

UNIVERSITY OF WISCONSIN RADIOCARBON DATES XI

MARGARET M. BENDER, REID A. BRYSON, and
DAVID A. BAERREIS

Department of Meteorology
University of Wisconsin, Madison

This report includes radiocarbon dates obtained since December 1971. Procedures and equipment have been described previously (R., 1966, v. 8, p. 522).

The dates reported have been calculated using 5568 as the half-life of C^{14} , with 1950 as the reference year. The standard deviation quoted includes only the 1σ of the counting statistics of background, sample, and standard counts. Methane prepared from NBS oxalic acid is used as the standard; the C^{13}/C^{12} ratios of the CO_2 prepared from this oxalic acid are measured and the activity of the standard methane is corrected for any deviation of the δC^{13} values of the CO_2 sample from the -19‰ value (compared to the PDB standard) reported by Craig (1961). The dated samples for which δC^{13} values are listed have been corrected to -25.0‰ (PDB) standard, the "normal" value of terrestrial material.

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I. ARCHAEOLOGIC SAMPLES

A. Illinois

WIS-504. Mansker site **940 ± 60**
A.D. 1010
 $\delta C^{13} = -26.8\text{‰}$

Charcoal (*Carya* sp.) id. by L. A. Conrad, from Mansker site, a Late Woodland Mississippian complex, (24A2-8, SIU Museum system) in Randolph Co., Illinois, (37° 51' 43" N Lat, 89° 41' 55" W Long) along Rock Creek, Rockwood Quadrangle. Coll. May 1961 by J. W. Porter and A. Harn; subm. by J. W. Porter, Univ. Wisconsin-Madison. Sample from burned area over doorway of Feature 18, rectangular wall trench house, and Feature 15, round pit. Feature 15 has shell-tempered pottery.

WIS-595. Jean Rita site (Mo-95) **1915 ± 60**
A.D. 35

Excavations at site in Monroe Co., Illinois (38° 27' N Lat, 90° 14' 05" W Long) in Aug. 1972 by J. W. Porter. Site is single component of Early Woodland affiliation with Marion Thick pottery and straight stemmed projectile points on flood plain of Mississippi R. just S of

Cahokia (St. Louis). Sample was deer bone from concentration with one large Marion Thick vessel (sherds).

Cahokia, Monks Mound series

Samples coll. summer 1971 under direction of Melvin Fowler, Univ. Wisconsin-Milwaukee, at Cahokia site, Monks Mound, First Terrace and East Lobes, Madison Co., Illinois (38° 40' N Lat, 90° 04' W Long). Subm. by D. A. Baerreis.

WIS-545. Monks Mound, First Terrace **740 ± 55**
A.D. 1210
 $\delta C^{13} = -26.4\%$

Charcoal, Sample 71-727, from Feature 139, burned building on top of primary mound, N67.32 E91, 25cm below surface. Sample is burned post, probably oak.

WIS-546. Monks Mound, First Terrace **805 ± 60**
A.D. 1145

Charcoal, Sample 71-537, Log 24 lying on floor of Feature 113, large burned building under primary mound, N66-67 E102-104. WIS-443, also from Feature 113, dated at A.D. 1280 (R., 1971, v. 13, p. 475).

WIS-547. Monks Mound, First Terrace **825 ± 60**
A.D. 1125

Charcoal, Sample 71-708, Log 1 lying on burned floor of Feature 114, small burned building under primary mound, N62.3-62.5 E102.2-102.4. WIS-365, also from Feature 114, dated at A.D. 1110 (R., 1970, v. 12, p. 340).

WIS-549. Monks Mound, First Terrace **720 ± 55**
A.D. 1230

Burned wood, Sample 71-780, in matrix of ash from burned basin, Feature 149, N78-80 E100-101, 138.8-138.9 M.A.T. Feature predates primary mound.

WIS-586. Monks Mound, East Lobes **640 ± 55**
A.D. 1310

Sample 71-1291, N168.9 E274.63, 148cm below surface. Piece of charred twig or log underlying pre-ramp surface assoc. with wide area of scattered burned clay and twigs or small logs.

