

UNIVERSITY OF SASKATCHEWAN RADIOCARBON DATES X

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This series reports some of the measurements made since publication of the last list (R, 1981, v 23, p 94-135). Also included are a number of earlier dates previously withheld pending submitter evaluation. For some the authors have been unable to obtain appropriate comment. References to other publication of these dates are given where known.

Acetylene proportional gas counting methods essentially remain as described in Saskatchewan II (R, 1960, v 2, p 73). Bone dating is carried out on soluble collagen extract (Longin, 1971) since 1978.

SAMPLE DESCRIPTIONS

GEOLOGIC SAMPLES

S-224. Edmonton, Alberta **>35,000**

Mammoth tusk from basal sec of Saskatchewan Gravels overlain by Wisconsin-age till, Clover Bar Gravel Pit, Edmonton (53° 35' N, 113° 23' W). Horizon previously dated >36,000 and >38,000 yr BP (GX-210: R, 1966, v 8, p 146; GX-106: unpub). Wood from higher intertill strata near Kipp Alberta dated >54,500 yr BP (GSC-237: R, 1965, v 7, p 32) (Westgate & Bayrock, 1964; Westgate, 1965). Coll 1963 by K Swift; subm 1963 by R E Folinsbee, Univ Alberta, Edmonton.

S-226. Hazel Lake, Saskatchewan **>31,500**

Marl from 18.3m sand unit overlying Marine Shales of Upper Cretaceous age, in test hole (sec 29-42-23-W2) near Melfort (52° 39' N, 105° 17' W), from 134m depth, 3m above non-calcareous bedrock. Coll and subm 1968 by W A Meneley, Saskatoon. *Comment* (WAM): min date for alluvial sedimentation of pre-glacial Hatfield Valley in central Saskatchewan.

S-230. Medicine Hat, Alberta **9900 ± 120**

Carbonaceous deposit from highest terrace, S Saskatchewan R near Medicine Hat (50° 08' N, 110° 36' W). Min date for deglaciation of SE Alberta. Coll and subm 1964 by J A Westgate, Univ Alberta, Edmonton.

S-231. Mission Creek, British Columbia **7500 ± 300**

Wood from 30cm silt layer overlying boulder pavement and below glacial fill of gravel, till and silt beds, Mission Creek canyon (49° 51' N, 119° 19' W). Possible relation to last ice advance (Nasmith, 1962). Coll and subm 1964 by E Livingston, Dept Lands, Forests & Water Resources, Victoria.

S-446. Delta Marsh, Manitoba **2400 ± 230**

Gyttja from 104 to 108cm below water-sediment interface, Cadham

Bay, Delta Marsh (50° 11' N, 98° 17' W). Coll 1968 by T Sproule; subm 1968 by J M Walker, Univ Manitoba, Winnipeg.

Saskatoon site series, Saskatoon

Mammoth bone and tusk fragments from salvage site, sewage plant construction N of Saskatoon (52° 10' N, 106° 35' W). From sand deposit within tills of Floral Fm (Christiansen, 1968). Abundant faunal remains from seven taxa id.: Gastropod, Pelecypod, *Camelops*, *Mammuthus* (*Parelephas* sp), *Equus* (*Equies*) cf *niobrarensis*, *Bison* sp, and Cervid (Lammers, 1968). Bone fractures may indicate presence of man (Pohorecky & Wilson, 1968). Est age 18,000 to >34,000 yr BP. Coll 1968 and subm 1968, 1970 by Z S Pohorecky, Univ Saskatchewan, Saskatoon.

S-482. Tusk fragments, Units 1 and 4 **12,000 ± 320**

S-498. Same as S-482, Feature 1, Unit 5 **14,650 ± 360**

S-483. Mammoth bone **>34,200**

From ca 2.4m above S-482 position.

S-499. Skull fragments, Unit 6 **20,200 ± 500**

Mammuthus (*Parelephas*) sp.

General Comment (AAR): inconsistent dates for apparent homogeneous unit; S-482, -498 similar to other regional mammoth dates (S-232: R, 1973, v 15, p 193; S-918: R, 1979, v 21, p 72) but appear too recent for geol position. S-483 and -499 are more acceptable for Floral Fm (E A Christiansen, *pers commun*).

S-579. Hinsdale Co, Colorado **2590 ± 180**

Charcoal from buried A soil horizon, 33cm below surface, near sub-alpine-alpine transition zone, Mesa Seco, San Juan Mts, Hinsdale Co (38° 02' 30" N, 107° 14' W). *Picea* sp, probably *englemannii* indicates burn-off prior to present willow (*Salix brachycarpa*) vegetation. Coll and subm 1970 by K L Johnson, Univ Manitoba, Winnipeg. *Comment* (KLJ): timberline, once higher probably lowered to present position by fire, may date event (Johnson, 1970).

