined by Conklin. Caneland is distinguished by its "lack of sequential restrictions and its unique status as the normal extended fallow or second growth association in the area. As abandoned terrace land loses its shape, a former P, D, or H may shift rapidly to C. It is the most generalized, as well as the most frequently encountered of the agriculturally involved land forms" (Conklin 1967: 109).

6. The Carbon-14 date of 205 ± 100 (A.D. 1645–1845) obtained on the charred runo which lay on this old surface indicates that the site was cleared by burning at a time probably in the eighteenth century.

7. Zone B appears to have been a purposeful construction created with the aim of preparing the surface of a house terrace. The signs of fire action throughout the zone are less easy to interpret. The answer which seems most probable to me is that when the surface was at the top of Zone C a decision was taken to convert the landform to a house terrace. This conversion first required a burning of the substantial growth which had developed over the site and left the fragments of charred runo from which the Carbon-14 date was obtained. Present underground seepage of water both above and below Zone C indicates that the site was too damp for a habitation area and had to be elevated through the addition of Zone B. This was probably done hydraulically over a period of time, at moments when both workmen and water were available. During this phase the site was kept free of vegetation by repeated fires, none of them, however, so large as the first one. The time involved is more likely to have been a matter of months than years.

8. A house was constructed on the prepared platform and the use of the site as a house terrace continued until about 1900, when the structure was destroyed by fire and the site abandoned.

9. Since that time the landform has changed to forest intermixed with small areas of grassland. In Conklin's terms the sequence has been P–D–C–H–F, with P probably having been preceded by F.

Site If-2

If-2 was the most extensively tested of the four sites (Fig. 6). The excavations, which covered 575 square feet, can be divided most significantly into those concerned

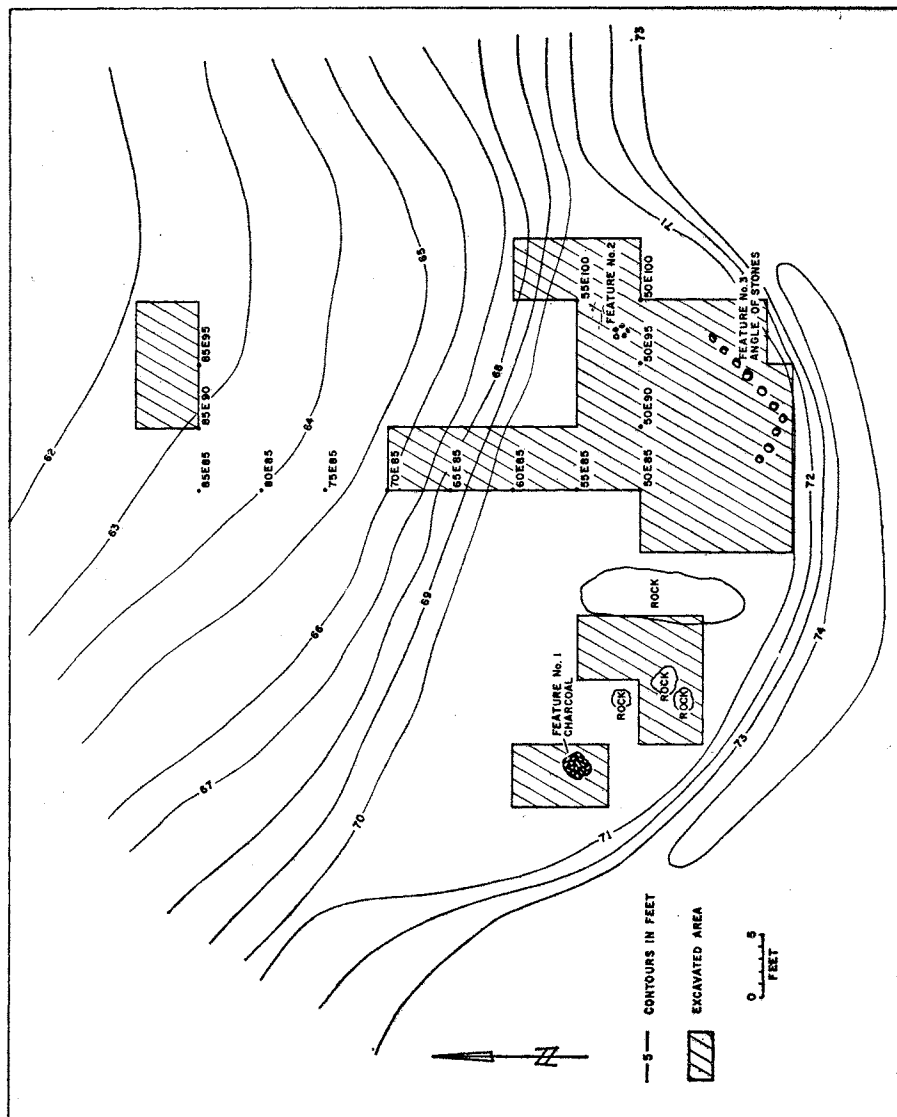


Fig. 6 If-2.

with the more or less level surface of the old house terrace and those along the slope descending from the terrace. In the former several structural features were uncovered. Feature 1 was a dense concentration of charcoal $2\frac{1}{2}$ feet in diameter at a depth of 6 inches to 1 foot, apparently the remains of an outdoor cooking fire. The lack of any ash buildup or fire hardening of the surrounding earth, however, indicates that it was not a fireplace used regularly over an extended period of time. Feature 2 was a closely grouped circle of stones at a depth of 1 to $1\frac{1}{2}$ feet. Although no mold could be made out in the dark soil of that stratum, the location of Feature 2 on the terrace and, in particular, in relation to Feature 3 suggests that the stones had at one time stabilized a house post sunk at that location. Feature 3, an angle of stones 12 feet along one side and 4 feet along the other (Pl. V), is clearly the remnants of the paving that had once extended below the eaves of the house and possibly over the entire area beneath the house (cf. Pl. VI). Ifugao living in the Nabyun district today were definite in telling me that houses should not be built with the door on the west. If that was also true at the time If-2 was occupied, then one should expect the door of the structure indicated by features 2 and 3 to have opened toward the northeast.

In general, the same stratigraphic situation prevailed over all parts of If-2 which were tested. Beneath a thin layer of humus lay a stratum of light brown, loamy clay which averaged slightly less than 1 foot in depth across the flat surface of the terrace and increased to 16 inches in depth in the midden area on the slope leading down from the terrace. This level was designated Zone A. Beneath it was a darker level of loamy clay which was 6 inches thick in most locations but increased to 12 inches in some. This level was designated Zone B. Below it was the same sterile red clay which formed the subsoil of If-1.

At the start, 5-foot squares were excavated in successive 4-inch levels and all finds were located by square and level. After the strata indicated above were recognized in the first pits, the location of material was recorded in terms of both 4-inch level and appropriate zone. Individual measurements were obtained on features, profiles, notable concentrations of artifacts, and fragments of charcoal which seemed especially suitable for Carbon-14 analysis.

