[RADIOCARBON, VOL. 11, NO. 1, 1969, P. 228-235]

UNIVERSITY OF WISCONSIN RADIOCARBON DATES VI

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The radiocarbon dates obtained since December 1967 are included in this report. The procedures followed have been described previously (Radiocarbon, 1966, v. 8, p. 522-533).

The reported dates have been calculated using 5568 as the half-life of C^{14}, 1950 as the reference year. Samples are counted at least once in each of two 500 ml counters at 3 atm pressure for a minimum of 15,000 counts. The standard deviation quoted includes only the 1σ of the counting statistics of background, sample, and standard counts.

ACKNOWLEDGMENTS

This research is supported by the National Science Foundation, Atmospheric Sciences Division, Grant GP-5572X, and Social Sciences Division, Grant GS-1141.

SAMPLE DESCRIPTIONS

I. ARCHAEOLOGIC SAMPLES

A. Wisconsin

WIS-288. Bornick site, Wisconsin (47MQ65) **660 ± 50** **A.D. 1290**

Test excavations at Bornick site, Marquette County, Wisconsin (43° 48′ N Lat, 89° 15′ W Long) were carried out in 1967 by Guy Gibbon, Univ. of Wisconsin-Madison; subm. by D. A. Baerreis. Charcoal from Feature 1, Test Square 21, 1.5 to 2.0 ft below surface. Site is component of Grand River phase, closely related to Walker-Hooper (see below).

WIS-290. Walker-Hooper site, Wisconsin (47GL65) **740 ± 50** **A.D. 1210**

Charcoal samples obtained from 1967 excavations by Guy Gibbon at Walker-Hooper site in Green Lake County, Wisconsin (43° 42′ N Lat, 89° 09′ W Long), essentially the type site for Grand River phase of Wisconsin Oneota; subm. by D. A. Baerreis. Sample from 0.8 to 1.3 ft below surface in Level 1, Feature 57, a trash pit. Date agrees well with earlier results (Radiocarbon, 1968, v. 10, p. 475: WIS-268, 270 and 277) of A.D. 1240, 1230, and 1200 respectively.

WIS-315. Dietz site, Wisconsin (47DA12) **760 ± 60** **A.D. 1190**

Charcoal from Dietz site, Dane County, Wisconsin (43° 04′ N Lat, 89° 23′ W Long) of Woodland cultural affiliation. Coll. 1958 and subm. by D. A. Baerreis. Sample from storage or refuse pit, Feature 18. Date

is in close agreement with earlier ones from same site (Radiocarbon, 1967, v. 9, p. 537: WIS-193) of A.D. 1170 and (Radiocarbon, 1968, v. 10, p. 475: WIS-273) of A.D. 1120.

B. Iowa

390 ± 50

WIS-284. Bastian site, Iowa (13CK28) A.D. 1560

Bastian site, Cherokee County, Iowa (42° 45′ N Lat, 95° 30′ W Long) is on high terrace between mouth of Mill Creek and W bank of Little Sioux R. Site has yielded number of large engraved catlinite plaques in addition to other Oneota cultural remains. Pottery appears similar to Correctionville-Dixon variety and to some of Orr focus remains. Charcoal coll. 1966 and subm. by Dale Henning, Univ. of Missouri.

3860 ± 65

WIS-285. A. C. Banks site, Iowa (13PM40) 1910 B.C.

Charcoal from A. C. Banks site, Plymouth County, Iowa (42° 42′ N Lat, 96° 37′ W Long). Coll. 1967 by R. Banks and D. A. Baerreis; subm. by D. A. Baerreis. Soil samples were coll. at 2 in. intervals in vertical column for recovery of molluscs. This column also produced charcoal, seeds, and flint chips from an occupation zone. Sample dated from 78 in. depth, below primary occupation zone at 50 to 62 in. depth.

Rock Run Shelter series, Iowa (13CD10)

Rock Run Shelter, on small tributary of Cedar R. in Cedar County, Iowa (41° 42′ N Lat, 91° 11′ W Long), excavated 1967 by Robert Alex, State Univ. of Iowa, contained sequence of Woodland culture remains in deposit 4.5 to 5.5 ft thick. Coll. 1968 by Robert Alex; subm. by D. A. Baerreis.

