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UNIVERSITY OF WISCONSIN RADIOCARBON DATES XVI

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Procedures and equipment have been described in previous date lists. Except as otherwise indicated, wood, charcoal and peat samples are pretreated with dilute NaOH and dilute H_3PO_4 before conversion to the counting gas methane; marls and lake cores are treated with acid only. Very calcareous materials are treated with HCl instead of H_3PO_4.

The dates reported have been calculated using 5568 as the half-life of ^{14}C with 1950 as the reference year. The standard deviation quoted includes only the 1σ of the counting statistics of background, sample, and standard counts. Background methane is prepared from anthracite, standard methane from NBS oxalic acid. The activities of the dated samples for which $\delta^{13}C$ values are listed have been corrected to correspond to a $\delta^{13}C$ value of $-25‰$.

Sample descriptions are based on information supplied by those who submitted samples.

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I. ARCHAEOLOGIC SAMPLES

A. Illinois

WIS-918. W J Phillips site **980 ± 60**

$\delta^{13}C = -25.4‰$

Charred nut fragments (*Carya* cf *ovata*) and charred wood (*Carya, Quercus* sp, *Ulmus* sp and unidentifiable shrub) coll 1976 by William Green and L F Steinberg, Univ of Wisconsin-Madison at W J Phillips site, Schuyler Co (40° 14′ 20″ N, 90° 30′ 40″ W). Sample obtained from excavation of small oval, Late Woodland structure. In direct assoc were "Bauer Branch complex" sherds (Green, 1976) and charred remains of *Zea mays*. Sample should date structure and add to small list of (pre-Mississippian) Late-Woodland sites at which corn was present. Subm by D A Baerreis.

Peisker site

Charcoal from Peisker site, Illinois Archaeol Survey No. C-135, 5.6km S of Hardin, Calhoun Co (39° 5′ N, 90° 35′ W) coll by M L Staab, Univ Michigan. Subm by D A Baerreis. Site excavated 1962-63 by Perino

(1966a&b) and by Struever (1968). During excavations sealed Havana Hopewell component was discovered under Mound III; this small, ca 12.2m diam, isolated living area was completely excavated 1972 by M L Staab. Two earlier dates on Sub-Mound 3, M-1569 and -1570, were AD 250 and AD 70, respectively.

WIS-942. Peisker site **1955 ± 60**
$\delta^{13}C = -27.1‰$

Sample 109, wood (*Juglans, Carya*) and acorns from 27cm below surface.

WIS-947. Peisker site **1835 ± 70**
$\delta^{13}C = -26.1‰$

Sample 114, wood (*Carya, Quercus, Juglans*) and acorns from 81cm below surface.

WIS-950. Peisker site **1755 ± 60**
$\delta^{13}C = -26.3‰$

Sample 104 (*Carya*) from 74cm below surface.

Cahokia site

Excavations at Cahokia's Woodhenge structures (Wittry, 1969), Madison Co (38° 40′ N, 90° 04′ W) Aug 1977 by W L Wittry, Univ Illinois at Chicago Circle. Subm by D A Baerreis.

WIS-948. Cahokia site **1085 ± 55**
$\delta^{13}C = -27.1‰$

Small fragments of red cedar (*Juniperus*) from Feature 548, post pit of Woodhenge Circle No. 2. Sample treated with cold base and hot dilute acid.

WIS-969. Cahokia site **1060 ± 55**
$\delta^{13}C = -27.2‰$

Small fragments of red cedar from Feature 548. Acid treatment only.

WIS-976. Cahokia site **760 ± 55**
$\delta^{13}C = -25.8‰$

Charred wood from Feature 340, large pit centered at grid loc 156R70, possibly assoc with winter solstice sunrise post of Circle No. 3.

WIS-984. Cahokia site **685 ± 55**
$\delta^{13}C = -26.9‰$

Charred wood from Feature 506, post pit of Circle No. 3. Pit was superimposed by wall trench of House 302.

WIS-988. Cahokia site **1135 ± 55**
$\delta^{13}C = -25.6‰$

Charred wood from Feature 539, large pit believed to represent winter solstice sunrise post of Circle No. 4.

