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UNIVERSITY OF WISCONSIN RADIOCARBON DATES XIV

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Procedures and equipment of the laboratory have been described in previous date lists. 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 samples are treated with dilute 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 1σ of the counting statistics of background, sample and standard counts. Background methane is prepared from anthracite coal, 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 $-25‰$.

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I. ARCHAEOLOGIC SAMPLES

A. Kansas

Coffey site (14PO1) series

Charcoal from Coffey site, N end of Tuttle Creek Reservoir, Pottawatomie Co, Kansas (39° 33′ N, 96° 34′ W) excavated 1974 by L J Schmits, Univ Kansas, Lawrence. Site is Archaic with 5 occupation levels separated by sterile alluvium. Subm by D A Baerreis. Radiocarbon dates from previous excavations at site were reported earlier (R, 1976, v 18, p 129-130).

WIS-774. Coffey site (14PO1) **5080 ± 65 / 3130 BC**

Wood charcoal (*Ulmus, Populus* sp) from Area A, Loc 1, Zone 1, thin stratum of gray-brown silt containing charcoal, burned earth, and cultural debris. Diagnostic artifacts recovered included side-notched and corner-notched projectile points.

WIS-776. Coffey site (14PO1) **5030 ± 65 / 3080 BC**

Charcoal, Feature 28, Area B, Loc 1, Zone 1.

5070 ± 70

WIS-778. Coffey site (14PO1) **3120 BC**

Charcoal (*Celtis* sp) and mud from Loc 1, Area B, Zone 2. Zone 2 consisted of reddish brown lens of mottled silt 4 to 5cm thick. Artifacts included notched projectile point and base of stemmed projectile point.

5140 ± 65

WIS-779. Coffey site (14PO1) **3190 BC**

Charcoal (*Populus* sp, *Celtis* sp) from Loc 1, Area B, Zone 3. Zone 3 consisted of thin occupational level 5 to 10cm thick containing basin-shaped hearth and 3 circular concentrations of hearthstones.

B. Missouri

Mellor site (23CP1) series

Charcoal coll June 1972 from Mellor site at mouth of Lamine R, NW Cooper Co, Missouri (39° 00′ N, 92° 52′ W) by Marvin Kay, Illinois State Mus, Springfield, Illinois; subm by D A Baerreis. Previous dates from site were reported earlier (R, 1976, v 18, 130-131).

1595 ± 60

WIS-771. Mellor site (23CP1) **AD 355**

Charcoal, Cat nos. 203, 212, 215, from Unit B, Trench 9.

1555 ± 60

WIS-770. Mellor site (23CP1) **AD 395**

Charcoal, Catalog nos. 176, 180, 181, 185, 190, 197, from Unit C, middle portion of upper midden deposits in Trench 9.

1705 ± 60

WIS-773. Mellor site (23CP1) **AD 245**

Charcoal from Unit D, upper midden deposit in Trench 9, Cat no. 192.

1730 ± 60

WIS-772. Mellor site (23CP1) **AD 220**

Charcoal from Unit E, terminal unit of upper midden deposits in Trench 9, Cat no. 142.

Bontke Shelter site (23MD43) series

Wood charcoal from Bontke Shelter on Little Sugar Creek drainage, McDonald Co, Missouri (36° 30.47′ N, 94° 18.29′ W). Coll June 1972 under supervision of J E Cobb, Univ Arkansas; subm by D A Baerreis. Site is Late Prehistoric (Freeman, 1959, 1962; Harrington, 1960).

525 ± 60

WIS-714. Bontke shelter site (23MD43) **AD 1425**

Sample 72-625-1027 from Feature 11, Area 3, Sq 2N 4W, 0 to 55cm below datum. Assoc with Neosho phase ceramics and lithics.

565 ± 50

WIS-724. Bontke shelter site (23MD43) **AD 1385**

Sample 72-625-839 from Area 2, Sq 1.55 10W, 235x35W, 53cm below datum. Assoc with shell-tempered ceramics, triangular arrow points.

1140 ± 55

WIS-803. Bontke shelter site (23MD43) **AD 810**

Sample 72-16-425, charred nutshell and wood, from Area 1, Sq 3N 12W, Feature 1, 20 to 30cm below datum.

II. GEOLOGIC SAMPLES

A. Florida

Lake Annie site series

Lake sediment from Lake Annie, 12.4 km S of Hebring, Highlands Co, Florida (27° 12.5′ N, 81° 21′ W). Coll Feb 1971, by W A Watts, Univ Minnesota; subm by A M Swain, Univ Wisconsin-Madison. Depths indicated are below water surface.