Reindeer Lake series, Manitoba

Carbonaceous secs of Reindeer Lake sediment (56° 35' N, 102° 45' W). Coll and subm 1974 by R E Hecky, Freshwater Inst, Winnipeg.

S-914. 15 to 20cm **1440 ± 100**

S-915. 65 to 70cm **4250 ± 130**

S-916. 95 to 100cm **5370 ± 130**

Precambrian Shield series, Saskatchewan

Wood, peat, gyttja, and carbonaceous silt deposit series related to Quaternary geol of Precambrian Shield, N Saskatchewan. Coll and subm

1974 to 1979 by E A Christiansen, D W Alley, and B T Schreiner, Saskatchewan Research Council.

S-949. Gytja 7310 ± 100

From base of deposit overlying sand and silt, Wheeler Creek (55° 35' N, 104° 47' W).

S-1065. Peat 5900 ± 80

From base of deposit overlying recent and glaciolacustrine silt, Deschambault Lake (54° 55' N, 103° 23' W).

S-1070. Peat 6910 ± 100

From base of frozen deposit overlying sand and silt, Mile 25, Hwy 105 (56° 37' N, 103° 36' W).

S-1223. Peat 5660 ± 70

From base of deposit overlying sandy till, Mile 100, Hwy 105 (57° 29' N, 103° 36' W).

S-1332. Peat 8340 ± 160

From cut exposure in recently drained Rabbit Lake bottom above till (58° 12' N, 103° 42' W).

S-1487. Peat 6980 ± 100

From base of deposit overlying sandy silt, Sholte Lake (57° 40' N, 109° 28' W).

S-1560. Peat 6860 ± 110

From palsa, 1.2m below surface above ground ice, Black Lake (59° 08' N, 104° 53' W).

S-1659. Peat 4690 ± 70

From base of deposit overlying sand and till, Carswell Lake shore (58° 31' N, 109° 24' W).

S-1743. Wood >34,800

From 10m below surface under till, Michael Lake (57° 52' N, 103° 55' W).

S-1744. Carbonaceous silt >35,600

From 9m below surface under till, Collins Bay (58° 17' N, 103° 37' W).

S-1746. Peat 5850 ± 70

From frozen deposit 3m below surface, Phelps Lake (59° 10' 30" N, 103° 06' 20" W).

S-2055. Woody peat 7760 ± 140

From 1.75m above deposit base overlying sand, Lake Athabasca (59° 02' N, 108° 52' W).

S-2166. Carbonaceous silt 10,270 ± 590

From 10m depth at base of eolian sand covering fluvio-lacustrine sediments, Nipawin (53° 18' N, 104° 04' W).

General Comment (BTS): significance discussed elsewhere (Schreiner, 1983a, b).

S-1046. Aujansh Volcano, British Columbia 630 ± 70

Charred wood from tree trunk buried in vertical position within older cinder cone, Aujansh Volcano site near Nass R (55° 07' N, 128° 54' W). From older of two cones. Coll and subm 1975 by V Wuorinen, Univ Victoria, Victoria. *Comment* (VM): supports evidence for at least two separate eruptions at site. See Wuorinen (1978) for discussion.

S-1222. Robson Lake, Saskatchewan 2690 ± 70

Peat overlying till, from 2.4m below surface, auger testhole Mile 70, Hwy 105 (57° 06' N, 103° 51' 45" W). Coll and subm 1976 by B T Schreiner. *Comment*: base sample till uncertain.

S-1369. Dalmeny, Saskatchewan 30,920 ± 2060

Wood from water-well borehole, in sand horizon overlain by till, 21.3m below surface (52° 18' N, 106° 43' W). Coll and subm 1977 by P Puodziunas, Saskatchewan Research Council.

Somerset Island series, Northwest Territories

Driftwood, peat, whale and walrus bone from raised beaches, Somerset I, NWT. Part of series of dates used to construct emergence curves for Cape Anne, Cunningham Inlet, Rodd Bay, and Creswell R lowland (Dyke, 1979). Initial dates for S-1381, -1386, -1388 by IN HCl pretreatment appeared anomalously young and were redated using soluble collagen extract procedure (Rutherford & Wittenberg, 1979) which yielded more acceptable results (Dyke, 1980). Other dates for driftwood and marine shells used in analyses reported elsewhere (Dyke, 1979; Lowdon & Blake, 1979). Coll and subm 1977 by A S Dyke, Geol Survey Canada, Ottawa.