WIS-587. Monks Mound, East Lobes **925 ± 60**
A.D. 1025
 $\delta C^{13} = -12.6\%$

Sample 71-1119, N150-152 E280-281, 360 to 380cm below surface. Burned thatch layer interspersed with ash lenses almost completely covering excavation at this depth.

WIS-575. Cahokia, Mound 72 **920 ± 60**
A.D. 1030
 $\delta C^{13} = -23.7\%$

Wood from Mound 72, Cahokia Mounds State Park, St. Clair Co., Illinois (38° 39' N Lat, 90° 04' W Long). Coll. 1971 by Melvin Fowler;

subm. by D. A. Baerreis. Pole from B. 210, S865-865.30 E60. Dates last burials in Feature 229.

Orendorf site series (FV-1284)

Excavations in 1972 at the Middle Mississippian Orendorf site in Fulton Co., Illinois (40° 29' N Lat, 90° 57' W Long) were supervised by L. A. Conrad, Univ. Wisconsin-Madison; subm. by D. A. Baerreis.

WIS-603. Orendorf site (FV-1284) **780 ± 50**
A.D. 1170
 $\delta C^{13} = -26.6\%$

Sample of outer 8 rings of charred white oak (*Quercus* sp.) on floor of Structure 10 along E wall. Assemblage of 10 ceramic vessels on floor of partially excavated structure included short-necked water bottles, sharp-shouldered jars with trailed or incised chevrons or scrolls, plain jars but no cordmarked ware. Material is characteristic of early Larson phase.

WIS-604. Orendorf site (FV-1284) **710 ± 60**
A.D. 1240
 $\delta C^{13} = -26.9\%$

Charred wood (*Ulmus americana*), id. by L. A. Conrad, from floor of Structure 10.

WIS-605. Orendorf site (FV-1284) **750 ± 55**
A.D. 1200
 $\delta C^{13} = -26.4\%$

Charcoal, predominantly hickory (*Carya* sp.) and some white oak (*Quercus* sp.) from fill of 45.7cm deep cylindrical fire pit, Feature 59, in center of Structure 5. Should date angular shouldered jar and polished black jar with crude excised scroll and broad everted rim with thickened lip, presumably descendant of Ramey Incised.

WIS-606. Orendorf site (FV-1284) **760 ± 60**
A.D. 1190
 $\delta C^{13} = -25.0\%$

Wood charcoal, 5 rings of log on floor of Structure 2 underlain by packed loess floor and overlain by fill composed mostly of loess. Material, assemblage of well-made cordmarked jars and medium-rimmed plates decorated with trailed crescents, characteristic of late Larson phase.

WIS-607. Orendorf site (FV-1284) **800 ± 55**
A.D. 1150
 $\delta C^{13} = -26.9\%$

Charcoal, small fragments of oak, hickory, and walnut or butternut. Sample from floor or wall trench structure near center of earlier plaza. House basin was filled with very dark soil including much cultural debris. Ceramic assemblage consisted mainly of cordmarked jars.

WIS-608. Orendorf site (FV-1284) **700 ± 55**
A.D. 1250
 $\delta C^{13} = -26.3\%$

Charred log, outer 8 rings, (*Ostrya virginiana*), id. by L. A. Conrad, on floor of Structure 2, underlain by contemporary storage rubbish pit and overlain by fill containing mostly loess.

B. Iowa

Paul Williams site (13PM50)

Charcoal from Paul Williams site, Plymouth Co., Iowa (42° 37' N Lat, 96° 25' W Long) of Great Oasis cultural affiliation were coll. 1971 by D. C. Anderson, Sanford Mus., Cherokee, Iowa; subm. by D. A. Baerreis.

WIS-555. Paul Williams site (13PM50) **890 ± 55**
A.D. 1060

Sample from Test Pit 1, Level 1, ca. 41cm below original ground surface in area stripped by bulldozer. Assoc. with 2 types of Great Oasis rim sherds.

WIS-558. Paul Williams site (13PM50) **880 ± 50**
A.D. 1070

Sample from 35.6cm depth.