B. Iowa

WIS-952. Hickenbottom site (13JF52) **1320 ± 65**

$\delta^{13}C = -27.7‰$

Wood charcoal from directly above stone capped secondary burial, Feature 1. Pottery found near but not assoc with burial; suggests burial may be early Late Woodland in age. Sample coll 1977 by Joseph Tiffany, Univ Iowa, Iowa City, from mound excavation in Jefferson Co (41° 1′ N, 92° 1′ W). Subm by D A Baerreis.

WIS-926. Jones site (13CK1) **1130 ± 70**

$\delta^{13}C = -24.2‰$

Charcoal from Jones site, Cherokee Co (42° 54′ N, 95° 26′ W) coll 1974 by D C Anderson, Univ Iowa, Iowa City. Sample was recovered from charred post in Test Trench 1, Level 3. Post was oriented vertically *in situ* at base of midden deposit at depth of 61 to 90cm below present ground surface. Date should date approx beginning of occupation at site (Williams, 1975). Subm by D A Baerreis.

Helen Smith site (13LA71)

Charcoal excavated from multi-component (Woodland and Historic Anglo) Helen Smith site (Anderson, 1971; Alex, 1976) on W bank of Iowa R, Louisa Co (41° 8′ 15″ N, 91° 3′ 11″ W) in 1976 under direction of L M Alex, Spearfish, South Dakota, as part of joint salvage/amateur field school project of Iowa Archaeol Soc and Office of State Archaeologist of Iowa. Two 3m squares were excavated to sterile subsoil.

WIS-927. Helen Smith site (13LA71) **1385 ± 55**

$\delta^{13}C = -25.8‰$

Charcoal from Level 3 of Feature 3, NE corner of Sq F. Feature is steep-sided pit containing quantity of bone, charcoal, and ceramic and lithic artifacts.

WIS-931. Helen Smith site (13LA71) **1440 ± 55**

$\delta^{13}C = -25.1‰$

Charcoal from Level 6, SW quad of Sq F, near concentration of cultural debris.

WIS-966. Helen Smith site (13LA71) **1385 ± 60**

$\delta^{13}C = -25.9‰$

Charcoal from Levels 4 and 5, Sq XX, 1.5m sq opened 21.3m W of main excavation. Woodland pottery, lithic debitage, carbonized seeds, and some bone, comparable to that recovered in main excavation, encountered in this square.

WIS-920. Poison Ivy site (13LA84) **255 ± 60**

$\delta^{13}C = -25.6‰$

Charcoal from Oneota site on W bank of Iowa R in Louisa Co (41° 8′ 53″ N, 91° 3′ 2″ W) (Alex, 1978). Coll June 1976 by L M Alex; subm

by D A Baerreis. Samples from cultural deposit 1.2m below surface. Site is < 4.83km NE of McKinney village site (Slattery *et al*, 1975), also Oneota manifestation. Several villages of historic Indian groups are documented in journals of early European explorers in area and are believed to be present in immediate vicinity of site.

C. Missouri

Cannon Reservoir series, Victor Bridge site (23MN380)

Charcoal from Victor Bridge site, Monroe Co (39° 27′ 25″ N, 91° 49′ 02″ W) coll 1976 under direction of D R Henning, Univ Nebraska, Lincoln. Subm by D A Baerreis. Samples dated to establish position of site within seriation sequence established for Cannon Reservoir area of Salt River Valley.

WIS-912. Victor Bridge site (23MN380) 1355 ± 60

$\delta^{13}C = -26.4‰$

Sample from 20 to 30cm below machine scraped surface in Feature 12, small vertical-sided pit with relatively flat bottom, Sq 44S-53W and 45S-54W.

WIS-921. Victor Bridge site (23MN380) 1155 ± 60

$\delta^{13}C = -25.3‰$

Sample from charcoal concentration and dark brown pit fill of Feature 1A, vertical-sided, shallow basin-bottomed pit, 13 to 31cm below machine scraped surface, Sq 29S-43.5W. Acid treatment only.