Except for a *dalu*^h—a metal tool women use today for digging and weeding (Pl. VII, *bottom*)—that was found near the present surface of the platform, all artifacts recovered from If-2 were potsherds. A total of 410 sherds was taken from the test pits. Most sherds came from Zone A, and the slope midden area was more productive than the platform.

Although If-2 was a purposely constructed house terrace and in that important respect identical to If-1, it necessarily was constructed in a different way. Whereas If-1 was built up to the desired level and contour, probably, as I have suggested, by hydraulic techniques, If-2 was excavated, literally cut into the earth near the top of a ridge line. Because of its relatively high location in respect to water sources, the task must have been done by hand with the digging tools customarily used in Ifugao agriculture.

Three Carbon-14 dates were obtained on charcoal samples from If-2. In each case the samples were chosen with the aim of obtaining information on the time of initial habitation. One of the samples was from the platform (square 55E85) and two were from the midden on the slope (squares 85E90 and 85E95) (Fig. 6). All



Plate V Angle of paving stones from house site at If-2.

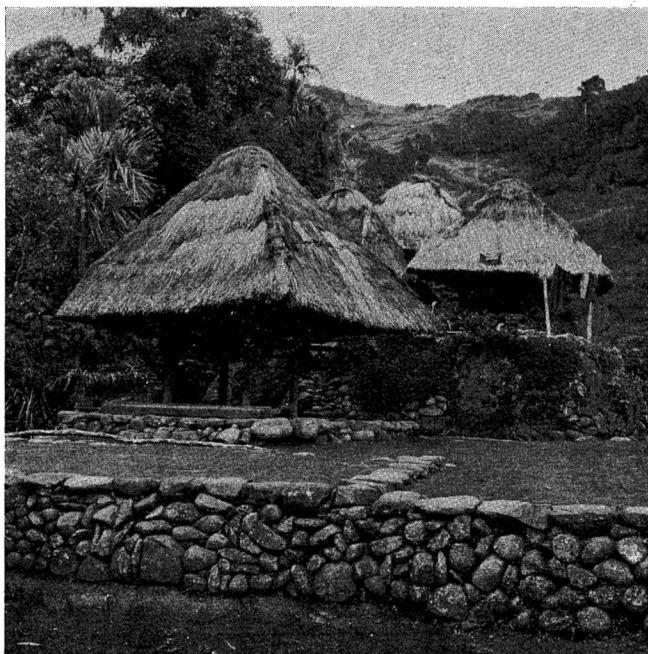


Plate VI Ifugao houses showing some contemporary uses of paving stones.

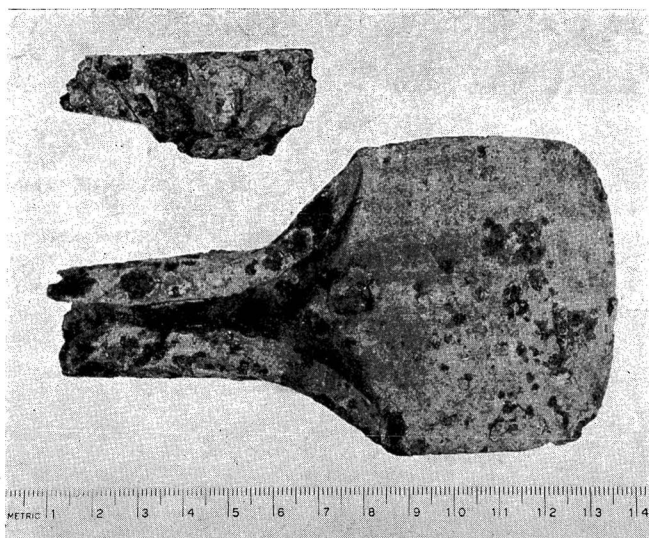


Plate VII Iron artifacts. Fragment of blade (*top*),
weeding and digging implement (*bottom*).



Plate VIII House site at If-3 showing stone paving still in place.

of the samples came from the lower part of Zone B. The youngest date was from the platform, 325 ± 110 B.P. (GX1900) or A.D. 1625 ± 110 . The two dates from the midden were older and in close agreement, 695 ± 100 B.P. (GX1901) and 735 ± 105 B.P. (BX2184), or A.D. 1255 ± 100 and A.D. 1215 ± 105 .

One could suggest that the lesser age of the date from the platform, even though it is from a stratigraphic location apparently similar to that of the midden dates, indicates that the midden must predate the terrace. I am convinced, however, that this is not so. Structurally the two are clearly associated, and the midden and the platform must be considered as parts of the same habitation record. There are a number of ways the disparity in dates could be explained, but I think the most likely is connected with the Ifugao housekeeping habits mentioned earlier. The midden was built up by the regular and purposive actions of the women intent on keeping the living area of the platform clean and uncluttered. What is left on the platform is a testimony to accident and omission. The midden deposits are not only richer, they also offer a distribution of material which is more regular and reliable.

On the basis of ecological considerations, I have suggested that If-1 and If-2 must represent later rather than earlier occupations. Nevertheless, the dates from the midden at If-2 are clearly incompatible with the thesis that the Ifugao moved to their present territory under Spanish pressure. The two dates are very close and therefore mutually supportive. On this evidence one must assume that If-2 was occupied several hundred years before any possible Spanish presence.

Site If-3

Since If-3 is located in the heart of the great Banaue drainage system, one should expect its initial occupation to be early rather than late. On the surface, however, it differed most obviously from If-1 and If-2 in showing visible evidence of recent occupation. In general, its terrace was less overgrown and had no trees as large as those which had grown on the platform of If-2. Most obvious was the stone paving on the area over which the house must have stood (Fig. 7 and Pl. VIII). The undisturbed paving stones attested not only to the recency of occupation but also to the owner's intention to build on the site again. Otherwise the prized stones would have been removed and used at a different location.

Restricted by the owner to testing only on the platform, we excavated two areas along the edge of the stone paving. As at the other sites, digging proceeded by 4-inch levels. Unlike the other sites, however, no strata were distinguished other than a culture-bearing zone of gray, loamy clay which extended from the surface to an average depth of 14 inches. Below it was the dense, red clay of the subsoil which formed the surface of the platform when it was originally constructed. Since the location is so convenient to the river it seems likely that some use was made of water in carving out the original terrace, if current capabilities in hydraulic engineering were available then. Unfortunately, the limited test excavations at If-3 give no answer to this important question.