Johnson Farm site series (13ML-128 and 13ML-129)

Charcoal from 2 earthlodges, 13ML-128 and 13ML-129, of Nebraska aspect of Central Plains tradition on W stream terrace of Keg Creek, 1.21km S of Glenwood, Iowa (41° 2' 04" N Lat, 95° 45' 12" W Long and 41° 1' 57" N Lat, 95° 45' 16" W Long, resp.). Excavated 1971 by J. A. Hotopp, Iowa City, Iowa; subm. by D. A. Baerreis. First 5 samples listed id. as *Ulmus rubra* or *Celtis occidentalis*.

WIS-560. Johnson Farm site (13ML-128) **820 ± 50**
A.D. 1130

Sample 322-1378 from wall post, S wall of 10.7m sq. earthlodge, mold diam. 17.8cm, 70.4cm depth.

WIS-565. Johnson Farm site (13ML-128) **790 ± 50**
A.D. 1160

Sample 323-1494 from Cache Pit 13, NW area of house; small pit, 45.7cm diam., 30.5cm deep.

WIS-566. Johnson Farm site (13ML-128) **855 ± 55**
A.D. 1095

Sample 322-1422 from wall post of E wall, entryway area, 11.3cm depth, mold diam. 15.2cm.

WIS-559. Johnson Farm site (13ML-129) **820 ± 55**
A.D. 1130

Sample 323-888 from SW central support post of 9.4m sq. earthlodge; mold diam. 20.3cm, 49.4cm depth.

765 ± 55

WIS-562. Johnson Farm site (13ML-129) A.D. 1185
 Sample 323-549, wall post fragment on S wall of house, post diam. 10.2cm, 33.5cm depth.

825 ± 60

WIS-564. Johnson Farm site (13ML-129) A.D. 1125
 Sample 323-416 (*Ulmus americana*) from roof beam in N area of house, approx. diam. of beam 15.2cm.

Hadfield's Cave (13JN3)

Hadfield's Cave was excavated under supervision of David Benn, Univ. Wisconsin-Madison, summer 1972, Jones Co., Iowa (42° 14' N Lat, 90° 56' W Long). Cave was apparently occupied by Late Woodland people (Anderson, 1971a, b). Subm. by D. A. Baerreis.

1290 ± 55

WIS-588. Hadfield's Cave (13JN3) A.D. 660
 $\delta C^{13} = -26.9\text{‰}$

Charred nut shells (hickory, walnut, and butternut) and charcoal from Level 3, 7.6 to 15.2cm deep, Sq. 104, from most intensely occupied portion of site.

1655 ± 65

WIS-589. Hadfield's Cave (13JN3) A.D. 295
 $\delta C^{13} = -27.2\text{‰}$

Charcoal from Sq. 102, Level 4, 15.2 to 22.9cm deep, in zone of extensively burned earth. Square is well inside cave in zone of constant 52° temperature.

1530 ± 55

WIS-594. Hadfield's Cave (13JN3) A.D. 420

Charcoal from Feature 46, Sq. 99, Level 5, 22.9 to 30.5cm deep. From one of deepest levels in cultural zone at far N end of site.

1220 ± 60

WIS-596. Hadfield's Cave (13JN3) A.D. 730
 $\delta C^{13} = -26.8\text{‰}$

Charcoal from Feature 67, Sq. 124. Feature is large trash pit which originated from primary cultural zone.

1150 ± 55

WIS-597. Hadfield's Cave (13JN3) A.D. 800

Charcoal from Level 5, 22.9 to 30.5cm deep, Feature 16, Sq. 113. Sample from lowest cultural zone in site.

1395 ± 55

WIS-599. Hadfield's Cave (13JN3) A.D. 555

Charred nut shells, hickory, and walnut, from Sq. 124, Feature 65, 7.6 to 15.2cm deep. Feature was fireplace overlying Feature 67, in band of heaviest cultural activity in site.

WIS-582. A. C. Banks site, Iowa (13PM40) **5245 ± 70**
3295 B.C.

