

42. RECENT CAVE EXPLORATIONS IN THE LOWER HUMBOLDT VALLEY, NEVADA*

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The well-known site of Lovelock Cave¹ lies just above the southern shore of Humboldt Lake or Humboldt Sink, the terminus of the Humboldt River, about 80 miles northeast of Reno, Nevada. The cave is large, closed, and was filled with a very rich deposit of camp refuse, caches of valued items, and some burials. The initial exploration was carried out by L. L. Loud of the University of California in 1912, and in 1924 he returned with M. R. Harrington, then attached to the Heye Foundation, and completed the excavation of the cave. Loud, for various reasons, did not conduct stratigraphic excavations, but Harrington made an effort to do this and in one end of the cave found a deep rubbish accumulation in which he carefully dug a stratipit in order to discover some clue to the cave's history which by this time had been largely destroyed by commercial guano mining and pothunting. Harrington concluded that the cave showed three stratigraphic-cultural periods which he named Early, Transitional and Late. The report of the cave, published about 25 years ago, has been much used since it has represented the only detailed major account of prehistoric cave and open-site archaeology in the central and northern part of Nevada.

In 1936 R. F. Heizer and A. D. Krieger excavated the only other known sizeable and undisturbed cave in the Humboldt Sink region. This site, named Humboldt Cave, was much smaller, but at the same time relatively more rich in artifacts than Lovelock Cave situated some 10 miles to the north on the same range of hills. Humboldt Cave measured 49 feet long, 8 feet wide, and the trash deposit averaged about 4 feet in depth. About 1400 cubic feet of deposit was excavated, and from this was recovered a total of 5200 specimens. Scattered throughout the deposit were 31 cache pits, most of them emptied in antiquity by their owners, but several still intact. Humboldt Cave appears to have been occupied during the Transitional and Late Lovelock Cave periods.

In 1950 the University of California summer field class in archaeological methods conducted excavations in Leonard Rockshelter, about 6 miles east of Lovelock Cave, carried out site surveys, made large collections of materials from surface sites and excavated several minor shelter and cave sites. The Leonard Rockshelter deposit showed a continuous stratigraphic sequence of bat guano and windblown dust layers spanning the last 11,000 years, and yielded artifact remains of three culture complexes. The open sites vary both as to cultural materials present and time, and it has been possible to fit most of these into the local cultural sequence.

As regards dating of materials and culture levels in the Humboldt Lake region we are in excellent shape through possession of about a dozen radio-

*Read by title.

¹For the location of this and other Humboldt Valley sites mentioned in this report, see map following page 58 (Paper No. 43). Lovelock Cave is designated 26-Ch-18; Humboldt Cave is 26-Ch-35 and Leonard Rockshelter 26-Pe-14.

Pleistocene and Postglacial Stages		Cultures	Radiocarbon Dates	Leonard Rockshelter	Lovelock Cave	Humboldt Cave
	1950 AD	Recent N. Paiute		Postoccupation dust, rockfall	Postoccupation bat guano	Historic Paiute
POSTGLACIAL	Medithermal	LOVELOCK CULTURE	268 AD	LOVELOCK CULTURE OCCUPATION DEBRIS		
			2 BC			
			532 BC			
			1218 BC			
	2000 BC					
	Altithermal	LEONARD CULTURE	2500 BC	Aeolian dust deposited in Long Drought of Middle Postglacial with Leonard Culture artifacts	Bat guano No occupation by man	No occupation by man
			3786 BC			
			4054 BC			
	Anathermal	GRANITE POINT and HUMBOLDT CULTURES	5088 BC	Bat guano with Humboldt Culture artifacts		
			6710 BC			
7000 BC						
Late Pleistocene		9249 BC	Lake Lahontan gravels and sand	Lake Lahontan silts	Lake Lahontan gravels and silts	
		8000 BC				
GLACIAL						

* After Antevs, 1948.