10,410 ± 100

WIS-793. Lake Annie **8460 BC**

Gyttja from 2645 to 2650cm depth, top of *Ambrosia* pollen zone.

WIS-792. Lake Annie **>25,000**

Gyttja from 2816 to 2821cm depth, top of *Ceratiola* pollen zone.

B. Iowa

Sumner Bog series

Peat core for pollen analysis coll July 1974 from Sumner Bog, Bremer Co, Iowa (42° 52′ N, 96° 6′ W) by G R Hallbert, K Van Zant, R G Baker. Subm by G R Hallberg, Iowa Geol Survey, Iowa City, Iowa.

5520 ± 70

WIS-814. Sumner Bog **3570 BC**

Peat from 110 to 116cm sec of core.

9270 ± 90

WIS-811. Sumner Bog **7320 BC**

Peat from 125.5 to 132cm sec of core.

West Okoboji Lake site series

Core, 1168cm, coll March 1975 from Little Millers Bay, West Okoboji Lake, Dickinson Co, Iowa (43° 22′ N, 95° 11′ W) by R G Baker and K Van Zant, Univ Iowa, Iowa City. Subm by R G Baker. Core ended in till and records late- and postglacial sedimentation within lake (Dodd *et al,* 1968). Pollen diagram to be constructed from core will be useful in determining climatic changes which affected Cherokee Sewer site. Samples were very calcareous, requiring lengthy acid treatment, which thus added uncertainty to dates.

390 ± 55

WIS-825. West Okoboji Lake site **AD 1560**

Light brown organic lake sediment with snail shell and plant fragments, 60 to 70cm sec of core. Increase in Cyperaceae, decrease in *Ambrosia, Quercus* pollen peaks in abundance in pollen diagrams.

995 ± 55

WIS-827. West Okoboji Lake site **AD 955**

Light brown organic lake sediment with a few snail shells, 120 to 130cm sec. Pollen diagram shows peak in *Pinus,* increase in *Ambrosia,* decrease in Gramineae pollen.

2745 ± 60

WIS-829. West Okoboji Lake site **785 BC**

Dark brown silty gyttja, snail shells and plant fragments rare, 250 to 260cm depth in core. Increase in *Quercus* pollen, decrease in Gramineae.

3240 ± 65

WIS-828. West Okoboji Lake site **1290 BC**

Dark brown silty gyttja, a few snail shells and plant fragments, 335 to 345cm depth. Increase in *Quercus* pollen, *Ambrosia,* Gramineae, and *Salix* decrease, *Tilia* reappears in pollen diagram.

5205 ± 70

WIS-834. West Okoboji Lake site **3255 BC**

Silty dark brown gyttja, 450 to 460cm depth. Sample shows increases in *Quercus* and other arboreal pollen, increase in *Artemisia,* decrease in *Ambrosia* pollen. *Typha latifolia* pollen peaks in abundance within sample, just before peak in *Myriophyllum* pollen.

6210 ± 70

WIS-833. West Okoboji Lake site **4260 BC**

Silty gyttja, 578 to 588cm depth. Sample overlies > 1m sand and gravel and contains Compositeae pollen peak.

7730 ± 80

WIS-830. West Okoboji Lake site **5780 BC**

Brown gyttja, 740 to 750cm. Dates beginning of lowest percentages of arboreal pollen. *Quercus, Ulmus,* and *Artemisia* pollen percentages decline while *Ambrosia* increases.

9075 ± 90

WIS-832. West Okoboji Lake site **7125 BC**

Dark brown organic lake sediment from 930 to 940cm sec. Dates rapid decline in *Ulmus* pollen percentages and rise in Gramineae, *Ambrosia* and *Artemisia* abundance.

11,800 ± 110

WIS-836. West Okoboji Lake site **9850 BC**

Black, silty, organic lake sediment from 1040 to 1050cm sec. Dates rapid decline in *Picea* pollen percentages, peak in *Betula* and *Alnus* pollen, and rapid increase in *Ulnus* pollen percentages.

13,990 ± 135

WIS-835. West Okoboji Lake site **12,040 BC**

Black, silty, organic lake sediment from 1110 to 1120cm sec. Dates initial decline in *Picea* pollen percentages and rise in *Fraxinus nigra* type and *Ambrosia* pollen.