Mussel shell fragments from 335.3cm depth at A. C. Banks site, Plymouth Co., Iowa (42° 42' N Lat, 96° 37' W Long). Coll. 1967 by R. Banks and D. A. Baerreis; subm. by D. A. Baerreis. δC^{13} value of shells was -8.9% but no correction was applied to date (Vogel, 1972). Dates on charcoal from this site were previously reported, WIS-285 and -393 (R., 1969, v. 11, p. 229; 1971, v. 13, p. 476, resp.).

C. New Mexico

Ellis site (GS31)

Ellis site, 3 shelters and assoc. middens, in Eddy Co., New Mexico (32° 28' N Lat, 104° 34' W Long) excavated by Susan Riches, 1972. Pottery samples assoc. with hearth area suggest site occupation by people related to Jornada Branch of Mogollon. Subm. by D. A. Baerreis.

WIS-577. Ellis site (GS31) **815 ± 50**
A.D. 1135
 $\delta C^{13} = -26.2\%$

Charcoal 22.9cm below surface from midden area directly in front of shelter entrance of Area I, most W of shelters.

WIS-578. Ellis site (GS31) **810 ± 55**
A.D. 1140
 $\delta C^{13} = -20.9\%$

Charcoal, 45.7cm below surface, represents remains of fire hearth. Coll. from midden area in front of Shelter III, most E of shelters.

WIS-579. Roberts Rock Shelter (GS9) **1075 ± 50**
A.D. 875
 $\delta C^{13} = -21.6\%$

Excavations at Roberts rock shelter in Eddy Co., New Mexico (32° 25' N Lat, 104° 33' W Long) by Susan Riches, 1971. Charcoal coll. from test Trench A, 91.4cm below surface, from fire pit. Subm. by D. A. Baerreis.

WIS-598. Honest Injun Cave (GS3) **2930 ± 60**
980 B.C.

Sample F575, sandal fragment, 22.9cm below surface, and F704B, basket fragment, 25.4cm below surface, coll. 1970 by Susan Riches from Honest Injun Cave in Eddy Co., New Mexico (32° 22' N Lat, 104° 24' W Long). Subm. by D. A. Baerreis. Samples from concentration of cultural material ca. 9.1m from cave entrance near center of interior. Site seems preceramic and related to Hueco phase of Jornada branch of Mogollon.

D. North Dakota

Bagnell site (320L16)

Charcoal and charred wood from Bagnell site on right bank of Missouri R. in Oliver Co., North Dakota (47° 15' N Lat, 101° 0' 30"

W Long). Coll. 1971 by D. L. Lehner, Dana College, Nebraska; subm. by D. A. Baerreis.

WIS-540. Bagnell site (320L16) **380 ± 55**
A.D. 1570
 $\delta C^{13} = -27.0\%$

Cache pit, Feature 154, in house floor. Sample is charred wood included in pit fill 884cm below house floor. Pit contemporaneous with or earlier than house.

WIS-541. Bagnell site (320L16) **375 ± 50**
A.D. 1575

Charcoal from Block 70NW40-45, wall leaners at E end of superstructure.

WIS-542. Bagnell site (320L16) **260 ± 60**
A.D. 1690
 $\delta C^{13} = -27.3\%$

Charcoal from Block 65NW45, wall leaner at E end of superstructure.

E. Ohio

WIS-534. Ahlstrom site, Ohio **435 ± 60**
A.D. 1515
 $\delta C^{13} = -26.6\%$

Charcoal from Feature 2, a lens 518 to 686cm deep in round-bottomed, straight-walled storage pit in site on E bluff of Chagrin R. in Lake Co., Ohio (41° 37' 10" N Lat, 81° 17' 30" W Long). Site is middle Whittlesey occupation as large summer fishing station. Ceramics in pit similar to those of latest occupation at Reeves site 3.2km downstream; sherds similar to early Late Whittlesey horizon at South Park site also occurred as did portions of vessel of Parker Festooned pottery. Coll. June 1971 by D. S. Brose, Case Western Reserve Univ.; subm. by D. A. Baerreis.