Fig. 1

carbon dates for three sites. The oldest date is from Leonard Rockshelter, 11,199 \pm 570 years (9249 B.C.), and refers to the bat guano lying immediately upon the lake gravels left with the final recession of Pleistocene Lake Lahontan. From this lowest layer came two obsidian flakes, one unmodified and the other with a retouched edge, which cannot be less than 10,000 years old. The lower bat guano deposit also yielded wooden and fiber artifacts such as atlatl darts (one complete with two tangential feathers), Olivella shell beads and fragments of netting. Three of the darts were dated at 7038 \pm 350 years (5088 B.C.) and bat guano from about the same level ran 8660 \pm 300 years (6710 B.C.). The lowermost cultural material has been designated as the Humboldt Culture. Resting upon the deep guano layer which is equivalent in time to what Antevs calls the Anathermal Age was a layer of fine windblown sediments probably the deflation product from the bed of Humboldt Lake which was dry during the Altithermal Age or the Long Drought of the Middle Postglacial. That man was present in this dry period is shown by an infant burial accompanied by a carbonized twined basket which yielded a radiocarbon date of 5694 \pm 325 years (3786 B.C.). This material, scanty though it be quantitatively, is distinctly of Altithermal age, and is assigned the name of Leonard Culture. The topmost levels of Leonard Rockshelter produced artifacts of the same types as from Lovelock and Humboldt Caves.

Lovelock Cave's oldest radiocarbon date is 3172 \pm 260 years (1218 B.C.). This date was secured by L. S. Crossman's efforts using material from near the bottom of Harrington's 1924 stratigraphic trench. This date is some 686 years earlier than the date which I assumed in 1951 marked the initial occupation of Lovelock Cave, though at the same time recognizing that there should be older materials in the cave dating from nearer the beginning of the Medithermal age which began about 2000 B.C. (Heizer, 1951, p. 97). Another sample from the 18 to 48 inch level of Harrington's stratigraphic pit gave a radiocarbon date of 1686 \pm 220 years (268 A.D.). There are two dates for the thin layer of pre-occupation bat guano in Lovelock Cave--4448 \pm 250 years (2500 B.C.) and 6004 \pm 250 years (4054 B.C.). Occupation or intermittent use of Lovelock Cave was probably continuous from about 1500 B.C. until its abandonment some centuries before the appearance of Caucasians toward the middle of the nineteenth century. A sterile bat guano layer several feet thick capped the occupation deposits of Lovelock Cave and furnishes clear evidence of its abandonment some time before 1900 (Loud and Harrington, 1929, pp. 1-3,34). The type of materials from Lovelock Cave deposits have been named the Lovelock Culture, and Harrington's subdivisions of Early, Transitional and Late can be used as, for example, Early Lovelock, Transitional Lovelock or Late Lovelock.

Humboldt Cave was first occupied at a later time than Lovelock Cave as evidenced by a radiocarbon date for the earliest cache from Humboldt Cave which has a radiocarbon date of 1953 \pm 175 years (2 B.C.). A sharp typologic-stratigraphic subdivision of materials into culture phases is not evidenced in Humboldt Cave, and judging from the Lovelock Cave sequence, Humboldt Cave was used during the Transitional and Late Lovelock culture phases, though it is possible that only the Late Lovelock phase is represented at Humboldt. The problem of correlation here is caused by certain types which are Early and Transitional in Lovelock Cave (such as L-shaped scapula awls and horn sickles) but which occur in the uppermost levels of Humboldt Cave.

A distributional analysis of the culture forms present in Humboldt Cave has been made, and culture connections prove to be mainly with California

to the west, or the Anasazi area to the southeast. Thus, duck decoys of tule and covered with duckskin, large two-piece fishhooks made by lashing a barbed bone to a greasewood shank, crude shallow wooden trays, boads made of the nut of the digger pine, style of geometric incising on bone; feather-decorated fine-coiled basketry and beads of marine mollusk shell all appear to have been derived from the trans-Sierran California region through the intermediary of either the Washo and Maidu or their predecessors in those regions. Some of these features are clearly derived by trade since they are of Californian manufacture; others may be part of an ancient community of traits shared by Californian and Great Basin peoples.