WIS-922. Victor Bridge site (23MN380) 1220 ± 55

$\delta^{13}C = -25.5‰$

Sample in dark brown fill of Feature 8, vertical walled, shallow basin-bottomed pit filled with quantities of burned limestone. Sample taken 9 to 19cm below scraped surface, Sq 35.5S-38.5W.

WIS-917. Victor Bridge site (23MN380) 1370 ± 65

$\delta^{13}C = -25.4‰$

Sample from 21 to 44cm below scraped surface in dark brown pit fill of Feature 9 in Sq 33.5S-33W and 33.5S-33.5W. Acid treatment only.

WIS-911. Cannon Reservoir series, Tom Miskell site (23MN542) 1485 ± 70

$\delta^{13}C = -25.8‰$

Catalog nos. 165 and 134, Feature 33, 32 to 57cm below surface, and Feature 19, 30 to 51cm below surface, directly beneath plow zone. Coll 1976 under direction of D R Henning from Tom Miskell site, Monroe Co (39° 13′ N, 91° 45′ W).

Cannon Reservoir series, Muskrat Run site (23RA151)

Charcoal from Late Woodland Muskrat Run site, Rall Co (39° 32′ 35″ N, 91° 41′ 26″ W) coll 1976 under direction of D R Henning. Subm by D A Baerreis.

WIS-913. Muskrat Run site (23RA151) **1435 ± 60**
$\delta^{13}C = -27.7‰$

Sample from between and beneath limestone slabs that comprised burial structure, Feature 12.

WIS-915. Muskrat Run site (23RA151) **1290 ± 65**
$\delta^{13}C = -25.7‰$

Sample from 35 to 45cm below ground surface in large bell-shaped pit.

WIS-916. Muskrat Run site (23RA151) **1290 ± 70**
$\delta^{13}C = -25.5‰$

Charcoal from bottom portion of Feature 7B at 55 to 65cm below machine-scraped surface. This feature was superimposed by Feature 7A, basin-shaped pit. Acid treatment only.

WIS-924. Muskrat Run site (23RA151) **985 ± 65**
$\delta^{13}C = -22.5‰$

Charcoal and bone from 0 to 10cm below scraped surface in Feature 2, large shallow concentration of burned limestone.

Hatton Mound site (23MN275)

Human bone from stratified Late Archaic burial mound in Monroe Co (39° 26′ 26″ N, 91° 49′ 51″ W) coll 1961 by D R Henning; subm by D A Baerreis. Mound had 4 distinct levels of bone, each level separated from others by layer of closely spaced limestone slabs.

WIS-923. Hatton Mound site (23MN275) **4160 ± 65**
$\delta^{13}C = -21.9‰$

Unburned bone from Layer 3, which contained cremated bone in bundles, flexed and semi-flexed. Artifacts recovered included 3 chipped stone "daggers," some Late Archaic projectile points and chipped stone village refuse.

WIS-929. Hatton Mound site (23MN275) **2450 ± 55**
$\delta^{13}C = -21.1‰$

Unburned adult femora from Layer 4, which contained Late Archaic projectile points, sheet copper, antler flakers, bone awls, and bone fleshing tool.

WIS-963. Hatton Mound site (23MN275) **2600 ± 80**
$(\delta^{13}C = -21.1‰)$

Unburned bone from Layer 4. Separate sample was prepared, counted only once. Carbon isotope correction was based on analysis of WIS-929.

D. Wisconsin

Preston Rockshelter (47GT157)

Charcoal from stratified rockshelter in Grant Co (42° 59′ 38″ N, 90° 32′ 58″ W). Coll in summers of 1966, 1968, 1969 by H A Palmer,

Univ Wisconsin-Platteville; subm by J B Stoltman, Univ Wisconsin-Madison.

WIS-941. Preston Rockshelter (47GT157) **2780 ± 65**
$\delta^{13}C = -26.2‰$

Sample from Sq 16N36W, 2.96 to 3.02m below surface, from pre-pottery levels assoc with Preston corner-notched projectile points.

WIS-946. Preston Rockshelter (47GT157) **2710 ± 65**
$\delta^{13}C = -25.8‰$

Sample from hearth, Feature 23, Sq 20N32W, 2.6m deep. Sample from pre-ceramic levels with Durst projectile points.