910 ± 55

WIS-316. Rock Run Shelter site (13CD10) A.D. 1040

Charcoal, small fragments of charred wood, and seed floated from soil sample 8 to 10 in. below original surface level of shelter in Sq. 49-50X, 52-53Y.

1630 ± 60

WIS-320. Rock Run Shelter site (13CD10) A.D. 320

Charcoal, wood fragments, and nuts, either walnut or hickory nuts, 34 to 36 in. below original surface.

4180 ± 70

WIS-317. Rock Run Shelter site (13CD10) 2230 B.C.

Charcoal, floated from soil sample, wood, seed, and nut fragments, from Sq. 49-50X, 52-53Y, Excavation Unit 1, 58 to 60 in. below original surface.

C. Illinois

Cahokia site series, Illinois

Samples from 1967 excavations at Cahokia site, St. Clair County, Illinois (38° 39′ N Lat, 90° 04′ W Long) under direction of Melvin Fowler, Univ. of Wisconsin-Milwaukee. Logs were found at bottom of deep pit, Feature 1, under Mound 72 apparently to crib or support upright post which had been in pit.

970 ± 50

WIS-293. Cahokia site, Illinois **A.D. 980**

Log B.

1020 ± 55

WIS-298. Cahokia site, Illinois **A.D. 930**

Log A. Wood could not be id. because of fungal destruction of cells (B. F. Kukachka, U. S. Forest Products Lab, Madison, Wisconsin).

D. Oklahoma

Cooper site series, Oklahoma (DL-33 and DL-49)

Charcoal obtained from excavations at Cooper site, Delaware County, Oklahoma (36° 35′ N Lat, 94° 50′ W Long) of Hopewellian cultural affiliation. Stylistic comparisons of ceramics with Illinois sequences suggest 1 occupation area (DL-33) should antedate the 2nd (DL-49), 500 yds distant from 1st (Baerreis, 1954). Coll. 1939 and subm. by D. A. Baerreis.

980 ± 55

WIS-307. Cooper site (DL-33) **A.D. 970**

Specimen 1146 from Sq. NE 1:17, Level 3, 8 to 12 in. below surface.

680 ± 55

WIS-309. Cooper site (DL-49) **A.D. 1270**

Specimen 323 from Sq. 4:8, Level 3, 8 to 12 in. below surface.

1840 ± 60

WIS-313. Cooper site (DL-49) **A.D. 110**

Specimen 1998 from Sq. NE 1:9, Level 3, 8 to 12 in. below surface.

Marrs site series, Oklahoma (BR-18)

Charred corn cobs from Marrs site, Bryan County, Oklahoma (33° 55′ N Lat, 96° 35′ W Long) obtained from excavations in 1941 by D. A. Baerreis; subm. by D. A. Baerreis. Site is type site for Bryan focus (Bell and Baerreis, 1951).

400 ± 50

WIS-185. Marrs site, Oklahoma (BR-18) **A.D. 1550**

Burned corn cobs from Cache Pit 55, Grid I-2, Sq. 5:11. Date includes correction of 200 yr based on C^{13}/C^{12} enrichment of 1.23% in corn relative to wood (Bender, 1968).

590 ± 60

WIS-190. Marrs site, Oklahoma (BR-18) A.D. 1360

Charred corn cobs from Cache Pit 49, Grid I-2, Sq. 8:8. Date includes correction of 200 yr for carbon isotopic enrichment in corn.

630 ± 60

WIS-189. Marrs site, Oklahoma (BR-18) A.D. 1320

Charred corn cobs from Cache Pit 48, Grid I-2, Sq. 20:7, 9 in. below surface. Date includes correction of 200 yr for carbon isotopic enrichment in corn.

II. GEOLOGIC SAMPLES

Collection and dating of fossil organic material for the study of Canadian paleo-environments (Wisconsin I-V, Radiocarbon, 1965-1968, v. 7-10) continues with the object of further delineating by palynology and stratigraphy extent and nature of vegetational and climatic changes already established in central and N Canada (Bryson, Larsen, and Irving, 1965; Nichols 1967a, b, c, 1968a, b).