With the Anasazi Southwest the following Humboldt Cave traits are specifically shared: tubular stone pipe with birdbone stem, curved grass-cutting sickle of mountain sheep horn, hollow cane fire-drill, flat wooden slab trowel, cylindrical openwork twined rush bag, flexible tule cradle, bark apron and round grass-bundle hairbrush. With Southern Oregon Humboldt Cave shares the distinctive Catlow twined basketry, which is found only in the uppermost levels of the Nevada site, and tule sandals. A small obtuse-angled two-piece fishhook type and the distinctive Lovelock Wicker basketry are believed to represent provincial inventions which diffused only locally. Lovelock Wicker is reported from the Carson Sink and Pyramid-Winnemucca Lakes region, and furnishes by its presence a useful indication of time synchronism.

Humboldt Cave types which may be taken as forming part of the generic substratum of far western cultures include: deer hoof rattle, medicine pouch, twined tule matting, scapula grass-cutting tool, perforated horn or antler arrow wrench, birdbone whistle, cane arrow with hardwood foreshaft, and three radial feathers, wooden-handled flint knife, L-shaped scapula awl, straight scapula awl, digging stick, solid shaft fire drill, wooden fire hearth, use of caves for shelter, caching of valuables, food and corpses, coiled and twined basketries.

It will thus be seen that the cave cultures of the Humboldt Valley region have been fairly well outlined, both as regards content and dating. The surface archaeology, first detailed by Loud in 1924, has been paid additional attention in 1936 and 1950, and the report on the surface-site manifestations of the Lovelock Culture (especially site Ch-15), as well as on the materials from a series of earlier sites going back to the Anathermal Age and contemporaneous with the Humboldt culture of Leonard Rockshelter in the Humboldt Valley, is now completed and ready for the press.

There remain numerous problems which future work may solve. Among these is the important question of whether the ancestors of the Northern Paiute lived in Lovelock and Humboldt Caves. The probability is that the Lovelock Culture is equivalent to Northern Paiute, but certain late archaeological forms such as wicker basketry, large round flat coiled parching trays, sheep horn sickles and L-shaped scapula awls do not form a part of the cultural inventory of the Northern Paiute, and conversely, the shallow subvoid twined winnowing tray and small-mouth twined, pitch-covered water bottles, and sage-brush sandals known to the historic Northern Paiute do not occur in the local cave deposits. On the other hand, the feather-covered tule duck decoys, tubular smoking pipes, openwork twined carrying baskets, and small obtuse-angled fishhooks occur both in late archaeological levels and are part of the material inventory of the Northern Paiute, and these concurrences may be interpreted as indicating the prehistoric presence locally of the Northern Paiute.

Until archaeological investigation in some late sites is carried out the problem of the recency or antiquity of occupation by the Northern Paiute cannot be satisfactorily solved, and until this is done the archaeological culture sequence remains open-ended and not terminated, as it properly should be, with an ethnographic culture and ethnic group.

The long discussed problem of whether Lovelock Cave is to be viewed as Basket Maker I could be tackled with hope of a clear solution now that the temporal factor is better under control. Certainly Early Lovelock seems Basket Maker-like, but detailed cultural comparison is necessary to enable authoritative opinion on whether the shared features are identities, and to what extent the total complexes are the same. As now known Early Lovelock is older than Basket Maker, and may prove to be the parent of the Basket Maker culture. This idea is, if I understand him correctly, earlier proposed by Jennings in his preliminary report on Danger Cave (p. 204).