C. Minnesota

Ondris Pond series

Lake core coll March 1974 with 5cm Livingstone coring device by G L Jacobson, Univ Minnesota, from Ondris Pond, Cass Co, Minnesota (46° 21′ N, 94° 25′ W). Subm by A M Swain.

660 ± 55

WIS-799. Ondris Pond **AD 1290**

Detrital gyttja, 205 to 215cm segment of core, water depth 180cm. Segment contained beginning of Late Holocene increase in *Ambrosia* pollen and large fragments of macrophytes as well as algal detritus. Sample dated to check for possible error in age caused by carbonates in till of region.

1535 ± 60

WIS-798. Ondris Pond **AD 415**

Detrital gyttja, 260 to 268cm of core, segment contained beginning of Late Holocene increase in *Pinus* pollen. Dates migration of *Pinus* sp (primarily diploxylon) into area of calcareous outwash following mid-postglacial expansion of prairie in region.

Nelson Pond series

Lake sediment core coll Dec 1974 by G L Jacobson, E J Cushing, H E Wright, Univ Minnesota, from Nelson Pond, Pine Co, Minnesota (46° 24′ N, 92° 41′ W). Subm by A M Swain. Segments dated bracket Holocene increase in *Pinus strobus* pollen used to estimate sedimentation rate in basin during portion of Holocene (Wright & Watts, 1969).

5540 ± 70

WIS-797. Nelson Pond **3590 BC**

Algal gyttja, 1158 to 1168cm sec, occasionally banded and possibly varved. Segment 60cm above beginning of Holocene increase in *Pinus strobus* pollen.

7245 ± 75

WIS-795. Nelson Pond **5295 BC**

Algal gyttja, 1278 to 1288cm sec, 60cm below beginning of *Pinus strobus* pollen.

Billy's Lake series

Lake sediment core coll March 1974 by G L Jacobson, E J Cushing, H E Wright from Billy's Lake, Morrison Co, Minnesota (46° 16′ N, 94° 33′ W). Samples dated as part of study of migration of several forest species in Minnesota (McAndrews, 1966). Subm by A M Swain.

990 ± 55
WIS-806. Billy's Lake **AD 960**

Detrital gyttja, 220 to 230cm sec of core. Water depth at site was 180cm. Segment was below beginning of Late Holocene increase in *Ambrosia* pollen. Sample dated to check for possible error in age caused by carbonates in outwash of region.

2000 ± 55
WIS-804. Billy's Lake **50 BC**

Detrital gyttja, 295 to 305cm sec of core. Segment contained beginning of Late Holocene increase in *Pinus* pollen. Dates migration of *Pinus* species (haploxylon and diploxylon) into area of calcareous till.

Willow River Pond series

Lake core coll March 1972 by G L Jacobson from Willow River Pond, Pine Co, Minnesota (46° 18′ N, 92° 47′ W). Segments dated bracket Holocene increase in *Pinus strobus* pollen used to estimate sedimentation rate in this basin during portion of Holocene (Wright & Watts, 1969). Subm by A M Swain.

5160 ± 65
WIS-800. Willow River Pond **3210 BC**

Algal gyttja from 860 to 870cm of core.

7890 ± 80
WIS-802. Willow River Pond **5940 BC**

Algal gyttja from 980 to 990cm of core.

D. Pennsylvania

Longswamp site series

Sediment cores coll 1973 by W A Watts from lake 1km SW of Longswamp and 1.6km S of Mertztown, Berks Co, Pennsylvania (40° 29′ N, 75° 40′ W). Samples dated to show chronology of vegetational changes in area and, in particular, migration periods of dominant trees (Watts, 1975). Depths indicated were below mud surface. Subm by A M Swain.

9705 ± 100
WIS-783. Longswamp site **7755 BC**

Organic silt from 70 to 77cm depth, end of fir-jackpine pollen zone.

12,060 ± 120
WIS-782. Longswamp site **10,110 BC**

Organic silt from 150 to 155cm depth, base of fir-jackpine pollen zone.

12,540 ± 120
WIS-780. Longswamp site **10,590 BC**

Organic silt from 230 to 235cm depth, base of spruce pollen zone.

12,200 ± 110

WIS-805. Longswamp site **10,250 BC**

Gray silt from base of dwarf birch zone. Material from 2 cores used for dating.

12,095 ± 110

WIS-807. Longswamp site **10,145 BC**

Gray silt from 375 to 395cm depth, tundra zone.