Cape Anne series**S-1391. Whale vertebra 640 ± 50**

Partly embedded in raised beach 4m asl, 2km SW of Cape Anne (74° 04' 50" N, 94° 47' W).

S-1383. Whale vertebra 1460 ± 80

Partly embedded in raised beach 7.5m asl, 4km SW of Cape Anne (74° 04' N, 94° 48' 30" W).

S-1389. Whale bone 4270 ± 70

Nearly complete skeleton scattered along raised beach 18m asl, 5.5km SW of Cape Anne (74° 03' 20" N, 94° 48' 30" W).

S-1386. Whale rib 7110 ± 90

Partly embedded in raised beach 28m asl, 5km SW of Cape Anne (74° 03' 30" N, 94° 48' W). 1N HCl date: 4470 ± 90 yr BP.

S-1384. Whale bone 8010 ± 160

Almost completely embedded in raised beach 50m asl, 9km SW of Cape Anne (74° 01' 20" N, 94° 53' W).

S-1381. Whale vertebra 9590 ± 120

Embedded in raised beach 69m asl, 7.8km SSW of Cape Anne (74° 01' 50" N, 94° 48' W). 1N HCl date: 6140 ± 170 yr BP.

S-1392. Walrus bone (NMC-34510) 2420 ± 70

Nearly whole skeleton scattered on and partly embedded in gravel beach 130m asl, 9km SW of Cape Anne (74° 02' N, 94° 51' W). Also dated at 2440 ± 180 yr BP (GSC-3081: unpub). *Comment:* date is anomalously young; unrelated to uplift.

Rodd Bay series**S-1405. Whale bone 1860 ± 80**

On surface of raised beach 4.5m asl, 12km W of Rodd Bay (73° 57' 45" N, 90° 38' W).

S-1393. Whale bone 3830 ± 80

On surface of raised beach 10m asl, 11km W of Rodd Bay (73° 57' 30" N, 90° 38' W).

S-1387. Whale bone 4570 ± 90

Embedded in raised beach 14m asl, 11km W of Rodd Bay (73° 57' 15" N, 90° 38' W).

S-1375. Driftwood 5970 ± 80

From raised beach 18m asl, 7km W of Cape Admiral McClintock (74° 00' 30" N, 91° 19' W).

S-1390. Whale bone 9210 ± 120

Partly embedded in raised beach 76m asl, 10km W of Rodd Bay (73° 55' 40" N, 90° 37' 30" W).

Creswell River lowland (sealevel) series**S-1385. Whale rib 4430 ± 70**

From basal gravel unit 11m asl overlain by 2m of probable alluvial-fan gravels, detrital plant mats and beach gravels, 5km NW of Creswell R mouth (72° 57' 10" N, 90° 38' W).

S-1376. Detrital peat 4760 ± 70

From overlying alluvial-fan gravels containing whale rib (S-1385).

S-1377. Detrital peat 4280 ± 140

From below beach gravel extending to 13m asl and overlying S-1375 and -1376.

S-1382. Whale skull 4310 ± 90

Partly embedded in raised beach 22m asl, 10km NNW Creswell R mouth (72° 52' 20" N, 93° 32' W).

S-1388. Whale bone 8810 ± 100

Partly embedded in raised beach 73m asl, 9km NW Creswell R mouth (72° 51' 40" N, 93° 34' W). 1N HCl date: 5205 ± 70 yr BP.

Creswell River lowland (mudboil) series

Dates on subducted vegetal organic material from mudboil developed in 160m asl till, 10km NW Creswell R mouth (72° 52' N, 93° 37' 30" W). Dates included with other dating of mudboils (Dyke & Zoltai, 1980).

S-1378. Vegetal organics 7370 ± 150

From lowest organic layer of mudboil, 95cm below surface, probably immobilized in upper permafrost for several thousand yr.

S-1380. Vegetal organics 2140 ± 50

From 67 to 76cm below surface, overlying modern permafrost.

S-1379. Vegetal organics 1040 ± 60

From 45cm below surface.

General Comment (ASD): indicates early Holocene emergence of 8 to 11m per century with late Holocene reduced rate of 28 to 46cm per century. Mudboil edge erosion minimal.

Gilbert Glacier site series, British Columbia

Wood, *Tsuga heterophylla* and *Abies* sp (id. by S Rowe, Forintek Canada Corp, Vancouver) and organic debris from within gully cut exposure on lateral moraine, Gilbert Glacier, Bishop R, S Coast Mts (50° 54' N, 124° 10' 50" W). Should date four glacial events represented by stratigraphy. Coll 1977 and subm 1977, 1978 by J M Ryder, Min Environment, Victoria.