WIS-943. Preston Rockshelter (47GT157) **1670 ± 65**
$\delta^{13}C = -26.8‰$

Sample from Sq 16N40W, 2.2m deep, from late Middle Woodland-early Late Woodland transition levels.

WIS-944. Preston Rockshelter (47GT157) **1220 ± 60**
$\delta^{13}C = -27.6‰$

Sample from Sq 16N32W, 1.4 to 1.5m deep, Late Woodland level assoc with Madison Ware ceramics and small triangular projectile points.

WIS-932. Preston Rockshelter (47GT157) **1150 ± 60**
$\delta^{13}C = -26.6‰$

Sample from Sq 12N36W, 1.5m deep, Late Woodland level.

II. GEOLOGIC SAMPLES

A. United States

Goshen Springs site, Alabama

Core 1976-A from center of basin in Goshen Springs, Pike Co (31° 44′ N, 86° 08′ W) coll Nov 1976 by Paul and Hazel Delcourt, Univ Minnesota; subm by Paul Delcourt. Depths are below water surface.

WIS-954. Goshen Springs site **Modern**
$\delta^{13}C = -28.3‰$

Clayey fibrous peat, segment 55 to 66cm deep.

WIS-955. Goshen Springs site **1345 ± 60**
$\delta^{13}C = -28.2‰$

Clayey fibrous peat, segment 89 to 101cm deep.

WIS-956. Goshen Springs site **5620 ± 70**
$\delta^{13}C = -27.0‰$

Black, organic, silty clay, segment 175 to 184cm deep.

WIS-957. Goshen Springs site **26,000 ± 380**
$\delta^{13}C = -31.6‰$

Dark gray-brown silty clay, 244 to 256cm deep.

WIS-958. Goshen Springs site **>33,000**
$\delta^{13}C = -30.0‰$

Silty clay, 302.5 to 309.5cm deep.

WIS-959. Goshen Springs site **>33,000**
$\delta^{13}C = -29.5‰$

Slightly clayey, sandy silt, 375 to 385cm deep.

WIS-965. Sheelar Lake site, Florida **23,880 ± 350**

Organic lake sediment, 3513 to 3525cm below surface, from Gold Head Branch State Park, Keystone Heights, Clay Co (29° 50′ N, 81° 57′ 30″ W). Coll March 1977 by H E Wright, Univ Minnesota, subm by H E Wright. Sample is base of sediment core for which pollen diagram will be prepared.

WIS-964. Taylor Lake site, Kentucky **1790 ± 60**
$\delta^{13}C = -28.3‰$

Lake sand with organic detritus from Taylor Lake near Logansport (47° 19′ N, 86° 47′ 30″ W). Sample from Core A, 915 to 930cm below water surface. Coll 1977 and subm by H E Wright.

Demont Lake, Michigan

Postglacial lake core of 9.5m length obtained from Demont Lake, Isabella Co, Michigan (43° 30′ N, 85° 3′ W) in June 1975 by R O Kapp and P J Ahearn, Alma Coll, Alma. Dates complete sequence of 5 dates on core. Pollen influx diagram which will serve as standard regional pollen record for late and postglacial record of central lower Michigan has been prepared. Subm by Thompson Webb, III, Brown Univ, Providence, Rhode Island.

WIS-930. Demont Lake **3935 ± 65**
$\delta^{13}C = -37.4‰$

Yellowish-brown peaty gyttja, Sample D-BB, from 3.45 to 3.55m level of core.

WIS-928. Demont Lake **10,770 ± 110**
$\delta^{13}C = -31.9‰$

Steel-gray sandy gyttja, quite calcareous, Sample D-RRR, from 7.35 to 7.50m level.

Wolsfeld Marsh, Minnesota

Core obtained in Wolsfeld Marsh, Hennepin Co (45° 00′ N, 93° 34′ W) in 1976 by E C Grimm, Univ Minnesota; subm by H E Wright. Core is to be used for pollen analysis.

WIS-970. Wolsfeld Marsh site **<200**
$\delta^{13}C = -29.4‰$

Sedge peat, 23.5 to 26.5cm depth.