Due to the restrictions placed upon our excavations, If-3 produced the fewest artifacts of all the sites. A total of 51 sherds was recovered, none from deeper than 12 inches. In addition, a rusted fragment of iron (Pl. VII, *top*) was taken from a depth of 3 inches. Charcoal was present, however, throughout the deposits above

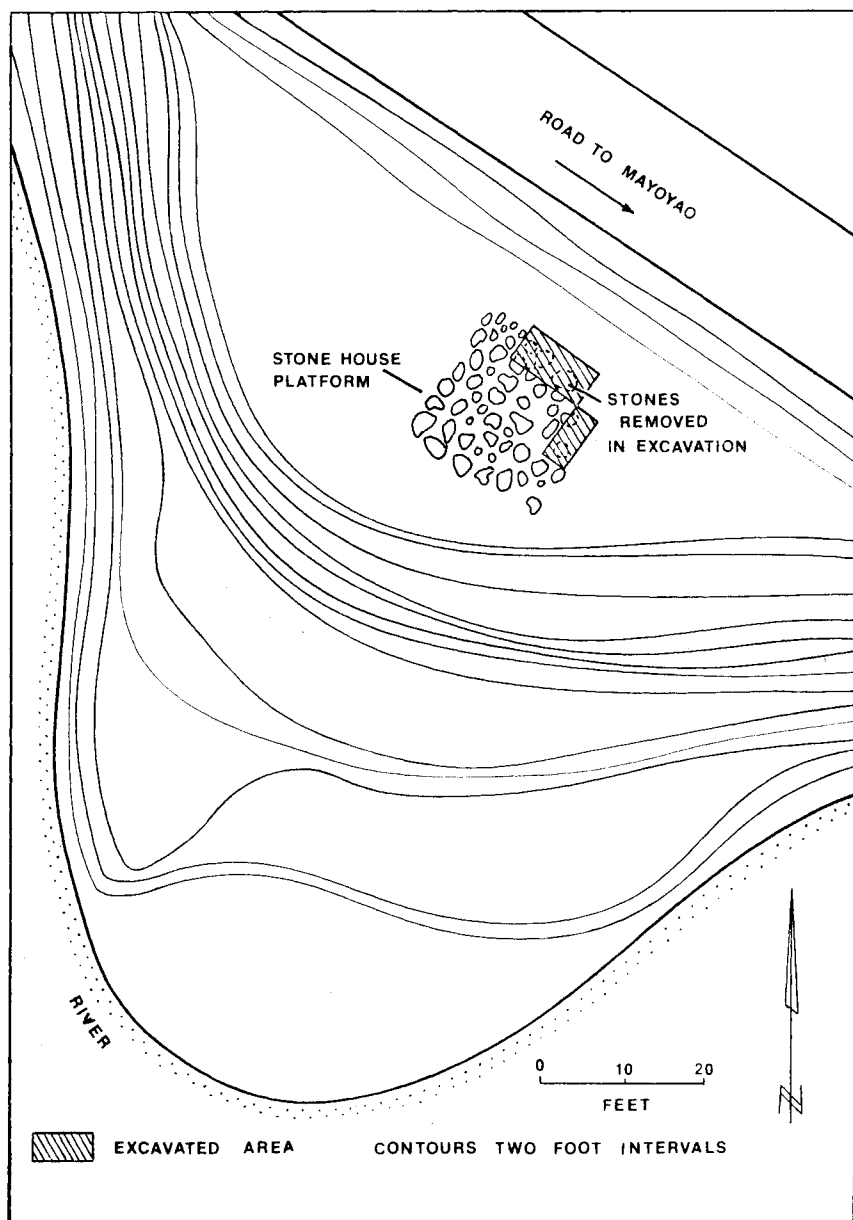


Fig. 7 If-3.

the sterile, red clay. One small sample from a location $1\frac{3}{4}$ inches above the original, constructed surface of the terrace was sent for radiocarbon dating. The result was 2950 ± 250 B.P. (GX2183) or 1000 B.C. ± 250 . Although caution is required due to the fact that only one small sample has been dated, it can be said that the dates on the ecologically peripheral If-2 make this substantially earlier date on a site central to an Ifugao ecosystem seem at least reasonable. The limited number of

dates so far obtained relate together in an expectable pattern and give support to the view that they accurately represent both the order and the time dimensions of a cultural sequence.

Artifacts

Considering the extent to which the Ifugao have been studied and reported on, we have remarkably little information on their material culture. The most systematic and comprehensive published reports, those of Barton and Lambrecht, concern themselves predominantly with beliefs and activities. Material objects, artistic or utilitarian, are peripheral to these accounts and ordinarily receive only superficial treatment. One of the exceptions is Lambrecht's brief monograph, *Ifugaw Villages and Houses* (1929). In it Lambrecht gives an admirably detailed account of the structure of an Ifugao house. Unfortunately, he virtually ignores the terrace and the area around the house, even though, as he says, "the Ifugaw lives outdoors and goes indoors mainly to sleep" (Lambrecht 1929: 126).

In each of the three sites discussed in this report, the principal artifact was the house terrace, a structure purposely constructed by altering the natural contour of the mountain so as to create a typically Ifugao habitation area. As has already been noted, the means of construction differed, depending upon the availability of water power to the site and the problems presented by the immediate terrain. In all cases the product was a flat, well-drained surface which could offer space for one or more houses and the household activities which normally took place around them.

All three terraces were semilunar in shape (Figures 4, 6, and 7), a form which develops naturally out of the altered contour in many instances and should not be regarded as having a special cultural significance. Experience with contemporary Ifugao villages makes it clear that the aim is to obtain a flat, dry surface of convenient dimensions. Beyond that, no special shape is sought. Nothing about the terraces of If-1, If-2 or If-3 indicated that they were in any way different from contemporary structures. The three platforms varied in size, as house sites do today. If-3 was the largest, measuring 96 feet in length and 38 feet in greatest width. If-2 was 60 feet long and 26 feet wide, and If-1 was 72 feet by 44 feet. The limited nature of the excavations made it impossible to investigate the terraces to the extent necessary to determine the number and variety of living or storage structures they supported, but their dimensions and the placement of the house remains at If-2 and If-3 make it probable that there was more than one on each.

Potsherds were the most common artifacts recovered by an overwhelming margin. Unfortunately, one searches the reports of Barton, Beyer, and Lambrecht in vain for any truly usable information on ceramics. Nowhere do they give us the detailed and systematic data which Jenks (1905) provided on the neighboring Bontoc. For the Ifugao, the best account in print is that by Solheim and Schuler (1959) based upon information gathered by William Henry Scott. Scott's most extraordinary finding was that in some regions of Ifugao potters were male and in other regions they were female. The fact of male potters is in itself an unusual feature for a Philippine society. Conklin (1953) has reported some pottery manufacture by males for Buhid, but as an exceptional and not very skilled effort within a tradition dominated by women. Solheim (1952) flatly states that the Ifugao are "the only important [Philippine] group where pottery is not made by women" (1952: 16).