I am sympathetic to Jennings' proposition (Jennings, 1953; see also the excellent summary by Jennings and Norbeck (1955)) that "there is yet no evidence requiring the establishment of Basin culture areas," because as more and more unprogrammed excavations are made we may be faced with a confusing welter of named cultures, the individual separateness of each being a matter of doubt. At the same time, however, to follow Jennings' alternative proposal "to lump all the Basin remains [such as Promontory, Black Rock, Lovelock, Leonard, Granite Point and Oregon sites] calling it the Desert culture" does not strike me as more scientific, since I think there are excellent reasons for believing that we are here dealing with a series of what archaeologists are accustomed to calling cultures. On the ethnographic level there is a considerable variety in culture patterns within the Great Basin, as the works of Omor Stewart, Julian Steward, Robert Lowie, Ann Gayton and Willard Park, to name a few, prove. Such variety is likely, as we know from other instances, to be reflected in prehistoric deposits. The archaeological work in western Utah by Smith, Steward and Jennings, that in Oregon by Cressman and Krieger, and in the Carson and Humboldt Sink regions of Nevada by Loud, Harrington, Wheeler, Gresscup and myself already furnishes us with three rather different culture type series. In each instance a span of 10 or 11,000 years is represented, and it is difficult for me to believe that in either of these three areas the culture continued unchanged for this period of time. The basic unity of what Jennings calls the Desert culture, a name I prefer to the term Bonneville which refers to only one segment of the Lahontan-Bonneville lake system, is something which derives from the particular limitations imposed by the elevated semidesert environment of the Great Basin. As Steward said 15 years ago, "To interpret the [Great Basin] area's cultural history and cultural adaptations it is necessary to examine this environment in terms of problems and patterns of human ecology." (Steward, 1940, p. 445) Differing local patterns must have obtained regionally in the Basin since the earliest times, and these I believe will be reflected in the archaeological patterns if we inspect the data, deficient though they admittedly be, in the proper manner. I know of no certain method of avoiding the error of naming a culture which subsequently proves to be a variant of another complex named earlier. For the lower Humboldt Valley region I am reasonably confident that the culture series --Leonard, Humboldt and Lovelock--are realities of time and content. Deficiencies in information and obscurities of various sorts still plague us in attempting to fashion a satisfactorily complete idea of cultural succession in the lower Humboldt Valley region, and plans are now made for

one more season's work here to fill the lacunae in the data. Publication of the report on Humboldt Cave (Heizer and Krieger n.d.) will occur early in 1956, and a volume of brief reports on surface and cave sites studied in 1950 is nearly completed. We are still in the data-gathering phase, and wider interpretations will be put off until field and laboratory studies are further along.

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ADDENDUM

W. F. Libby published in Science (Vol. 120, pp. 733-742, 1954) the most recently run radiocarbon dates for Lovelock Cave. These dates are based on samples, now in the Heye Foundation, recovered by M. R. Harrington in 1924 from the stratigraphic pit at the west end of the cave. L. S. Cressman was instrumental in securing these samples for dating, and has discussed these dates in American Antiquity, Vol. 21, pp. 311-312, 1956.

For the record, there is presented here a plan of Lovelock Cave taken from Loud and Harrington's report of 1929* showing the location of the samples secured by me (Nos. C-276, C-277, C-278) and the samples dated through Cressman's efforts (Nos. C-728, C-729, C-730, C-735).

Samples C-276, C-277, C-278 were collected from beneath a large rock lying, apparently undisturbed, against the south wall of the cave. A confusion of samples sent by me to Libby has led to certain difficulties and errors in interpretation. This confusion is complicated and it is unnecessary to review the details but it is believed the following remarks will be useful. With reference to samples C-276, C-277, C-278 alone, it can now be said:

1. Sample C-276 should have been listed in Libby's published list as (LC3) and not (LCB). This sample, consisting of unburned vegetal occupation refuse, came from the inner part of the cave (not from near the entrance) against the rear (i.e. south) wall, and lay directly upon an 8 inch thick layer of bat guano which had caught fire and burned up to within about 18 inches of the wall.
2. Samples C-277 and C-278 are from the pre-occupation guano stratum. C-277 is from the burned part of this stratum; C-278 is from the unburned part near the wall. My statement in Radiocarbon Dating (Memoir No. 8, Soc. for Amer. Arch., 1951, p. 24) attributing the age differences of the two samples "as random sampling range in materials which were accumulated over a long period of time", was intended to point out the probability that the 8 inch thick bat guano layer might cover several thousand years of deposition by bats in Lovelock Cave. In theory burned and unburned guano from a single stratum should have similar ages. Unless we question the accuracy of the radiocarbon of either sample C-277 or C-278 my explanation seems to be the only adequate one. The burning of the thin guano layer which lies on top of the silt deposits left by former Lake Lahontan was probably due to the agency of man, and this burning may have occurred when the first fires were built by man on the pre-occupation guano layer.
3. As Cressman (op. cit. 1956) correctly points out, still older dates may be anticipated when the samples from the lowest levels of the 1924 stratigraphic pit are subjected to radiocarbon analysis. My own earlier statements of the earliest occupation of Lovelock Cave as occurring about 500 B.C. were in error, and are now corrected by the dates for the lower levels of the stratigraphic pit.