Samples from the base of peat bogs were coll. from S Canada for a study of deglaciation (Bryson and Wendland, 1968) and chronology of peat growth (Nichols, 1968b). Complete peat monoliths dug from pits on exposed banks were coll. for pollen analysis from Peace River (Alberta), Porcupine Mt. (Manitoba), and Colville Lake (Mackenzie). Samples were cleaned in laboratory and cut into 2 cm slices for C^{14} assay. Core samples were recovered by a strengthened stainless steel modified-Hiller peat corer with removable aluminum lining (3.5 cm diam.) for laboratory extraction of sample. Borer was used in peat less than 200 cm deep to reduce risk of chamber distortion and down-carriage of upper peat. Samples were taken from a single boring at each site and spanned only 5 cm vertical distance. To lessen contamination, outer skin of Hiller-type sample was removed in laboratory while inner core remained frozen.

A. Central Canada

Peace River, Alberta

Peat bog near town of Peace River, Alberta (56° 17′ N Lat, 117° 20′ W Long) underlain conformably by sediments of Glacial Lake Peace (Taylor, 1960). Continuous peat monolith (180 cm) cut from side of pit excavated 1967 by R. A. Bryson, H. Nichols and R. L. Steventon; subm. by H. Nichols. Samples date events in pollen diagram by H. Nichols; basal date has already been reported, WIS-274, 4930 B.C. (Radiocarbon, 1968, v. 10, p. 478).

WIS-300. Peace River, Alberta <250

Unhumified *Sphagnum* peat with gymnosperm wood 24 to 26 cm below modern surface.

2620 ± 60

WIS-304. Peace River, Alberta **670 B.C.**

Wood peat 84 to 86 cm below surface.

3590 ± 75

WIS-302. Peace River, Alberta **1640 B.C.**

Wood peat 110 to 112 cm below surface.

4510 ± 70

WIS-311. Peace River, Alberta **2560 B.C.**

Muddy rootlet peat 130 to 132 cm below modern surface.

Porcupine Mountain, Manitoba

Peat bog in kettle on Porcupine Mt (52° 31′ N Lat, 101° 15′ W Long), elev. ca. 2100 ft. Monolith cut from side of pit dug 1967 by R. A. Bryson and H. Nichols; subm. by H. Nichols. Samples date events in pollen diagram by H. Nichols; basal date previously reported, WIS-271, 4820 B.C. (Radiocarbon, 1968, v. 10, p. 477).

WIS-301. Porcupine Mountain, Manitoba **<250**

Unhumified *Sphagnum* peat 26 to 28 cm below modern surface.

1170 ± 60

WIS-287. Porcupine Mountain, Manitoba **A.D. 780**

Sphagnum peat 50 to 52 cm below modern surface.

2000 ± 55

WIS-289. Porcupine Mountain, Manitoba **50 B.C.**

Sphagnum peat 78 to 80 cm below modern peat surface.

2270 ± 60

WIS-303. Porcupine Mountain, Manitoba **320 B.C.**

Moderately humified *Sphagnum* peat, rootlet peat and wood; 100 to 102 cm below surface.

2450 ± 60

WIS-306. Porcupine Mountain, Manitoba **500 B.C.**

Moderately humified *Sphagnum* peat 116 to 118 cm below surface.

4180 ± 75

WIS-286. Porcupine Mountain, Manitoba **2230 B.C.**

Rootlet detritus peat 144 to 146 cm below modern peat surface.

5140 ± 75

WIS-308. Porcupine Mountain, Manitoba **3190 B.C.**

Detritus mud 170 to 175 cm below modern surface.

3410 ± 55

WIS-281. Mackenzie Highway, Alberta **1460 B.C.**

Shallow blanket of muskeg peat 52 cm deep overlying clay; basal organic material appeared unconformable with mineral base. Sampled

1967 from pit excavated near Mackenzie Hwy, Alberta (59° 12′ N Lat, 117° 30′ W Long) by R. A. Bryson, H. Nichols, and R. L. Steventon; subm. by H. Nichols. Sample dated, 50 to 52 cm below surface, dates initiation of peat growth.