Even more interesting, however, is the reversal of this aspect of the division of labor in different geographic areas of the same culture. Moreover, techniques of manufacture differ significantly between the areas of female and of male potters. In central Ifugao, where the sites we are concerned with here are located, potters are and have been male. From Scott's data it seems that the territory of male potters was both more central and larger than that of female potters, including most and perhaps all of Ifugao except Kiangnan in the southeast and Mayoyao in the northeast.

Data which I gathered ethnographically in 1960 and 1961 from informants living in the Banaue, Amganad, Puitan, and Batad districts (Fig. 2) accords well with that reported by Solheim and Schuler but goes beyond it in some aspects. Today pottery manufacture is a rapidly disappearing craft. Cheap aluminum and iron pots, manufactured in Manila and elsewhere, are readily available in the market town of Banaue, and people have no difficulty in recognizing their superiority. Moreover, there are no significant cultural barriers to the substitution of metal pots for local ceramics. Unlike the imported wares from China and Southeast Asia, which are used as containers for rice wine and have an important role in ritual and status, pots produced by the Ifugao are valued almost wholly for their utilitarian function as containers and beyond that seem to hold little interest for their owners. The extreme plainness of the pottery excavated from all of the sites suggests that this was the situation prehistorically as well, and that at no time during the period covered by the excavations did the Ifugao have much interest in expressing themselves through ceramics. What was valued and elaborate came in by trade and was always scarce.

Most potters are now either dead or inactive, and new ones are not being recruited. In the past most came from the *nawotwot*, or lower class, and sold their pots for rice, chickens, or, more recently, money. In 1961 an average-sized pot with a body diameter of about 12 inches, which formerly sold for six bundles of rice, brought fifteen. If sold for money the same pot would bring three pesos, a smaller one, two pesos. Some of the largest, which are used as water containers, could be sold for five pesos. Even with inflation, however, most potters do not consider these returns sufficient for the labor of manufacture, and today commerce in Ifugao-manufactured ceramics has virtually ceased. It is, however, still possible to gather information on this all but dead craft.

The male potters of central Ifugao, called *mun-amma bañga*, use a dark clay which can be found only in limited deposits. I was told, however, that all districts had some such deposits. The potter himself makes a special trip to obtain the clay which he will use. On his journey he must carefully observe any omens which might foretell the failure of his venture. If he sees a snake, or a red bird called *icho* flies across his path, or if he hears the *icho's* cry given rapidly, he must return home and postpone his trip to another time, otherwise his pots will not turn out well. In addition, the project should not be started at all if there is a dead person in his village.

If no evil omens appear, the potter, assisted perhaps by a younger male relative, digs his clay (*luta*) and returns with enough to make five to ten pots. This part of the project requires from a half to a full day, depending upon the distance traveled. The manufacture of the pot proceeds through the following stages:

1. The clay is placed on a wide, flat stone and pounded (*bayuon*) with a wooden pestle of the sort used to grind rice until the clay becomes finer in texture and more adhesive. If possible, this is done on the day the clay is obtained and requires about two hours of labor. The next day it is pounded again for a shorter period of about an hour or slightly less. No temper is purposely added.

2. The pot is begun by shaping the base within the contour of a round wooden bowl (*chuyu*), the size of which varies according to the size desired for the pot.

3. The potter builds the pot above the base by coiling (*mullimulon*), adjusting the length of the coils so that the places where the end of one joins the beginning of the next are distributed on different sides of the pot. The rim is shaped from the final coil.

4. Once the pot has been constructed, the potter presses on the interior of the wall with a stone or a smooth coconut drinking cup (*amad* or *pangamad*) while countering the pressure on the exterior with his other hand. In this way the walls are made more even and thin, and the pot is expanded and shaped. The entire process of constructing and shaping one pot takes a little less than two hours. Scott's informants told him that small designs were impressed with the fingernail during this stage of construction. He saw no examples, however, and my informants denied any knowledge of such decorations.

5. Next the pot is placed in the sun to dry for about two hours.

6. After drying for this brief period, the inner and outer surfaces of the pot are scraped with a sharpened piece of bamboo or other suitable tool, such as a metal knife blade (*cohcoh*), and then gently rubbed with a smooth stone (Pl. IV, *top*) to complete the surface treatment, the process taking about one-half hour. Scott reported that in some districts a red clay slip was added around the mouth of the vessel and partway down the outside. Although my excavations recovered two red-slipped sherds (one from If-1 and the other from If-2), my informants did not use the technique.

7. The shaped and smoothed pot is then sun dried for a period of two to seven days, depending upon the available sunshine and the activity schedule of the potter.

8. When both he and the pots are ready, the potter arranges a ring of firewood made of pieces about 6 inches in diameter and 20 inches long set on end with others piled against them. The pots to be fired are placed mouth up in the center but without touching the wood, which is then set on fire. Once the firing has begun, no one who is not already there is permitted in the area of the fire until the first pot has been successfully taken from the fire. Otherwise, it is believed that the pots will be damaged.

9. When, as my informants put it, the pots get red hot "like a blacksmith's iron," they are lifted from the fire by a long stick inserted in their mouths. While the pot is still hot the potter rubs both its interior and its exterior with a block of resin (*libuh*) which melts in contact with the hot surface and acts to make it smooth and nonporous. The resin treatment continues until the pot will no longer absorb it, a matter of ten to fifteen minutes. This use of resin is apparently unusual in Southeast Asia and the Pacific. Evans (1955) reported its use by the Bajau of North Borneo and stated that Fiji was the only other place in that large area where he

knew the practice to exist. Solheim (1952), however, has reminded us that it is reported in the literature for the Bontoc and Tinguian of northern Luzon and for New Caledonia as well. Adding to the list, Foster (1956) has given an account of pottery manufacture in Albay Province, Luzon, in which a resin coating is applied. More recently the trait has been reported for the Kalinga (Solheim and Schuler 1959), also of northern Luzon, and to the south in Zamboanga (Szanton 1963, Spoehr 1968). More instances will probably come to light, but the trait does not seem to be common in this region of the world, and its distribution is scattered except for what may be a significant cluster on Luzon.

Just as the potters of central Ifugao have little interest in decorating their wares, so they seem almost as unconcerned with expressing themselves in variations of form. With one exception, so far as I have seen or had reported to me, they produce globular pots (Fig. 8), some more flat on the bottom than others, with a few rim variations. The principal distinction in this otherwise uniform ware is between cooking pots (*banga*) (Pl. IX) and water vessels (*pannuman*) (Pl. X). The latter tend to be longer necked and are equipped with a handle while the former are not. Nomenclature of the parts is simple but adequate. The base of the pot is called *chopona*; its sides, *taglangna*; its neck, *bagangna*; its rim *timidna*; and its handle, *tayuna*. In addition, the body of the pot as a whole is called *achorna*.

