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UCLA RADIOCARBON DATES I*

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The measurements reported in this list have been made since the Radiocarbon Dating Laboratory at the Institute of Geophysics, UCLA became operational in August 1961. CO_2 proportional counting was used for all measurements in an 7·5-L counter at 1 atm pressure. Dates have been calculated on the basis of the C^{14} half life of 5568 ± 30 yr, and 95% of NBS oxalic acid as modern standard. It is planned to discuss the half life in the light of the newer measurements at a conference in 1962. Prior to general agreement as to the new best figure we propose that all dates continue to be calculated on the old basis. Samples have been carefully inspected, cleaned, picked free of rootlets, and pretreated with HCl when necessary.

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UCLA-101. Loon Lake, Oregon **1460 ± 80**

Wood from outer layer of one of the standing drowned trees in Loon Lake (43° 35′ N Lat, 123° 50′ W Long). Lake is largest of several landslide lakes in Coast Range of Oregon, formed by a mass of Tyee sandstone that slid on a dip slope of 15° into Lake Creek (Baldwin, 1959). Lake has been reduced by alluvium fill to 2½ mi in length from an original length of nine mi. Subm. by Harriet Ward, Reedsport, Oregon.

Canalino Culture series, Santa Rosa Island, California

The prehistoric Canalino Culture was the last Indian culture on Santa Rosa Island, 35 mi off Santa Barbara, California. The following samples are from a site at Skull Gulch on the northwestern coast of the island (34° 00′ 15″ N Lat, 120° 11′ 40″ W Long). The site is large, occupying both sides of the gulch and comprising 73 house sites and three known cemeteries. Some of the sites have been exposed by the erosion of the gulch, and the others discovered by trenching (Orr, 1956; 1960).

UCLA-102. Canalino Burial, Cemetery B **600 ± 70**

Black seeds of red maid (*Calandrina ciliata*) found with flexed-face-down burial of Canalino woman, skull disarticulated. Seeds had filled all spaces between the bones. They had evidently been poured on top of the corpse, shifting as it decayed. Cemetery B on W side of Skull Gulch. Coll. 1953 and subm. by P. C. Orr, Santa Barbara Mus. of Nat. History, Santa Barbara, California.

UCLA-103. "Whale House" **1230 ± 60**

Unidentified wood from postholes of Canalino House no. 3, "Whale

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House," alt 50 ft. House, diam ca. 18 ft, was supported by wooden uprights and whalebone horizontal members, the roof being thatched with sea grass. Coll. 1949 and subm. by P. C. Orr.

UCLA-104. "Turtle House" 400 ± 80

Unidentified wood from excavation of House no. 1, "Turtle House." House, diam ca. 18 ft, was supported by wooden uprights and thatched with sea grass but lacking whalebone, is believed to belong to a later period than House no. 3 (UCLA-103). Coll. 1949 and subm. by P. C. Orr.

UCLA-134. Hearth near Cemetery A 330 ± 50

Charcoal from hearth at 22 in. depth, 20 ft S of Cemetery A, on E bank of Skull Gulch; which is ca. 600 ft S of Cemetery B (UCLA-102). Coll. 1961 and subm. by P. C. Orr. *Comment*: Cemetery A and Cemetery B appeared from their contents to be of approximately same age, but Cemetery A is not necessarily dated by the hearth that lay near it.

UCLA-141. Survey Point, Santa Rosa Island 12,620 ± 200

Charcoal at bottom of black humus layer containing shell, asphalt, and a hearth, Survey Point, Santa Rosa Island (34° 00′ 25″ N Lat, 120° 10′ 55″ W Long, alt ca. 75 ft). Layer is overlain by water-laid buff clay 4 ft thick, then by black humus, 1 ft thick, then by sand and shell, ca. 10 ft thick. It overlies charcoal dates >25,000 yr (M-1132, Michigan VII) and a dwarf mammoth dated 29,750 ± 2500 (L-290 R, Lamont IV). Coll. 1961 by P. C. Orr and B. White; subm. by P. C. Orr. *Comment*: this charcoal is probably evidence of man. There are numerous asphalt deposits on Santa Rosa Island and thus charcoal, if it is of human origin, may give too old a date because of asphalt burned with the wood and therefore not removed even when samples are treated with an organic solvent. Site is near the Arlington Spring bone, dated by associated charcoal at 10,000 ± 200 (L-650, Lamont VII).