WIS-535. Eiden site, Ohio **460 ± 55**
A.D. 1490
 $\delta C^{13} = -26.8\%$

Charcoal from Feature 4, deep storage pit filled with fire-cracked rock, animal and human bone, ash, and ceramics. Feature assoc. with circular post-mold pattern ca. 5.2m in diam., one of unknown no. of structures at large village and cemetery complex on bluffs overlooking junction of French Creek and Black R. in Lorain Co., Ohio (41° 22' 15" N Lat, 82° 7' 45" W Long). Closest affiliation of site would seem to be with late Younger tradition material in Michigan or Post-Middleport horizons in Ontario. Coll. June 1971 by D. S. Brose; subm. by D. A. Baerreis.

South Park site, Ohio

Charcoal from South Park site, Cuyahoga Co., Ohio (41° 15' 30"

N Lat, 81° 37' W Long). Coll. 1969 and 1970 by D. S. Brose; subm. by D. A. Baerreis.

WIS-537. South Park site **310 ± 50**
A.D. 1640
 $\delta C^{13} = -26.5\%$

Sample from SW half of Feature 1, bell-shaped storage pit near "longhouse." Sample represents lens of charcoal 91.4cm below last occupation surface at site. Should date terminal Whittlesey occupation in NE Ohio.

WIS-538. South Park site **380 ± 55**
A.D. 1570
 $\delta C^{13} = -26.6\%$

Sample from Feature 49, sealed shallow (70cm) flat-bottomed pit filled with animal bone and charred acorn and hickory nut shells. This feature represents terminal portion of Early horizon at site, should reflect transitional Woodland to Fort Ancient-like horizon in NE Ohio.

WIS-539. South Park site **410 ± 55**
A.D. 1540
 $\delta C^{13} = -27.1\%$

Sample represents charcoal from 3 lenses within sealed storage pit from between 76 and 134cm levels in Feature 23, round-bottomed pit containing maize and fish bone. Sample represents Intermediate horizon at site.

WIS-576. South Park site **950 ± 65**
A.D. 1000
 $\delta C^{13} = -17.4\%$

Charcoal, including *Pinus* sp. fragments and charred corn cob id. as Eastern Flint (8-10 row), id. by V. Jones, Univ. Michigan Mus. Anthropol. Sample 73.2cm deep from lower levels of small storage pit, Feature 98, in N wall of excavation Unit 430E660 on SE margin of plateau. Should date an intermittent summer agricultural occupation in NE Ohio prior to strong Ft. Ancient influences in that area.

F. South Dakota

Swanson site (39BR16)

Swanson site (43° 54' N Lat, 99° 20' W Long) is an Over-focus component excavated by W. R. Hurt, Jr., 1950 (Hurt, 1951). Dates from this site were reported earlier by Crane and Griffin (1960) and in Wisconsin X (R., 1973, v. 15, p. 236).

WIS-553. Swanson site (39BR16) **810 ± 55**
A.D. 1140
 $\delta C^{13} = -23.1\%$

Wood from Post C, House 2, 19 outer remaining rings.

WIS-554. Swanson site (39BR16) **810 ± 60**
A.D. 1140
 $\delta C^{13} = -22.9\text{‰}$

Wood from Post A, ST. T., No. 1.

WIS-551. Swanson site (39BR16) **1080 ± 65**
A.D. 870
 $\delta C^{13} = -22.2\text{‰}$

Wood from Post D, House 2, 15 outermost remaining rings.

WIS-552. Swanson site (39BR16) **1040 ± 55**
A.D. 910
 $\delta C^{13} = -22.5\text{‰}$

Wood from Post F, House 2.

Mitchell site series (39DV2)

Excavations in 1971 were supervised by R. A. Alex at Mitchell site in Davison Co., South Dakota (43° 43' N Lat, 98° 02' W Long). Other dates from this site were pub. earlier (R., 1973, v. 15, p. 235). Subm. by D. A. Baerreis.

WIS-567. Mitchell site (39DV2) **1015 ± 60**
A.D. 935
 $\delta C^{13} = -25.8\text{‰}$

Charcoal, Sample 250, from House 4, Sq. Z, 73.2cm deep.