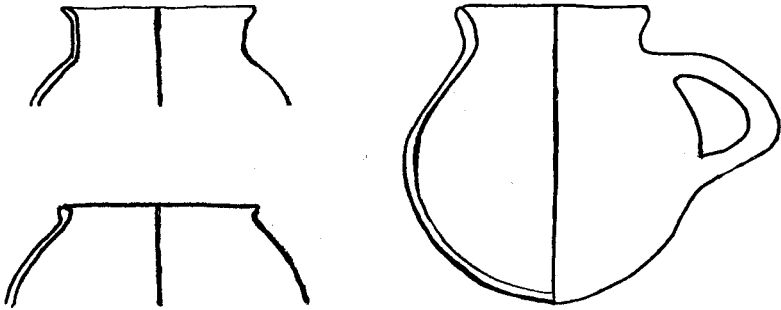


Fig. 8 Principal variations in contemporary pottery vessels of central Ifugao.

The only exceptions to this very plain and utilitarian ceramic complex are pots made in the shapes of animals. These are exceedingly rare. The only one I have actually seen was recently collected by William Beyer in the Kambulu district to the east of Banaue (Pl. XI). I have also been given descriptions of such pots by people who have seen them in the somewhat isolated Batad district. In most instances the animal represented is probably a pig but may be a dog in others. As with ordinary pots the main distinction within the effigy ware is between those made for cooking and those intended as water or wine jars. The functional difference shows in the design: cooking pots have longer legs which raise them above the fire. The pot shown in Plate XI is clearly a water jar. In some cases which I have been told about but have not seen the water or wine jar has its opening through the animal's mouth, which is plugged with a wooden stopper carved to represent the animal's tongue.

Sizes of pots also vary. In pots of ordinary shape, those for water tend to be larger than those for cooking. The latter, however, have a significant range of size



Plate IX Ifugao cooking pot.

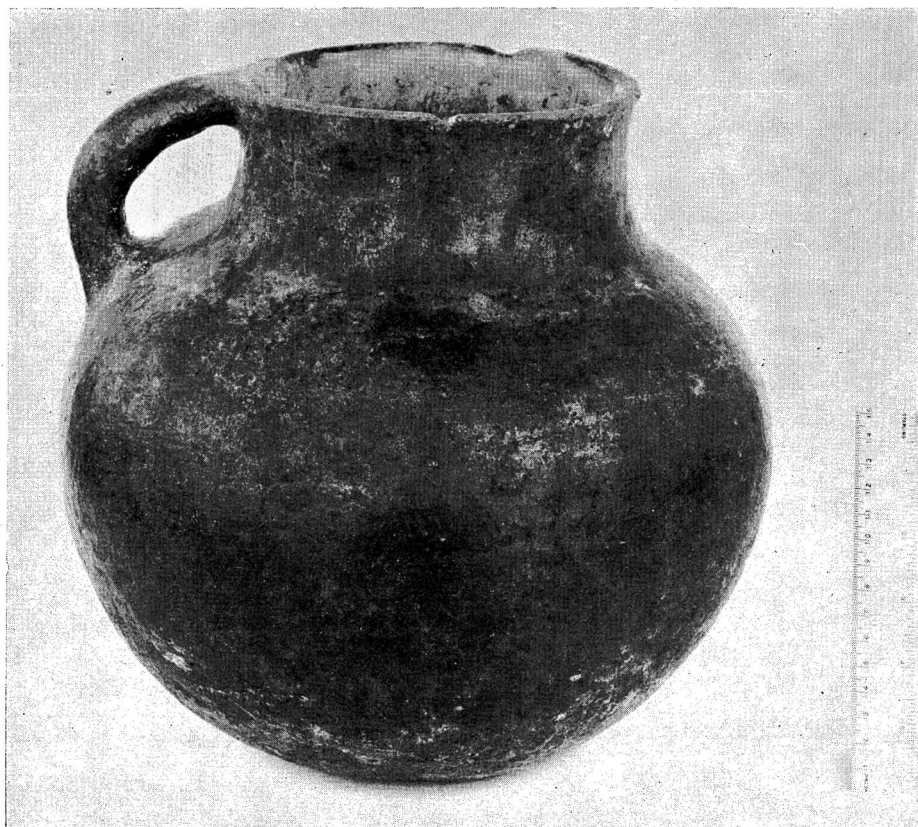


Plate X Ifugao water jar.

difference which is categorized by the Ifugao and expressed in terms of capacity. A pot large enough to cook only one bundle of rice is called *mahinbot-an*. In increasing size the categories are *maduanbot-an*, two-bundle capacity; *matulunbot-an*, three-bundle capacity; and *maliman*, five-bundle capacity. The largest, which may be used for such tasks as cooking food for pigs, holds an equivalent of ten to twenty bundles and is called *punhorchan*.

According to Scott's information, the female potters of Kiangnan (Munggayang district) and Mayoyao (Balangbang district) employed techniques of manufacture significantly different than those of the male potters of central Ifugao. In Kiangnan the clay is purposely tempered with sand, and the pot is built through modeling, rather than coiling, with the aid of a wooden paddle and a stone anvil. Before firing, the pots are heated over a hearth. For actual firing they are placed on their sides on a layer of wood and then covered with more wood and grass. The fire is allowed to burn itself out before the pots are removed, and no resin is applied. The pot is said to be red in color, while those of central Ifugao tend more toward gray-brown to reddish brown. The female potters of Mayoyao follow similar procedures, except that resin is rubbed on the inside of the pot and the upper third of the outside. At just what point in the sequence of manufacture this occurs the account is not clear. Except for details, the female potters of Kiangnan and Mayoyao seem to work in essentially the same way.

The prehistoric pottery recovered from If-1, If-2, and If-3 is remarkably like that manufactured today. Of the total of 660 sherds (199 from If-1, 410 from If-2, and 51 from the smaller scale excavations at If-3), not one showed any decoration. The only shape which could be determined was globular, and the rim forms were essentially variations of those shown in Figure 8, which can also be found in contemporary pots. Two fillet loop handles were found, both from If-1, suggesting the presence of the current distinction between water jars and cooking jars. If-1 also produced one sherd of an imported ware, called *Patongtong an chumay-ah* by the Ifugao. One of the many trade wares from the Asian mainland, it is brown with a slightly glazed surface. Otherwise it is not notably superior to the native products and is distinctly inferior to most trade wares. The least valued of the many mainland wares in Ifugao, its traditional Ifugao value is one pig. This and other trade jars are used for rice wine served at rituals. They are by no means regarded as expendable, but are important items of inheritable wealth. As a consequence, they are preserved with great care and seldom end up in the debris the archaeologist must work with.