UCLA-105. Highland Culture, Santa Rosa Island 4790 ± 90

Mixed shell, primarily *Mytilus californianus* and *Haliotis cracherodii* from 9 to 12 in. depth, Pit M, associated with fish hooks, in Highland Culture site, NW coast of Santa Rosa Island (34° 00′ 00″ N Lat, 120° 10′ 30″ W Long, alt 300 ft). Coll. 1958 by P. C. Orr and W. A. Davis; subm. by P. C. Orr. *Comment*: Highland Culture sites are common, at least 96 now being known. A sample from 18 to 24 in. depth in the same site gave 5370 ± 150 yr (L-446-B, Lamont VII).

UCLA-106. Arlington Canyon, Santa Rosa Island 11,800 ± 800

Charcoal in direct contact with bones of dwarf mammoth, 22 ft below valley terrace and 4 ft above modern stream bed, Arlington Canyon, Santa Rosa Island, Quarry no. 14, in Tecolote member of Santa Rosa Island formation (34° 59′ 00″ N Lat, 120° 10′ 00″ W Long). Coll. 1959 by P. C. Orr and W. A. Davis; subm. by P. C. Orr. *Comment*: regarded as a "kill" site as skeleton showed evidence of butchering—removal of brains and part of the carcass.

The charcoal was evidently transported by stream from a hearth a few yd up the canyon.

UCLA-107. Frenchman Flat, Nevada **10,100 ± 160**

Plant remains from abandoned nests of packrat in the cresote-bush zone, alt 3500 ft, Ranger Mountain (36° 47′ N Lat, 115° 53′ W Long), in foothills on S side of Frenchman Flat, Nevada. Nests, in shallow caves in limestone, have yielded well preserved remains, including leaves, seeds, and wood of juniper (*Juniperus osteosperma*). Subm. by P. V. Wells, New Mexico Highlands Univ., Las Vegas, Nevada. *Comment*: the area is at present devoid of junipers and situated over 20 mi from nearest range high enough to support them. Presence of juniper at alt 3500 ft implies rainfall of 10 to 15 in. per yr, compared to less than 5 in. at present. Sample is contemporaneous with period of greater growth of trees, shown in Gypsum Cave near Las Vegas by sample C-122 (10,450 ± 340, Libby, 1955).

UCLA-109. Ptolemy, Egypt **2360 ± 75**

Wood from mummiform coffin from Egyptian Ptolemaic period. Known age 2280 according to John Wilson, Oriental Inst., Univ. of Chicago, Chicago, Illinois. Sample was the original solid carbon from Chicago run (C-62, 2190 ± 450, Libby, 1955). Subm. by John Wilson and W. Boyes. *Comment*: good check.

UCLA-110. Lewisville, Texas **>38,000**

Charcoal from Hearth no. 8 in Lewisville site, 20 mi N of Dallas (33° 04′ 00″ N Lat, 96° 59′ 30″ W Long). Associated with various evidence of human occupation. Details of site have been given by Crook and Harris, 1957; 1958. Subm. 1961 by M. Williams, Humble Oil Co. *Comment*: good check with Humble date (0-235, 0-248 >37,000, Humble I).

UCLA-111. Becerra Formation, Mexico City, Mexico **18,700 ± 450**

Wood from stump of Cupressus, Ciudad de los Deportes, southwestern part of Mexico City (20° N Lat, 99° W Long), 2240 m above sealevel. From 20 m below surface in Younger Becerra formation, a swamp deposit, associated with bones of horse, mammoth and elephant. Subm. 1961 by A. R. V. Arellano, Univ. Nac. de Mexico, Mexique; from same stump collected 1944 and submitted as C-204 (Libby, 1955). *Comment*: consistent with Chicago result (C-204, >16,000, Libby, 1955).