WIS-568. Mitchell site (39DV2) **770 ± 60**
A.D. 1180
 $\delta C^{13} = -27.5\text{‰}$

Charcoal, Sample 265, from House 4, Sq. X, 97.5 to 115.8cm deep.

WIS-569. Mitchell site (39DV2) **865 ± 60**
A.D. 1085
 $\delta C^{13} = -25.0\text{‰}$

Sample 244, charcoal from ash log from E side of entrance ramp of House 4 on old soil surface. Large structural member of house roof.

WIS-570. Mitchell site (39DV2) **695 ± 55**
A.D. 1255
 $\delta C^{13} = -29.0\text{‰}$

Samples 244, 268, 265, 253, charred willow wands from burned roof. Small elements evidently rested upon large units, such as those of WIS-569. Sample from both sides of entrance ramp of House 4.

Twelve-mile Creek site (39Ht1)

Charcoal from Twelve-mile Creek site, Hutchinson Co., South Dakota (43° 27' N Lat, 97° 52' W Long). Coll. Oct. 1971 by R. A. Alex, Univ. Wisconsin-Madison; subm. by D. A. Baerreis.

WIS-536. Twelve-mile Creek site (39Ht1) **1000 ± 60**
A.D. 950
 Charcoal from Feature 2, 76.2 to 91.4cm deep.

WIS-581. Twelve-mile Creek site (39Ht1) **720 ± 60**
A.D. 1230
 $\delta C^{13} = -25.9\%$

Charcoal from Feature 4, 61 to 76.2cm deep, and from square in house pit, 76.2 to 91.4cm deep.

WIS-548. Breeden site (39ST16) **960 ± 60**
A.D. 990
 $\delta C^{13} = -23.4\%$

Wood, Sample 2087, from Feature 1, Breeden site (44° 25' N Lat, 100° 23' 33" W Long), Stanley Co., South Dakota. Coll. 1955 by R. P. Wheeler; subm. by D. A. Baerreis. Dates from this site were reported earlier by Crane and Griffin (1960) and R., 1973, v. 15, p. 235.

G. Wisconsin

Pipe site, Wisconsin (47FD10)

Charred wood from Pipe site, Fond du Lac Co., Wisconsin (43° 55' N Lat, 88° 19' W Long) coll. 1971 by G. R. Peske, Univ. Wisconsin-Milwaukee. Subm. by D. A. Baerreis. An earlier excavation of this site was reported in R., 1967, v. 9, p. 534, and the Oneota village was described by Koepler (1961).

WIS-543. Pipe site (47FD10) **745 ± 60**
A.D. 1205
 Sample from Feature 27, refuse pit.

WIS-544. Pipe site (47FD10) **690 ± 60**
A.D. 1260
 $\delta C^{13} = -26.1\%$

Charred wood from Feature 19, refuse pit.

Klug site (470z26)

Samples from Klug site, a Middle Woodland component, on R 22, E of Ozaukee Co., Wisconsin (43° 15' N Lat, 87° 56' W Long). Coll. 1971 by Howard Van Langen; subm. by D. A. Baerreis.

WIS-563. Klug site (470z26) **1540 ± 60**
A.D. 410
 Charred wood from Sq. R2, 22.9cm below surface.

WIS-585. Klug site (470z26) **1545 ± 65**
A.D. 405
 Charcoal from Sq. 26R2 and Sq. 28L5 (Sample 10).

Brogley Rock Shelter (47GT156)

Charcoal from Brogley rock shelter in Grant Co., Wisconsin (42° 45' N Lat, 90° 37' W Long) excavated by Donna Scott, Univ. Wisconsin-Madison, in 1972; subm. by D. A. Baerreis. An earlier excavation at site was reported in R., 1971, v. 13, p. 477.