Despite the common plain characteristics, there are differences between the ceramic complexes in the three sites. If-2 in particular contrasts with the others in color, temper, and the extent to which sherds have lost material from both external and internal surfaces. Although there is some overlap in the range of color, and all assemblages had some sherds with firing clouds, one would have substantial success in distinguishing a sherd from If-2 from those of other sites on the basis of color alone. Taken as a collection, the contrast is clear. In terms of the Munsell color standards, If-2 sherds are predominantly a moderate reddish orange (10 R 6/6) to moderate reddish brown (10 R 4/6). Those from If-1 and If-3 are more frequently yellowish gray (5 Y 7/2). The color of both surfaces and core indicates that all of the pots were fired in a predominantly oxydizing atmosphere. Nevertheless, the

sherds from If-1 and If-3 seem to be the products of a somewhat more ventilated bonfire than those from If-2.

To even a casual examination, the tempering materials in the If-2 sherds include significantly larger particles than those found in the If-1 and If-3 sherds. In the latter, the temper could very well have been an accidental inclusion and no departure from contemporary practices in central Ifugao. The If-2 temper, however, contains particles of such size that accident seems much less likely. Sherds from each site were thin-sectioned and examined microscopically. All contained very fresh, unweathered fragments of hornblende and weathered particles of quartz and feldspar. I would suggest that the fresh hornblende was accidentally incorporated during the process of manufacture and came from the stone mortar on which the clay was initially pounded. The weathered quartz and feldspar is sand, most or all of which was already intermixed with the clay before it was dug. The larger fragments in the If-2 sherds suggest the purposeful use of stream-bed sand. These sherds also contained large fragments of what appeared to be either a soft shale or a deeply fired pottery.

In addition to color and size of temper, the If-2 sherds differed markedly from the others in the extent to which their interior and exterior surfaces had eroded. While the condition was virtually absent from If-1 and If-3 sherds, a substantial majority (84.6%) of those from If-2 showed a loss of surface material. To evaluate the extent of the erosion, all sherds which were not from the rim or neck were measured for thickness. The respective means were 6.30 mm (If-1), 4.85 mm (If-2), and 5.19 mm (If-3). Means were also calculated separately for zones A (5.03 mm) and B (4.57 mm) of If-2. The quantities obtained were subjected to an analysis of variance. The results are summarized in Table 1.

TABLE 1

GROUP COMBINATIONS	N	VARIANCE RATIO
If-1, If-2, If-3	465	8.99*
If-1, If-2	424	16.70*
If-1, If-3	149	2.04
Zones A and B of If-2	316	2.78

* Difference significant at 1% level.

Although the means for If-2 and If-3 are the closest, the statistical test showed that the variations within the samples from those sites were significantly different. Despite the difference in the means of their samples, If-1 and If-3 do not show significantly different variation. In addition, while the stratigraphically lower and presumably older sherds from If-2 were thinner than the stratigraphically higher ones at the same site, the difference was not statistically significant.

There seems to be nothing about the sites which would favor preservation in If-1 and If-3 more than in If-2. The soils are similar, and If-2, if anything, would seem to have the advantage as the best drained of the three. The contrast seems most likely to be associated with differences in material or techniques of manufacture. In the judgment of a skilled ceramicist, Marc Hansen, the eroded condition

of the If-2 sherds is probably due to the fact that these vessels were slipped before they were fired with a clay different from that of which they were principally constructed. The slip was most likely kaolin and required a higher firing temperature than the pot itself. Since it did not receive the proper temperature, the slip has tended to flake and crumble as the years have gone by. Two sherds with eroded red slips were found, one from If-1 and the other from If-2. The two sherds are very similar and contrast strongly with the eroded sherds which make up most of the If-2 sample.

The sand-tempered pottery Spoehr (1968) reports from Zamboanga is substantially thicker, averaging from 6 to 8 mm, but shows an apparently similar surface erosion. Spoehr, however, describes the surfaces as unslipped. In addition, contemporary Zamboangan pottery is reported to have surfaces which erode easily but which are unslipped (Szanton 1963, Spoehr 1968). At the root of the problem is probably an inadequate firing relative to the physical properties of the particular clay used, and the conditions may be produced by the slip technique mentioned above or by any of a number of other inadequacies.

In summary one can say that the ceramic samples from If-1 and If-3 are similar to each other and to the contemporary complex in central Ifugao. The sample from If-2, however, is distinctly different in a number of characteristics. In temper and the indication of a slightly less oxydizing atmosphere, it resembles the product of the female potters of Kiangnan more than that of the male potters of central Ifugao. In the frequent use of a slip it differs from the present pottery of the same area. Slipping is reported for a variety of regions within Ifugao, including the central, but we have no data on where it might be of great frequency. On balance we can say that the If-2 sample shows more similarities to the Kiangnan ware than to that of central Ifugao. It is possible that in the past that tradition had a wider distribution, and that If-2 represents an extension of it into the central region about eight hundred years ago.

Only four nonceramic artifacts were recovered, two of metal and two of stone. The Ifugao have practiced a relatively sophisticated metallurgy for as long as our brief historic accounts provide any evidence. Lambrecht believes that there is a necessary connection between terrace building and iron tools.

Terrace building is not simply a matter of leveling a mountain slope and of building retaining stone walls, which could be done without iron tools. It involves removing the many stones of varied sizes and shapes that crop up on almost every slope as the work of leveling proceeds. Although some stones can be toppled into pits or rolled toward the edge of terraces under construction where they can be used for stone walls, the rest must be split and fragmented, lest they reduce considerably the arable space of the terraces. The early Ifugaw terrace-builders must, therefore, have had iron tools, crow bars, or at least pikes, to split the big stones. (Lambrecht 1967: 319)

Plate VII illustrates the metal artifacts found in these excavations. The large iron digging tool was discovered just below the surface of If-2 near the base of a small tree which had grown on the site. There is a possibility that it had no association with the site but had been stuck into the ground and left there by an absent-minded worker, who had found the flat and shaded remains of the old terrace a convenient

place to rest from his labors in the fields below. In any case, it must be considered much later than the If-2 Carbon-14 dates. The smaller specimen is apparently a fragment of an iron blade. It was discovered at If-3, only 3 inches from the surface.

Whatever the merits of Lambrecht's hypothesis concerning the correlation between terrace construction and iron metallurgy, it is clear that it is not tested by the present archaeological evidence. Both specimens must be considered relatively recent and do not allow us any decision as to when the Ifugao acquired iron or whether it played a necessary role in the appearance of agricultural terraces.

Stone tools are not plentiful in the contemporary kit of Ifugao culture, so one is not particularly surprised to find them scarce in excavations of what appear to be typical Ifugao habitation sites. The larger piece in Plate IV is of weathered igneous rock, containing black hornblende, phenocrysts of light-colored feldspar, and reflecting iron oxides. It may, indeed, not be an artifact at all, but its form gives an impression of purposeful manufacture. The smaller piece in Plate IV can be identified more confidently as a polishing stone of the sort used in pottery manufacture. It is a dense, brown chert with fractures recemented with white quartz. Its largest surface is worn very smooth with the exception of some small but clearly visible striations. Both stone pieces came from If-1, Zone A.