UCLA-112. Cougar Mountain Cave, Oregon **8510 ± 250**

Sandal fragment of uncharred twined tule from near top of earliest occupation level at Cougar Mountain cave, south central Oregon (43° 30′ N Lat, 121° 1′ W Long), ca. 11½ mi NE of Fort Rock Cave. Fragment was not treated with preservative. Coll. 1958 by J. Cowles; subm. by E. H. Swanson, Jr., Idaho State College Mus., Pocatello, Idaho. *Comment*: age similar to that of the Fort Rock Cave sandal (C-428, 9053 ± 350, Libby, 1955).

UCLA-115. Clipperton Island **370 ± 100**

Clam shell (*Spondylus* cf. *pacificus*) underwater depth 18.3 m, in the enclosed lagoon of Clipperton Island (10° 18′ N Lat, 109° 13′ W Long), the lone atoll of the eastern Pacific. Coral heads and shells of marine molluscs abound in the nearly fresh water of the lagoon. Coll. 1958 by the late C. Limbaugh on expedition from Scripps Inst. of Oceanography, La Jolla, California; subm. 1961 by C. L. Hubbs of that institution. *Comment*: this body of water was formerly a typical atoll lagoon; the date, and the fresh appearance of the shells (sampled valves were attached), suggest that closure of the lagoon and its formation into a lake occurred ca. 370 yr ago. Pertinent references include Taylor, 1948; Sachet, 1960, 1962a, 1962b.

UCLA-116. Silva Redrill Well no. 1, Baja, California **24,900 ± 800**

Wood fragments, 49.7 m below surface in Silva Redrill Well no. 1, Colonia Silva, Valle de Mexicali, on the Colorado River delta, Baja California Norte, surface alt ca. 18 m; 35 km S and 3 km W of Boundary monument 212 (32° 23.0′ N Lat, 115° 02.0′ W Long). Coll. 1958 by W. T. Blackledge, Indus. Jabonera del Pacifico, Mexicali; subm. by C. L. Hubbs. *Comment*: rapid aggradation of the Colorado River delta is generally assumed to have been concurrent with the subsidence of the LeConte Basin (Hubbs and Miller, 1948, p. 103-112). Sampled wood, if laid down above sealevel at the time, suggests either eustatic change in sealevel or subsidence of the delta. There is some indication that sealevel ca. 25,000 yr ago was close to the present level (Curray, 1961), and if this relation is established the case for subsidence, of ca. 30 m, will be strengthened.

UCLA-117. San Felipe Valley fill, California **4980 ± 100**

Charcoal from hearth in an occupation level buried 10.5 m in alluvium, the residue of a valley fill, in valley of San Felipe Creek, 300 m below junction with Grapevine Canyon (33° 07′ 58″ N Lat, 116° 29′ 43″ W Long, surface alt ca. 512 m). Creek is in the Lake LeConte (Salton Sea) drainage basin of eastern San Diego Co. Site, reported by D. E. Merkel, Naturalist of the Anza-Borrego State Park, was sampled by C. L. Hubbs and party; subm. by C. L. Hubbs (sample 1961-XI:5A). *Comment*: sample, according to collector, demonstrates occupation by man prior to alluviation of the whole valley to a depth of more than 10 m, which was followed in turn by erosion of ca. nine-tenths of the valley fill. The date is the oldest for human occupation in the LeConte Basin, and provides adequate time for the geomorphic events. Artifacts found in situ include a quartzite point. Charcoal, also inferred to be from hearths, was found in the overlying alluvium by students of W. J. Wallace, Univ. of Southern California. Occurrence of permanent water in San Felipe Creek in Sentenac Canyon, just above the site, offers an explanation for this prolonged habitation.

UCLA-118. Mono Lake, California **920 ± 90**

Wood id. by J. E. Lodewick as either ponderosa or Jeffrey pine from one of seven erect stumps found rooted 18 m outside present shore of this saline

Lake just E of Leevining, Mono County (37° 58.7′ N Lat, 119° 06.4′ W Long). Stump rooted 1.5 m below present lake level. Coll. 1960 (sample F-60-1) by D. B. Lawrence, Dept. of Botany, Univ. of Minnesota; subm. by C. L. Hubbs. *Comment*: result indicates that 920 yr ago lake was at least 1.5 m lower than now even if the water was then fresh, still lower if then salty. See Hubbs and Miller, 1948, p. 78-79, for discussion of history of Mono Lake.