- WIS-591. Brogley Rock Shelter (47GT156)** **4145 ± 65**
2195 B.C.
 $\delta C^{13} = -26.1\%$
 Charcoal from 2.24m depth, Sqs. G and N.
- WIS-590. Brogley Rock Shelter (47GT156)** **4655 ± 75**
2705 B.C.
 $\delta C^{13} = -25.8\%$
 Charcoal from Sq. G, 2.55 to 2.61m depth.
- WIS-593. Brogley Rock Shelter (47GT156)** **4785 ± 65**
2835 B.C.
 Charcoal from Feature 7, 2.85m deep.
- WIS-592. Brogley Rock Shelter (47GT156)** **4780 ± 65**
2830 B.C.
 Charcoal from Sq. H, 2.97m deep.
- WIS-600. Brogley Rock Shelter (47GT156)** **7460 ± 80**
5510 B.C.
 Charcoal from Sqs. G and M, 3.25m deep.
- Overhead site (47LC20)**
 Excavations at Overhead site, LaCrosse Co., Wisconsin (43° 46' N Lat, 91° 12' 30" W Long) directed by J. B. Stoltman, Univ. Wisconsin-Madison, in 1971; subm. by J. B. Stoltman.
- WIS-573. Overhead site (47LC20)** **440 ± 65**
A.D. 1510
 $\delta C^{13} = -23.5\%$
 Wood charcoal extracted by water screening from soil samples. Sample from fill of Feature 4, storage refuse pit within oval house. Also present in pit was bison scapula hoe and incised, shell-tempered Oneota culture ceramic vessel assignable to Orr focus.
- WIS-601. Overhead site (47LC20)** **465 ± 55**
A.D. 1485
 $\delta C^{13} = -26.1\%$
 Charcoal from Feature 2, hearth in same house as Feature 4.
- WIS-609. Crabapple Point site (47JE93)** **970 ± 55**
A.D. 980
 $\delta C^{13} = -26.7\%$
 Charcoal from Crabapple Point site in Jefferson Co., Wisconsin (42° 52' 30" N Lat, 89° 0' W Long) from excavations by Janet Spector, Univ. Wisconsin-Madison, Oct. 1972. Sample from Feature 5. Subm. by D. A. Baerreis.

II. GEOLOGIC SAMPLES

A. Iowa

- WIS-580. Mud Creek** **6310 ± 75**
4360 B.C.
 $\delta C^{13} = -26.9\%$
 Fossil wood from black silty clay 91.4cm above water level in E

bank of Mud Creek, Scott Co., Iowa (41° 40' N Lat, 90° 53' W Long). Wood from fossil sand underlying black silty clay was dated at 6220 B.P. (I-6228). Coll. May, 1972 by T. L. Kramer, subm. by R. G. Baker, both of Univ. Iowa, Iowa City.

WIS-572. Willard Cave **1605 ± 65**
A.D. 345
 $\delta C^{13} = -20.2\text{‰}$

Bones of small animals from Willard Cave, 8.3km E of Edgewood, Delaware Co., Iowa (42° 38' 15" N Lat, 91° 17' 30" W Long). Sample from Level 1. Coll. 1970 by R. E. Eshelman, Univ. Iowa; subm. by D. A. Baerreis. Other dates from Willard Cave were reported previously (R., 1973, v. 15, p. 237).

Amos Ross site (13PM47)

426cm dried pond silt coll. 1970 on Amos Ross farm in Plymouth Co., Iowa (42° 37' 30" N Lat, 96° 06' 30" W Long). Coll. and subm. by R. G. Baker and D. A. Baerreis. Previous date 220 B.C., from basswood at 377 to 383cm depth was reported previously (R., 1971, v. 13, p. 482).

WIS-556. Amos Ross site (13PM47) **2100 ± 65**
150 B.C.
Sample from 305 to 311cm depth, Level 16, Column B.

WIS-561. Amos Ross site (13PM47) **2330 ± 50**
380 B.C.
Sample from 420 to 426cm depth, Level 16, Column B.

B. Wisconsin

Richard Hollow Fan

Climatic fluctuations were studied in forest/prairie ecotone of SW Wisconsin (Knox, 1972) to relate to those established for other areas and presumed for SW Wisconsin. Samples were obtained from stream cut exposure in alluvial fan in Grant Co., Wisconsin (42° 40' N Lat, 90° 36' W Long). Coll. 1972 and subm. by J. C. Knox, Univ. Wisconsin-Madison.