WIS-283. Keg River, Alberta **3450 ± 60** **1500 B.C.**

Blanket of muskeg peat bog covering clay unconformably at Keg R., Alberta (57° 28′ N Lat, 117° 11′ W Long). Sampled by R. A. Bryson, H. Nichols, and R. L. Steventon in 1967 with Hiller-type borer (see above); subm. by H. Nichols. Sample dated was wood peat (overlain by *Sphagnum* peat) at 115 to 120 cm below modern surface, overlying blue silty clay at 123 cm; dates initiation of peat growth.

WIS-282. North Star, Alberta **1870 ± 60** **A.D. 80**

Blanket of muskeg peat, primarily *Sphagnum* spp. at North Star, Alberta (56° 42′ N Lat, 117° 38′ W Long) unconformably overlying minerogenic base of very variable height and character (sand, silt or clay) with wood or charcoal occasionally at base of peat in some borings. Sample coll. 1967 by R. A. Bryson, H. Nichols, and R. L. Steventon with Hiller-type borer; subm. by H. Nichols. Sample dated was crumbly drift peat, 140 to 145 cm below modern surface, immediately over clay. Dates initiation of peat growth but is minimum date in light of irregular sub-peat surface.

WIS-280. Mann Lake, Alberta **4350 ± 70** **2400 B.C.**

Peat bog in kettle surrounded by steep hill slopes near Mann Lake, Alberta (54° 10′ N Lat, 111° 28′ W Long). Sampled in 1967 by R. A. Bryson, H. Nichols, and R. L. Steventon with Hiller-type borer; subm. by H. Nichols. Sample was sandy silty necron mud 195 to 200 cm below modern surface overlying silty clay conformably at 200 cm. Dates organic accumulation in small lake after mineral inwash from surrounding slopes.

B. Northwest Territories, Canada

Colville Lake, N.W.T.

Continuous monolith (215 cm) coll. 1967 by J. A. Larsen from surface to marl base of exposed peat bank at shore of Colville Lake, Mackenzie, N.W.T. (67° 06′ N Lat, 125° 47′ W Long). Subm. by H. Nichols. Samples date events in pollen diagram by H. Nichols.

WIS-297. Colville Lake, N.W.T. **1810 ± 60** **A.D. 140**

Humified peat 34 to 36 cm below surface.

3180 ± 65

WIS-314. Colville Lake, N.W.T. 1230 B.C.

Humified *Sphagnum* peat with charcoal 44 to 46 cm below modern surface.

3980 ± 65

WIS-295. Colville Lake, N.W.T. 2030 B.C.

Moderately humified *Sphagnum* peat 68 to 70 cm below modern surface.

4130 ± 55

WIS-294. Colville Lake, N.W.T. 2180 B.C.

Unhumified *Sphagnum* peat 90 to 92 cm below surface.

5730 ± 75

WIS-296. Colville Lake, N.W.T. 3780 B.C.

Unhumified *Sphagnum* peat 124 to 126 cm below surface.

6630 ± 85

WIS-299. Colville Lake, N.W.T. 4680 B.C.

Unhumified *Sphagnum* peat 174 to 176 cm below modern surface.

2080 ± 60

WIS-292. Pelly Lake, N Keewatin, N.W.T. 130 B.C.

Samples from site ca. 5 mi N of Pelly Lake, N Keewatin, N.W.T. (66° 05′ N Lat, 101° 04′ W Long). Coll. 1966 and subm. by H. Nichols. Sample dated was coarse sandy detritus mud 26 to 28 cm below surface.

290 ± 55

WIS-312. Repulse Bay, Keewatin, N.W.T. A.D. 1660

At Repulse Bay (66° 31′ N Lat, 86° 15′ W Long) snow bank which survived summer of 1966 in shelter of 10m cliff was excavated to reveal underlying fossil plant debris. This material predates climatic deterioration which allowed accumulation of "permanent" bank of snow and ice, and may be comparable with other samples of recent age recovered from beneath ice margins in N Canada (100 B.P., I-408, 200 B.P., I-1674, 330 B.P., I-1204, Andrews, 1967). This falls within period of reduced summer temperatures in Keewatin noted by Nichols (1967c) and of ice advance in N. America and Europe (Porter and Denton, 1967). Sample dated was sandy peat from 2 to 4 cm below surface of peat. Coll. 1966 by J. A. Larsen; subm. by H. Nichols.

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