UCLA-119. San Gabriel Skull, California **980 ± 80**

Clam shells (*Chione undatella*) from ca. 4.75 m below sealevel, in shell layer, interpreted as estuarine, containing a human skull at –4.95 m; site LAn-272, Univ. of California Archaeological Survey, between S bank of San Gabriel River and northern boundary of Orange County, on W side of Highway 101 alternate (33° 45′ 06″ N Lat, 118° 06′ 24″ W Long). Considerable warping and tilting of strata after deposition of skull has been caused by crustal movement so that age cannot be estimated from rates of deposition or changes in sealevel. Coll. 1961 by K. A. Dixon and B. L. Conrey, Long Beach State College, California; subm. by C. L. Hubbs. *Comment*: test also bears on rate of subsidence and aggradation of Los Angeles Basin (see also UCLA-120).

UCLA-120. Terminal Island, California **9650 ± 150**

Wood from well (WP-8) drilled by the John Beylik Co. on Union Pacific Railroad Co. lease, Terminal Island, Long Beach, depth 44.2 to 46.05 m below mean sealevel in a coarse blue-gray sand and gravel layer (33° 45′ 46″ N Lat, 118° 13′ 44″ W Long). Abundant wood was also encountered at depths of 18.0 to 19.2 and 39.8 m below mean sealevel. Present ground surface is ca. 3 m below mean sealevel having subsided 8.2 m due to withdrawal of water and oil. Coll. 1959 by W. L. Burnham, Los Angeles County Flood Control Dist.; subm. by R. G. Thomas, California Dept. of Water Resources, through F. P. Shepard and C. L. Hubbs. *Comment*: test bears on the assumed subsidence and rapid aggradation of this area, as well as on changes of sealevel.

UCLA-121. Lake Manix Shoreline, California **19,300 ± 400**

Encrusting tufa from boulders 0 to 3 m below the high-stand shoreline, 542.5 m, of Pluvial Lake Manix, just N of Afton Canyon, Mohave River, T 11 N, R 6 E, San Bernardino County, California (35° 02′ 21″ N Lat, 116° 21′ 06″ W Long). Ancient shoreline faces NE toward the ancient lake and is at same alt as the Afton beachbar that formed farther out in the lake. Coll. 1959 and subm. by Ruth Simpson, Southwest Mus., Los Angeles, California, through C. L. Hubbs. *Comment*: according to the collector, crude Manix Lake lithic industry, occurs just above the 542.5 m shoreline of this lake and is believed to be as old as the high stand of the lake. The several stages of Lake Manix were impoundments of Pluvial Mohave River (evidence reviewed by Hubbs and Miller, 1948, p. 87; archaeological data reviewed by Simpson, 1958; 1960). Another tufa sample, more massive and enclosing shells of the freshwater mussel Anodonta, from the Afton beachbar, has been dated 19,500 ± 400 (LJ-269, La Jolla II). The agreement between the measurements indicates that the two tufa deposits represent the same stage of Lake Manix—presumably the last high stage, prior to the down-cutting of the outlet in Afton Canyon.

UCLA-122. Kramer Cave, Nevada **3720 ± 100**

Atlatl foreshaft, Grotto 2, Level 2, Kramer Cave, Lake Winnemucca, Washoe County, Nevada (40° 17′ N Lat, 119° 21′ W Long). Foreshaft 23½ in. long, 7/16 in. diam. Proximal end pointed and smoothed to insert into dart shaft, with gut tied around foreshaft 4 9/16 in. from proximal end to keep point from entering dart shaft too far. Distal end has encircling groove which probably held binding for dart point. Coll. and subm. by R. Shutler, Jr., Nevada State Mus. *Comment*: date on foreshaft dates the atlatl, several other foreshafts, and a triangular contracting-stem obsidian dart point, all part of the same cache. The date places the atlatl and the associated artifacts in the Early Lovelock Culture Phase, and is the first directly dated atlatl from the Lovelock Culture.

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