WIS-574. Richard Hollow Fan **9850 ± 95**
7900 B.C.
Spruce, id. by B. F. Kukachka, Forest Products Lab., Madison, Wisconsin, 2.68m below bank top in stream-dissected alluvial fan. Sample showed much hydrolysis with no cellulose remaining, which may imply that sample was exposed to wet surface such as marsh or bog before burial.

WIS-583. Richard Hollow Fan **9760 ± 95**
7810 B.C.
Charcoal from silt layer 2m deep in alluvial fan.

WIS-584. Richard Hollow Fan **9940 ± 100**
7990 B.C.
Charcoal from layer 1.5m below surface in stream cut alluvial fan.

WIS-571. Kieler Fan**Modern**

Charcoal, maple, id. by B. F. Kukachka, from paleosol in Grant Co., Wisconsin (42° 40' N Lat, 90° 35' W Long) coll. by J. C. Knox. Charcoal underlies presettlement paleosol.

**11,510 ± 115
9560 B.C.****WIS-550. Pulaski, Wisconsin**

Wood from humic layer underlying 152.4cm Valdres clay and 30.5cm soil on inner side of recessional moraine of Green Bay lobe of Valdres ice sheet. Humic layer and underlying 91.4cm of dirty sand and gravel believed to be Two Creekan. Coll. 1971 by Frank Byrne, Univ. Wisconsin-Green Bay, during excavations on land of Homer Erickson, Pulaski, Shawano Co., Wisconsin (44° 40' N Lat, 88° 22' W Long); subm. by Frank Byrne.

*C. Northwest Territories***WIS-557. Winter Lake, N.W.T.****3980 ± 65
2030 B.C.**

Charcoal, ca. 61cm below surface, which constituted surface layer of paleo-podzol [soil]. Coll. Aug. 1971, by J. A. Larsen at Winter Lake, N.W.T. (64° 28' N Lat, 113° 06' W Long); subm. by J. A. Larsen. Conceivably dates termination of forest cover in area now predominantly tundra, and marks period of change from more moderate to more severe climate.

REFERENCES

- Anderson, A. D., 1971a, Review of Iowa River Valley Archaeology, *in*: McKusick, M. (ed.), Prehistoric Investigations: State Archeologist of Iowa pubs., no. 3, p. 1-23.
 ——— 1971b, The Late Woodland Walters site, *in*: *ibid.*, above, p. 24-52.
 Bender, M. M., Bryson, R. A., and Baerreis, D. A., 1966, University of Wisconsin radiocarbon dates II: Radiocarbon, v. 8, p. 522-533.
 ——— 1967, University of Wisconsin radiocarbon dates III: Radiocarbon, v. 9, p. 530-544.
 ——— 1969, University of Wisconsin radiocarbon dates VI: Radiocarbon, v. 11, p. 228-235.
 ——— 1970, University of Wisconsin radiocarbon dates VII: Radiocarbon, v. 12, p. 335-345.
 ——— 1971, University of Wisconsin radiocarbon dates IX: Radiocarbon, v. 13, p. 475-486.
 ——— 1973, University of Wisconsin radiocarbon dates X: Radiocarbon, v. 15, p. 229-239.
 Craig, Harmon, 1961, Mass-spectrometer analyses of radiocarbon standards: Radiocarbon, v. 3, p. 1-3.
 Crane, H. R. and Griffin, J. B., 1960, University of Michigan radiocarbon dates V: Am. Jour. Sci. Radiocarbon Supp., v. 2, p. 31-48.
 Hurt, W. R., Jr., 1951, Report of the investigation of the Swanson site, 39BR16, Brule County, South Dakota: Archaeol. Studies, Circ. no. 3, Pierre, South Dakota, 106 p.
 Knox, J. C., 1972, Valley alluviation in southwestern Wisconsin: Annals Assoc. Am. Geog., v. 62, no. 3, p. 401-410.
 Koeppler, Paul, 1961, The Pipe site: The Wisconsin Archaeologist, v. 42, no. 4, p. 174-177.
 Vogel, J. C. and Waterbolk, H. T., 1972, Groningen radiocarbon dates X: Radiocarbon, v. 14, p. 6-110.