S-1459. Wood 2220 ± 80

From lower till, 1428m asl.

S-1460. Wood 4360 ± 80

From fluvial gravels overlying lower till, near contact at 1433m asl.

S-1461. Wood 2180 ± 80

From fluvial gravels above 2nd till and below organic layer of gravel unit, 1450m asl.

S-1572. Organic debris 2040 ± 40

From organic layer including moss and fir needles within fluvial gravel unit.

S-1462. Wood 3420 ± 70

From fluvial gravels above organic layer, 1457m asl.

General Comment (JMR): S-1460 and -1462 anomalously old overlying apparent younger sediments, probable rework of older moraines. Other dates acceptable and suggest glacier expansion with till deposition prior to 2000 yr BP.

Bridge Glacier Nunatak site series, British Columbia

Wood from Bridge Glacier nunatak, S Coast Mts (50° 49' 20" N, 123° 34' 20" W). Tree trunk and root from surface and within Ah horizon of palaeosol development on older moraine overlain by 0.1 to 1m of more recent Neoglacial deposits. Similar S British Columbia sites in 5000 to 6000 yr BP range (GSC-1993, -2027: unpub; Y-140 bis: R, 1960, v 2, p 58). Coll 1977, 1978 by B Thomson, K Drabinsky, and J M Ryder; subm 1977, 1978 by J M Ryder.

S-1463A. Wood 680 ± 50

Tree trunk on nunatak surface, 1750 asl.

S-1463B. Same as S-1463A 990 ± 70**S-1571. Wood 540 ± 50**

Tree root recovered from palaeosol.

General Comment (JMR): dates max for late Neoglacial advance of Bridge Glacier.

Bridge Glacier South sites series, British Columbia

Charcoal, charred bark, peat, and wood, *Tsuga heterophylla* (id. by S Rowe) from exposures 1km (50° 49' 50" N, 123° 29' 45" W) and 2km (50° 49' 49" N, 123° 29' 45" W) S sites, 5m NE of Bridge Glacier snout, S Coast Mts. Should provide dates for Late Pleistocene deglaciation and series of ice-marginal lakes assoc with period to Neoglacial max. Coll 1977, 1978 by B Thomson, K Drobinsky, and J M Ryder; subm 1977, 1978 by R M Ryder.

1km S site series**S-1464. Charcoal and charred bark 6590 ± 140**

From lower Late Wisconsin till underlying lacustrine silts.

S-1465. Wood 530 ± 70

From lower till overlying lacustrine silt contact, sec overlain by more recent till assoc with Neoglacial max position.

S-1467. Wood 660 ± 60

From contact of lacustrine deposits and upper till of Neoglacial max.

S-1468. Wood 690 ± 60

From contact of beach sands and lacustrine silts, lowest strandline of late Neoglacial ice-marginal lake series.

2km S site series**S-1466. Wood 380 ± 60**

From highest ice-marginal lake, upper 12cm of gravel bed overlain by 30cm of fluvial sands.

S-1569. Peat 1120 ± 40

From creek bed exposure, below 1.8m lacustrine deposit overlying thin 0.2m sand on till base.

General Comment (JMR): S-1464 indicates that lower till antedates known Neoglacial events in SW British Columbia, and that it is either early Holocene or late Wisconsin age. S-1465, -1467, and -1468 unacceptable for strat relationships of enclosing deposits. S-1466 dates growth of delta and provides min est for highest lake ponding by Bridge Glacier at late Neoglacial max; S-1569 provides max est for lake ponding.

S-1469. Mount Queen Bess, British Columbia 320 ± 100

Wood from fresh stream bank exposure 5km SE of Mount Queen Bess, S Coast Mts (51° 15' 30" N, 124° 31' W). Date should be max for most extensive late Neoglacial advance, ca 300 yr BP. Coll 1977 by K Drobinsky and J M Ryder; subm 1977 by J M Ryder.

Lower Tiedemann Glacier site series, British Columbia

Wood, *Tsuga heterophylla* and *Abies* sp (id. by S Rowe) from gully exposure on lateral moraine, N side of Tiedemann Glacier, 11km NW of Tiedemann Creek, Mosely Creek, and Homathko R confluence, S Coast Mts (51° 19' 50" N, 124° 58' 30" W). Should date morainal depositions; comparative dates 2940 ± 130, 2250 ± 130, 1270 ± 140 yr BP (GSC-938, -948, -977: R, 1971, v 13, p 300). Coll 1977 by B Thomson; subm 1977 by J M Ryder.

S-1470. Wood 3350 ± 120

From Ah horizon, palaeosol on lowest till overlain by stratified sands, ca 920m asl.