Aside from relatively plentiful charcoal fragments, organic remains were even more scarce than nonceramic artifacts. The charred runo found at If-1 has been mentioned. In addition, the excavations at If-3 produced the distal end of a domestic goat's humerus from a location $3\frac{1}{2}$ inches below the surface. The goat has not been traditional to Ifugao animal husbandry. In recent years, however, one or two individuals have experimented in raising the animal for food and profit in the area very close to If-3. The bone fragment undoubtedly came from one of their animals. No further organic remains were discovered in the three sites. The brief inventory testifies to the poor conditions for preservation in central Ifugao.

INTERCULTURAL RELATIONSHIPS

Any consideration of prehistoric intercultural relationships in the Philippines suffers fundamentally from the relative lack of archaeological data. Beyer's (1947, 1948) grand reconstructions of the past, which saw the terrace-building peoples migrating into south-central Luzon from Indochina before 500 B.C., were based on a dubious racial analysis and a view of culture change which was diffusionist to an extreme (Jocano 1967, Yengoyan 1967, Evangelista 1971). Such patterning of the past gave us the comfortable feeling that we knew something substantial about it, when, in fact, we did not. Objectively, Beyer's theories cannot be taken as more than the speculations of an able man who had spent a lifetime working with the problems of Philippine anthropology.

Nevertheless, some picture of both the synchronic and diachronic relationships between prehistoric complexes is beginning to emerge for the central and southern Philippines. Solheim's (1964a) integration of what we know of the central region and Fox's (1967, 1970) excavation of the ancient sequences in the Tabon caves of Palawan have been particularly illuminating.

Of northern Luzon, however, very little is known. The archaeological neglect of an area which anthropologists generally regard as ethnographically important is

astonishing. Some of the work which has been done may eventually be seen as highly important, but at the moment there is so little of it that it lacks context and relationships. In December of 1957, Daniel Scheans and G. H. R. von Koenigswald (1958) made a brief trip to the region between the Chico and Cagayan rivers where there are several lines of young anticlines whose flanks present Pleistocene deposits. Von Koenigswald made a second visit to the area the next month. The result of these investigations was a collection of sixteen pebble tools which von Koenigswald regards as Pleistocene in age and has named the Cabalwanian. In 1966, Inocentes Paniza of the National Museum collected additional tools and some stegadon fossils from the same area (Scott 1968).

More recently, Warren Peterson (1970), then a student of Solheim's at the University of Hawaii, excavated two sites in northern Luzon, one a multicomponent rock shelter in the Sierra Madre Mountains of Nueva Vizcaya Province, the other an open air habitation site on Palanan Bay, Isabella Province. Although the sites apparently differ culturally, together they represent a time span of roughly 3000 B.C. to the beginning of the Christian era.

It is clear that von Koenigswald's and Peterson's discoveries are widely separated in time and place. Valuable as they are individually, there is no way at the moment in which they can be related to form a systematic context for the prehistory of northern Luzon. Similarly, each stands apart from the results of the Ifugao excavations. The prehistoric intercultural relationships of the latter must, for the time being, be sought in other ways.

The most extensive attempt to organize Philippine prehistory on the basis of archaeological data is Solheim's *The Archaeology of the Central Philippines* (1964a), based mainly upon the analysis of his excavations of the 1950s and the results of Carl Guthe's (1927) survey in the early 1920s of cave burial sites. This material, along with that discovered by Beyer (1926, 1947) at Novaliches, led Solheim to define the Kalanay and Novaliches pottery complexes and to trace a distribution over the central and southern Philippines. In addition, he proposed a third complex, the Bau, partly on the basis of material from sites Guthe investigated in Mindanao, Palawan, and Calamianes, all well to the south. The definition is as follows:

It has little variation in decoration and very little variation in form. It is made with a paddle and anvil. Usually a series of paddles is used, one or more of which have carved patterns on their surface. . . . Often two different patterns are used on a vessel with one pattern on the lower half and the other on the shoulder or in a narrow band around the neck. Later in the development carved stamps were used. Patterns from one or more of these were placed in bands around the neck, often in conjunction with carved paddle patterns on the body. Later yet vertical lines were added to vessels in the form of applied strips of clay or long gouges. In some areas appliqué, particularly of varieties of handles, is found. Lids with vertical handles in the center are common in later sites, but could have started fairly early. Forms are commonly spherical with rounded bottom and a short out-turned or straight rim. (Solheim 1964b: 376-377)

The specimens in the Guthe collection are described as being sand tempered (Solheim 1964a).

On the basis of ethnographic rather than archaeological data, Solheim also locates an area of the Bau complex over much of northern Luzon. Pots with similar tool-impressed and/or paddle-impressed designs are found among the Tinguian on the west and the Ilongot on the east, with additional examples scattered in between. Solheim's combination of archaeology and ethnology gives the Bau complex the awkward but interesting distinction of being at the same time the most southerly and the most northerly of the traditions he has defined.

The name of the complex was taken from the Bau district in southwest Sarawak. Solheim regards the Gua Bongoh site excavated by Harrisson and Tweedie (1951) as being the type site. The ceramics from Gua Bongoh, as well as Balau Dyak pots in the Sarawak Museum, show designs similar to those Solheim considers diagnostic of the Bau complex in the Philippines.

The Ifugao ware, of course, has no surface design elements of any kind, and an effort to associate it with a complex defined principally in terms of such characteristics is obviously awkward. Nevertheless, Solheim does indicate that plain wares are a part of the complex, and Harrisson and Tweedie mention "plain, unpatterned pieces" as being found at Gua Bongoh. On the basis of form, paste, and temper these plain wares appear similar to those of the Ifugao. One can see Ifugao pottery as blending easily into the Bau complex, which, unfortunately, is precisely the difficulty. The plainness of Ifugao ware fails to distinguish it from many traditions which are otherwise quite different. An archaeologist with long experience in the Great Lakes area referred to it jokingly as "sand-tempered Oneota." It also fails to contrast with the pottery I have seen in the Purari River delta in Papua which was obtained by the people there through trade from the Port Moresby area, except that the Papuan ware has both decorated and undecorated components. At a location closer to Ifugao, some of the indigenous wares excavated by Fox (1959) at Calatagan in Batangas, southern Luzon and analyzed by Scheans have resemblances to Ifugao plain ware. The most notable is Kay Tomas Plain, because it is undecorated, has some globular forms, is sand tempered, and has some rim shapes like those found in Ifugao. On the other hand, Scheans believes it to have been made by hand-molding and the rims appear significantly thicker.

It is clear that the most distinctive characteristic of Ifugao pottery, as we know it at this moment, is its lack of obvious distinguishing features. Only further excavations or detailed analysis of the sort attempted in the previous section of this paper will allow us to work out the prehistoric associations of this ceramic tradition.