* See Bibliography preceding.

The following profile will illustrate the placement of samples C-276, C-277, C-278

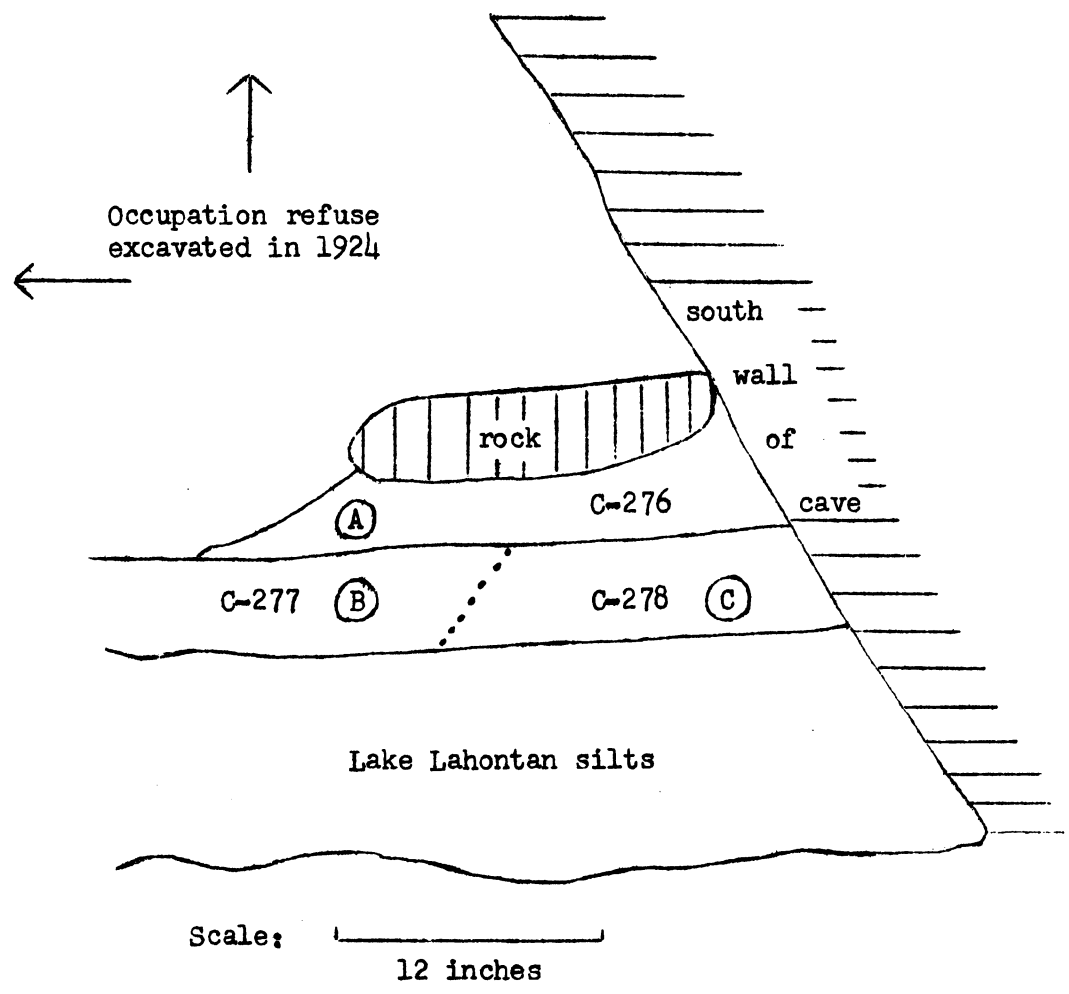


Fig. 1. Location of Samples C-276, C-277; C-278.
A , remnant of occupation refuse deposit lying under rock; B , burned bat guano; C , unburned bat guano.