WIS-972. Wolsfeld Marsh site **905 ± 60**
$\delta^{13}C = -28.5‰$

Sedge peat, 58.0 to 62.0cm depth.

WIS-934. Szabo Bog, New Jersey **8515 ± 85**
$\delta^{13}C = -29.8‰$

Silty organic lake sediment from Szabo Bog, Middlesex Co, New Jersey, New Brunswick quad (40° 24′ N, 74° 29′ W). Coll May 1975 by H E Wright and W A Watts, Trinity Coll, Dublin, Ireland; subm by H E Wright. Sample 60 to 65cm below mud surface, 160 to 165cm below water surface. Dates end of oak pollen increase in early Holocene.

WIS-936. Panther Run, Pennsylvania **6400 ± 75**
$\delta^{13}C = -30.4‰$

Silty organic lake sediment from Panther Run, Mifflin Co, Pennsylvania, Spring Mills quad (40° 48′ N, 77° 25′ W). Sample 70 to 80cm below mud surface, 100 to 110cm below water surface; dates pine pollen max, base of oak pollen increase. Coll May 1975 by H E Wright and W A Watts.

WIS-962. Nonconnah Creek Terrace site, Tennessee **>33,000**

Silty clay from sediment column, NC-TN-2-B, 210 to 215cm deep, coll 1976 by Paul and Hazel Delcourt from alluvial sec exposed along bank of Nonconnah Creek in Shelby Co (35° 05′ N, 89° 55′ W). Subm by H E Wright.

Lake Colebrook site, Vermont

Samples related to proglacial lake in upper Connecticut R valley, probably Lake Colebrook of Lougee (1939) in Essex Co, Vermont, along Connecticut R (44° 50′ 50″ N, 71° 38′ 30″ W). Coll Feb and Nov 1977 by N G Miller, Harvard Univ, Cambridge, Massachusetts. Subm by Thompson Webb, III.

WIS-919. Lake Colebrook site **11,390 ± 115**
$\delta^{13}C = -27.5‰$

Wood fragments and miscellaneous plant debris from sand lamina, 84cm below top of exposure of laminated clay that extends at least to depth of 3.68m.

WIS-925. Lake Colebrook site **20,500 ± 250**

Very calcareous unoxidized clay with 3 plant debris layers, 138 to 145cm below top of exposure of laminated clay. Sample contained abundant *Potamageton* leaf fragments in which "old" carbon was perhaps incorporated.

WIS-961. Lake Colebrook site **11,540 ± 110**
$\delta^{13}C = -29.0‰$

Organic detritus in sandy laminae between 152 and 158cm below top of laminated clay exposure.

WIS-935. Potts Mountain, Virginia **9140 ± 90**
$\delta^{13}C = -31.6‰$

Clayey organic lake sediments, 65 to 71cm below water and mud surface, from Potts Mountain, Alleghany Co, Potts Creek quad, on crest on Potts Mt (37° 36′ N, 80° 08′ W). Dates hemlock pollen max, base of chestnut pollen increase. Coll Aug 1971 by H E Wright and W A Watts.

WIS-933. Cranberry Glades Botanical Area, West Virginia **7325 ± 80**
$\delta^{13}C = -29.1‰$

Sec of core, 322 to 332cm, obtained 1971 from Cranberry Glades Botanical Area, Monongahela Natl Forest, Pocahontas Co, 24km E of Richwood (38° 10′ N, 80° 15′ W). Coll by W A Watts; subm by A M Swain, Univ Wisconsin-Madison. Two dates on core have been previously reported (R, 1977, v 19, p 134).

WIS-945. Oneida County site, Wisconsin **10,960 ± 105**
$\delta^{13}C = -24.6‰$

Log (*Larix laricina*) id by D J Christensen, Forest Products Lab, Madison, 14m below surface in peat at base of sphagnum bog. Coll March 1977 by D Mickelson, Univ Wisconsin-Madison from bog in Oneida Co (45° 34′ N, 89° 40′ W). This area probably part of Lake Nokomis; date should be min for deglaciation of Wisconsin Valley Lobe in this area (Mickelson *et al,* 1974). Pollen shows high spruce counts. Subm by A M Swain.