Criders Pond series

Lake sediment core coll 1971 by W A Watts from Criders Pond, N of Phillamon Run, 3.2km E of Scotland, Franklin Co, Pennsylvania (39° 57.5 N, 77° 32.6′ W). Depths indicated are below water surface. Subm by A M Swain.

11,650 ± 130

WIS-788. Criders Pond **9700 BC**

Clayey detritus gyttja from 135 to 140cm depth, white pine pollen maximum.

13,260 ± 125

WIS-787. Criders Pond **11,310 BC**

Clayey silt from 400 to 410cm depth, end of spruce pollen zone.

Tannersville site series

Lake sediment core coll 1973 by W A Watts from Cranberry Bog Preserve, 3km E of Lower Tannersville, Monroe Co, Pennsylvania (41° 02′ N, 75° 16′ W). Depths indicated were below peat surface. Subm by A M Swain.

4610 ± 70

WIS-790. Tannersville site **2660 BC**

Gyttja from 525 to 530cm depth, pollen zone shows hemlock decrease.

8390 ± 85

WIS-784. Tannersville site **6440 BC**

Gyttja from 810 to 815cm depth, rise of beech pollen found in palynol study of core.

9835 ± 95

WIS-789. Tannersville site **7885 BC**

Gyttja from 1040 to 1045cm depth, rise of hemlock in pollen zone.

10,860 ± 100

WIS-791. Tannersville site **8910 BC**

Gyttja from 1140 to 1145cm depth, rise of white pine zone in pollen.

13,330 ± 120

WIS-781. Tannersville site **11,380 BC**

Silty gyttja from 1240 to 1245cm depth, end of sedge zone in pollen.

E. West Virginia

Cranberry Glades Botanical Area series

Core coll 1971 from Cranberry Glades Botanical Area, Monongahela Natl Forest, Pocahontas Co, 24km E of Richwood, West Virginia (38° 10′ N, 80° 15′ W) by W A Watts. Subm by A M Swain.

4900 ± 65

WIS-794. Cranberry Glades **2950 BC**

Peat 251 to 256cm below bog surface, pollen diagram shows decrease in hemlock.

12,185 ± 110

WIS-785. Cranberry Glades **10,235 BC**

Organic clay from 360 to 365cm below bog surface. Decrease of spruce-pine in pollen diagram.

F. Wisconsin

White Clay Lake series

Core coll Feb 1974 from White Clay Lake, Shawano Co, Wisconsin (45° 48′ N, 88° 25′ W) by James Peterson, Univ Wisconsin-Madison. Subm by A M Swain. Palynol study of core is in progress.

780 ± 50

WIS-812. White Clay Lake **AD 1170**

Light brown gyttja; 50 to 55cm sec of core, at base of *Ambrosia* rise in pollen.

1260 ± 60

WIS-775. White Clay Lake **AD 690**

Dark-brown gyttja, 120 to 138cm sec of core.

Kickapoo River System series

Upper Kickapoo River Valley was selected for continuing study of paleohydrol episodes of Driftless Area of SW Wisconsin (Knox, 1972; Knox & Johnson, 1974). Previous dates in this study were reported earlier (R, 1975, v 17, p 132-133; R, 1976, v 18, p 134-137). All samples id by R Miller, Forest Products Lab, Madison. Samples coll 1975 by W C Johnson and P W Dunwiddie; subm by W C Johnson and J C Knox, Univ Wisconsin-Madison. Sites included are Kickapoo R, Brush Creek, Upper Brush Creek, Morris Creek, and Spring Valley Creek.

5675 ± 70

WIS-801. Kickapoo River site **3725 BC**

Quercus sp, 280cm deep, buried at gravel-fine sediment contact at base of left stream bank of Kickapoo R, Monroe Co, Wisconsin (43° 50′ N, 90° 30′ W).

4380 ± 65

WIS-810. Upper Brush Creek **2430 BC**

$\delta^{13}C = -28.9‰$

Wood 210cm from top of bank stream exposure of Upper Brush Creek, Monroe Co, Wisconsin (43° 44′ N, 90° 41′ W).

WIS-813. Upper Brush Creek **5045 ± 70**
3095 BC
$\delta^{13}C = -28.5‰$

Wood from log in sandy unit ca 225cm from top of exposure, right stream bank, Monroe Co, Wisconsin (43° 44′ N, 90° 42′ W).

WIS-808. Brush Creek **2065 ± 55**
1150 BC
$\delta^{13}C = -26.2‰$

Prunus sp, log 305cm deep in sandy unit overlying gravel in right bank of Brush Creek, Vernon Co, Wisconsin (43° 44′ N, 90° 36′ W).