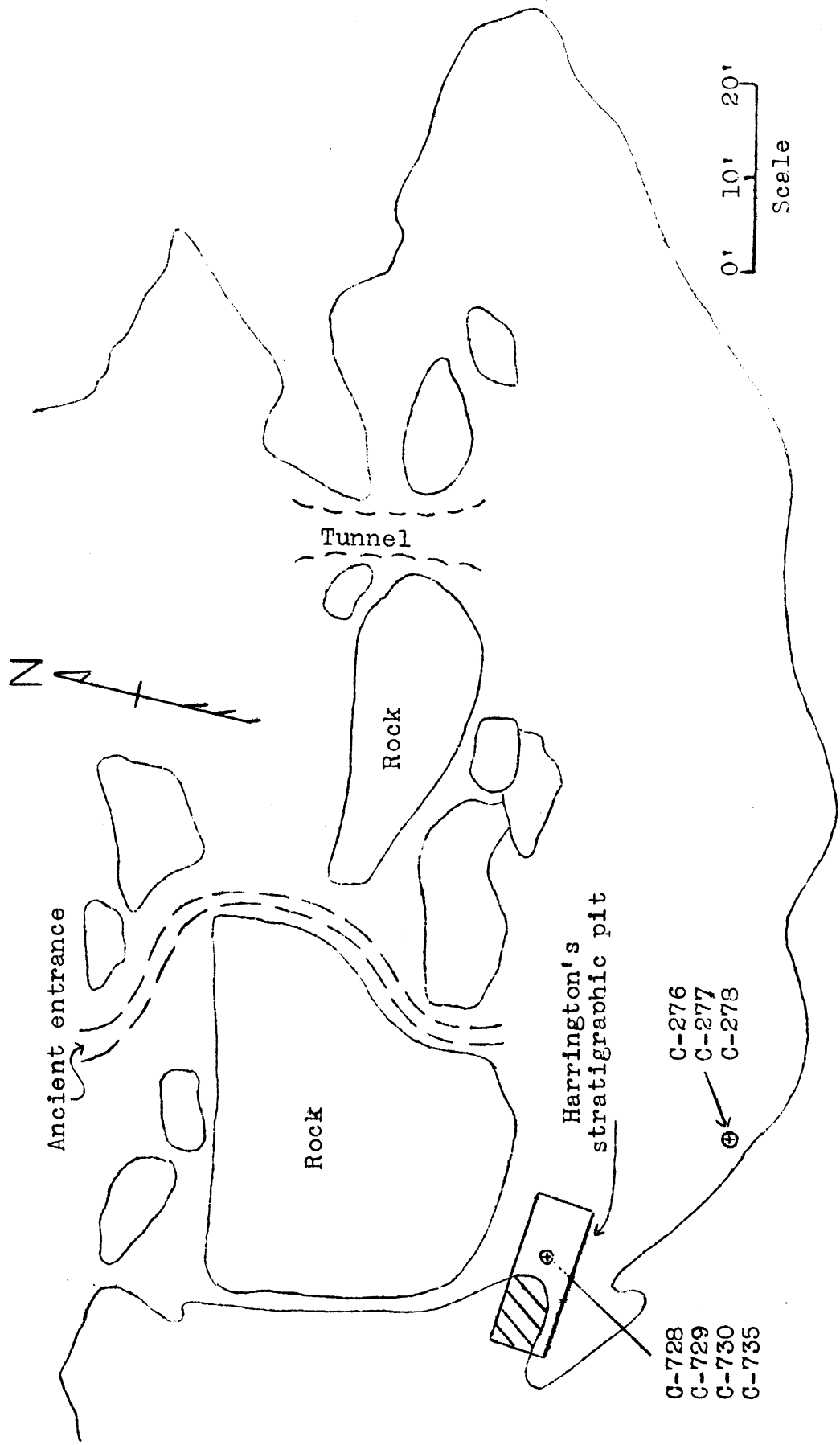


Fig. 2. Plan of Lovelock Cave (from Loud and Harrington, 1929, Plate 2) Showing Location of Samples for Which Radiocarbon Dates Have Been Secured.