South Waubesa Wetlands site, Wisconsin

Core samples obtained Dec, 1977 from South Waubesa marsh, Dane Co (42° 59′ N, 89° 21′ W) by T K Kratz and R M Friedman, Univ Wisconsin-Madison. Subm by C B DeWitt, Univ Wisconsin-Madison. Peat samples from selected portions of marsh dated to determine rate of lake-edge wetlands formation; results are to be used in mathematical model of wetlands formation investigating effects of spatial inter-relationships, nutrients and climate on wetlands ecosystem dynamics (Friedman & DeWitt, 1978).

WIS-953. South Waubesa Wetlands site **1915 ± 60**
$\delta^{13}C = -28.8‰$

Band of peat, 12cm, immediately above transition between fibrous and lake sedimentary peat 1.75m below surface.

WIS-951. South Waubesa Wetlands site **1995 ± 60**
$\delta^{13}C = -28.4‰$

Band of peat, 12cm, immediately above fibrous to lake sedimentary peat transition 1.36m below surface.

WIS-967. South Waubesa Wetlands site **2820 ± 65**
$\delta^{13}C = -29.3‰$

Band of peat, 12cm, overlying fibrous to lake sedimentary peat transition zone, 1.90m deep.

WIS-971. South Waubesa Wetlands site **3425 ± 65**
$\delta^{13}C = -28.8‰$

Band, 12cm, overlying fibrous to lake sedimentary peat transition zone, 1.7m below surface.

WIS-973. South Waubesa Wetlands site **5060 ± 70**
$\delta^{13}C = -28.8‰$

Band of fibrous peat, 12cm, above fibrous–lake sedimentary peat transition zone, 1.7m below surface.

WIS-974. South Waubesa Wetlands site **2015 ± 65**
$\delta^{13}C = -29.8‰$

Sample above transition zone, 1.32m below surface.

WIS-975. South Waubesa Wetlands site **1065 ± 60**
$\delta^{13}C = -29.0‰$

Band, 12cm, above transition zone, 1.25m below surface.

WIS-977. South Waubesa Wetlands site **2840 ± 65**
$\delta^{13}C = -28.8‰$

Lake sedimentary peat 2.31m below surface, 0.95m below transition zone; very calcareous sample.

WIS-978. South Waubesa Wetlands site **5850 ± 70**

Lake sedimentary peat 5.30m, 3.95m below transition between fibrous peat and lake sedimentary peat; very calcareous sample.

B. Canada

St Calixte site

Core, 630cm, from small lake near St Calixte, N of Champlain Sea, Quebec (45° 57′ 40″ N, 73° 52′ 05″ W). Coll 1977 by Pierre Richard, Univ Montreal, Canada; subm by Thompson Webb, III.

WIS-938. St Calixte site **3350 ± 60**
$\delta^{13}C = -29.6‰$

Organic lake mud, 150 to 160cm sec of core. Dates beginning of 2nd *Tsuga* max and *Fagus* max.

WIS-940. St Calixte site **6135 ± 75**
$\delta^{13}C = -31.0‰$

Gyttja, 370 to 380cm sec of core. Dates 1st *Tsuga* max and beginning of curve of *Fagus* pollen.

WIS-939. St Calixte site **8565 ± 90**

$\delta^{13}C = -28.7‰$

Gyttja, 490 to 500cm sec. Dates max of *Pinus* cf *divaricata* pollen curve for locality.

WIS-937. St Calixte site **9755 ± 100**

$\delta^{13}C = -28.9‰$

Gyttja, 570 to 580cm sec, just above silt and sand of last 50cm of core. Dates outstanding *Populus* max in afforestation phase of pollen sequence.

C. Africa

WIS-968. Lake Ikimba **1685 ± 60**

$\delta^{13}C = -17.7‰$

Black lacustrine silt, basal 4cm sec of 198cm sediment core, from Lake Ikimba, Lake Dist, United Republic of Tanzania (1° 27′ S, 31° 35′ E). Core taken under 316cm water. Coll 1977 by R A Laseski, Brown Univ, Providence, Rhode Island; subm by Thompson Webb, III.

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