WIS-837. Morris Creek **3125 ± 65**
1175 BC
$\delta^{13}C = -27.5‰$

Outer 10 rings of log, *Quercus* sp, 26cm diam, partially buried at left bank of stream cut exposure of Morris Creek, Monroe Co, Wisconsin (43° 46′ N, 90° 35′ W).

WIS-831. Spring Valley Creek **1225 ± 60**
AD 725
$\delta^{13}C = -27.6‰$

Outer 5 rings of log, *Quercus* sp, 33cm diam excavated from base of left bank stream exposure on basal gravel unit of Spring Valley Creek, Monroe Co, Wisconsin (43° 48′ N, 90° 36′ W).

WIS-809. Hub City Bog site **6865 ± 175**
4915 BC

Decomposed peat with *Larix* macrofossils, id by R Miller, Forest Prods Lab, Madison, Wisconsin) from 145 to 150cm level of 3m core containing 2.6m peat over silt that grades downward into sand. Sample dates peat regeneration above trash layer of *Larix* macrofossils assumed to represent hiatus. Other dates from Hub City Bog were reported earlier (R, 1976, v 18, p 137). Coll Nov 1974 by A M Davis, Boston Univ, Boston, Massachusetts, from Hub City Bog, Richland Co, Wisconsin (43° 28′ N, 90° 21′ W). Subm by A M Davis.

WIS-786. Stiles site **9335 ± 90**
7385 BC

Bones of nearly complete skeleton of *Elephas primigenius* from 1.73 to 2.01m below surface, in clay deposit which seems to represent old lake near Lake Mills, Jefferson Co, Wisconsin (43° 6′ N, 88° 46′ W). Excavated 1974 and subm by J E Dallman, Univ Wisconsin-Madison.

G. Wyoming

subm by R G Baker. Pollen analysis of core is underway. Depths are below floating mat surface.

3070 ± 65

WIS-816. Floating Island Lake **1120 BC**

Sample FIL-A-IV, brown fibrous peat from 380 to 390cm sec of 10m core. Sample overlay zone of relatively frequent aquatic pollen and underlay increase in Cyperaceae, Gramineae and Chenopodiaceae-Amaranthaceae pollen. Event suggests change in hydrol regime for Lake.

7400 ± 85

WIS-817. Floating Island Lake **5450 BC**

Sample FIL-A-III, fibrous peat with wood fragments from 815 to 825cm sec of 10m core. Pollen zone contained small, postglacial spruce peat.

9090 ± 90

WIS-819. Floating Island Lake **7140 BC**

Sample FIL-A-II, fine-grained brown peat and very organic silty, gray-brown clay from 945 to 955cm depth of 10m core. Interval at which arboreal pollen changed from maximum spruce, low pine, to low spruce, high pine.

9225 ± 90

WIS-822. Floating Island Lake **7275 BC**

Sample FIL-A-I, gray organic silt, from 982 to 992cm depth of 10m core.

10,115 ± 95

WIS-824. Floating Island Lake **8165 BC**

Sample FIL-B-I, organic micaceous silt from 1073 to 1088cm depth of 11.5m core. Sediment represents initial deposition following retreat of Pinedale Glacier.

9890 ± 95

WIS-820. Beaver Lake, Bighorn Mts **7940 BC**

Basal organic sediment from Beaver Lake (informal name), 2560m alt in Bighorn Co, Wyoming (44° 12′ N, 107° 15′ W). Coll June 1974 by R G Baker, M R Burkart; subm by R G Baker. Sample BL-B-I, 147 to 157cm sec of 5.1cm diam core. Depth indicated is below lake bottom.

H. Northwest Territories

1020 ± 55

WIS-777. Grant Lake site **AD 930**

$\delta^{13}C = -30.4‰$

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2220 ± 60

WIS-823. Nicol Lake site, NWT **270 BC**

Basal 3cm of 41cm peat monolith overlying permafrost cobbles. Coll July 1975 by P A Kay from SW end of Nicol Lake, Mackenzie Dist, NWT, Canada (61° 35′ N, 103° 29′ W). Pollen of peat monolith is being analyzed.

3805 ± 65

WIS-826. Slow River site, NWT **1855 BC**

Basal 3cm of 39cm peat monolith overlying permafrost cobbles. Coll July 1975 by P A Kay from sedge meadow, 1km S of Slow R, 5km E of Dubawnt Lake, Keewatin Dist, NWT (63° 02′ N, 100° 45′ W).

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