Something further, however, can be said at the ethnographic level. Scheans (1966) has analyzed information on pottery manufacture from fifteen Christian, pagan, and Muslim groups scattered throughout the Philippines. In all cases his concern is with the sequence of techniques that is involved from the starting of the pot to the sort of finish it receives. Although Scheans correctly emphasizes the tentativeness of his typology, some of the implications he draws are intriguing. For example, the female potters of Ifugao follow what he has called the Ilokano sequence. In searching for its relations to archaeological traditions, Scheans suggests that from Solheim's (1964a) description, the Kalanay complex consisted of:

modeled potteries shaped by turning and by use of the paddle-and-anvil. As such they would seem to be the forerunners of our Ilokano sequence. . . . Further

evidence to support the relationship between the Kalanay tradition and the Ilokano sequence is derived from their distribution in the Philippines. The bulk of the Kalanay materials come from the Visayas, Calamianes, and Palawan; that is, they center in and around the Sibuyan and Visayan Seas. Three of the four groups using the Ilokano sequence are also found in this area on the islands of Panay and Mindoro and on southern Luzon. To date no Kalanay remains are known from the Ilokano regions of Northern Luzon. This absence may be more apparent than real, however, and more intensive archaeological work in Northern Luzon may turn up Kalanay potteries. (Scheans 1966: 215)

The male potters of central Ifugao, according to Scheans, follow what he calls the Bagobo sequence. Although Solheim's reconstruction of Bau manufacturing techniques is not so complete as that of Kalanay, he does point out that the ethnographic distribution of its surface decorations is among populations included in what Fay-Cooper Cole (1945) classified as "Malaysian peoples."

Included in Cole's list were the Ilokano, Tinguian, Ibanag, Kalinga, Bontok, Pompangan, Bikol, Visayan, Bukidnon, Manobo, Bagobo, and Sulu Moro—all of the groups in our survey except the Buhid and Ivatan. The Ivatan aside, this would suggest, as a very good possibility, that the "Malayan" peoples who have made Bau-Malay pottery using three distinctive sequences in the present might also have done it in the past. If the Ilokano sequence is eliminated on the basis of its relationship to the Kalanay tradition, only two sequences, the Bontok and the Bagobo, could be related to the Bau-Malay tradition. Not surprisingly, the distributions of the Bau-Malay tradition and of the two sequences coincide in the Philippines. Until more work is done on determining just how Bau-Malay pottery was made, the matter must rest here. (Scheans 1966: 216)

Solheim and Scheans have each furnished a valuable construction, but it should be apparent that the frameworks to which the Ifugao material must be related are still not so sturdy as we expect that one day they will be. Nevertheless, it is important to note that they are not in conflict. Quite the contrary, each finds some support from the other. Little more can be said now, but the possibility is before us that the Ifugao participated in not one but two of the major Philippine traditions, with the male potters of central Ifugao adhering to Bau concepts and the female potters of the Kiangan and perhaps the Mayoyao areas following Kalanay traditions.

CONCLUSIONS

The excavations reported here represent only an initial, exploratory step, but they are the first open-air habitation sites in the Philippines to be dated by radiocarbon analysis, and they do settle some important questions concerning Ifugao prehistory.

Specifically, the results obtained to date indicate the following:

1. The thesis that the Ifugao moved into their present mountain habitat as a result of Spanish pressure is no longer tenable. The Carbon-14 dates obtained on If-2 and If-3 support an occupation period similar to that proposed by Beyer and Barton. This does not mean that the Spanish presence had no effect upon Ifugao culture history, but its nature remains to be discovered.

2. The hypothesis, based upon considerations of contemporary Ifugao culture and ecosystem, that older sites are located nearer the heart of the agricultural district's drainage system and younger ones on its peripheries has been supported by the limited excavations of this initial phase of the research.

3. The radiocarbon dates obtained apply to the ages of the house terraces excavated at the three sites. All other artifacts recovered must be regarded as being of a later age than the terrace with which they are associated. It is believed that the limited quantity of material obtained from If-3 is relatively young compared to the age of the terrace at that site.

4. The only agricultural terrace to which the dates relate is the one underlying If-1. This was clearly a paddy field, but the relevant radiocarbon date refers to a time shortly after the field was closed and not to its construction. One may perhaps assume some degree of association between the technological skills for house terrace and field terrace construction, but the antiquity of terrace agriculture in Ifugao remains to be more directly explored.

5. Similarly, the question of the age of iron tools in Ifugao culture is not answered by the excavations to date. A single iron tool was found at each of two sites. In both instances, however, the artifact came from the upper level and must be judged substantially younger than the terrace. Lambrecht's belief that there is a necessary association between iron tools and terrace construction can be tested only by further archaeological research.

6. The distinction between contemporary Ifugao ceramic products on the basis of fundamental differences in techniques of manufacture rather than design seems also to have been present prehistorically. The data available suggest that the tradition of the female potters of Kiangan may have been related to the Kalanay complex and that of the male potters of central Ifugao to the Bau. The pottery found at If-2 differs from that at If-1 and If-3 in ways which indicate differences in manufacture. It may have been that during a period extending from eight hundred to two hundred years ago the Kiangan tradition was more widely spread and such pottery was being manufactured at If-2 in central Ifugao during that time. Further knowledge of Ifugao prehistory will depend upon a more extensive program of excavation which can provide a substantially fuller documentation of the geographical and temporal variations of Ifugao culture for all of the years before its ethnographic present.*

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Plate I Pile dwelling in Seran, West Sumbawa (same type as found in East Sumbawa).

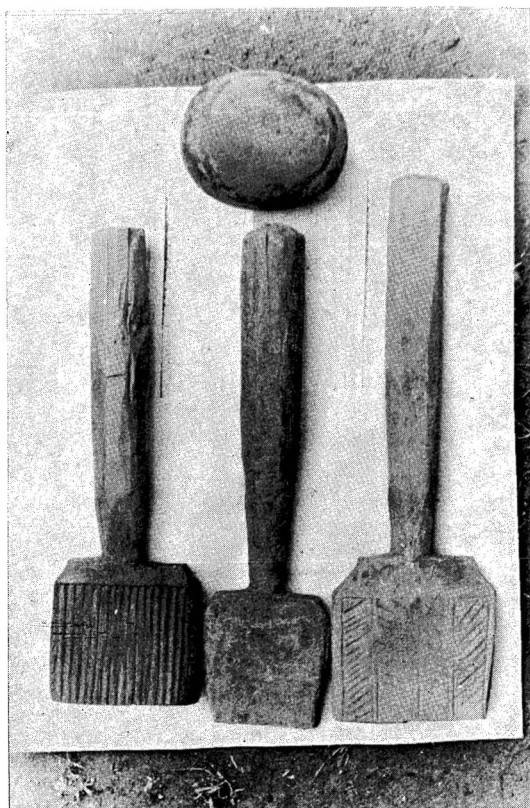


Plate II Carved and plain wooden paddles from Raba-ngodu.