S-1471. Wood 2360 ± 60

From 25cm below contact of middle till overlying stratified sands, ca 927m asl.

S-1472. Wood 70 ± 100

From silt and sands between middle and upper tills, ca 960m asl.

General Comment (JMR): S-1470 min date for start of glacier expansion resulting in middle till deposition. S-1471 max date for subsequent glacier recession also bracketed by GSC-938 and -948 dates. S-1472 not significant.

Upper Tiedemann Glacier site series, British Columbia

Wood, *Tsuga heterophylla* and *Abies* sp (id. by S Rowe) from natural exposure of two superimposed tills in lateral moraine, N side of Tiedemann Glacier, 13km NW of Tiedemann Creek, Mosely Creek, and Ho-

mathko R confluence, S Coast Mts (51° 21' N, 125° 04' W). Coll 1977 by B Thomson; subm 1977 by J M Ryder.

S-1473. Wood 1330 ± 80

From fluvial sand between tills, 1358m asl.

S-1474. Wood 300 ± 60

From upper till, ca 1363m asl.

General Comment (JMR): S-1473 dates interval between two glacial advances with recession higher than present to allow fluvial sand deposition. S-1474 max date for deposition of upper till.

S-1475. Franklin-Dauntless Glacier Junction, British Columbia 150 ± 70

Wood, *Tsuga heterophylla* (id. by S Rowe) from gully exposure, 17km SW of Mount Waddington, S Coast Mts (51° 15' 45" N, 125° 23' 20" W). From 2.65m below top of lacustrine sands, ice-marginal lake formed by most recent Franklin Glacier moraine, drained since AD 1929. Coll 1977 by B Thomson; subm 1977 by J M Ryder. *Comment* (JMR): date not significant, more precise bot dating evidence available.

Babbage River series, Yukon

Peat from Babbage R delta, Yukon Coast. Coll and subm 1977 by D L Forbes and M Church, Univ British Columbia, Vancouver.

S-1479. Peat, low tide exposure 2780 ± 110

From base at 67cm, max depth uncertain, estuary W shore S of Niakolik (69° 14' 30" N, 138° 30' W).

S-1480. Peat, right bank exposure 3380 ± 150

From 2.6 to 2.64m below top of 2.88m organic alluvium sec, Babbage R above 2nd tributary to Deep Creek (60° 10' 30" N, 138° 18' W). Downstream site dated 1270 ± 40 yr BP (GSC-2157: unpub).

S-1481. Peat, delta plain 3080 ± 180

From 62 to 63cm below surface, stratified peat, silt, and sand sec near delta front, left bank of main channel (60° 13' N, 138° 26' W). Previous dates at nearby site 2100 ± 80 and 1380 ± 80 yr BP (GSC-2323, -2330: unpub).

General Comment (DLF): dates S-1480 and GSC-2157 from lower valley exposures provide accretion rate estimates of 0.78 and 0.63mm/yr, respectively. Deltaic deposits S-1481, -1482 considered to be in part reworked but provide min sedimentation estimates on delta plain for late Holocene developments on central Yukon Coast.

S-1485. Kennedy Lake, British Columbia 3520 ± 150

Gyttja, 32 to 40cm below water interface, main basin of Kennedy Lake, Vancouver I. (49° 04' N, 125° 30' W). Coll and subm 1978 by J G Stockner, Environment Canada, Vancouver.

S-1486. Descharine Lake, Saskatchewan 1800 ± 70

Peat overlying gravels, from base of deposit 9.8m below surface, NE of Descharine Lake (57° 08' N, 109° 05' W). Coll and subm 1978 by B T Schreiner. *Comment* (BTS): dates initial peat accumulation.

Pacific Ocean—Northwest Fjords series, British Columbia

Carbonate, wood, and shell from gravity and piston core sampling, NE Pacific Ocean and NW British Columbia fjords. Coll and subm 1978 by B D Bornhold, Pacific Geosci Centre, Sidney.

Pacific Ocean series

Carbonate from (END 77-29) core (48° 34' 14" N, 133° 56' 41" W).

S-1497. 20cm depth >35,160

S-1498. 150cm depth >29,700

S-1499. 190cm depth >28,130

S-1500. 320cm depth >28,130

S-1501. 590 to 598cm depth >35,160

Northwest Fjords series

S-1492. VEC 77-32 4060 ± 510

Wood, 37cm depth, Fisher Channel (52° 09' 36" N, 127° 51' 48" W).

S-1494. VEC 77-62 6780 ± 190

Wood, 162cm depth, Kitimat Arm (53° 56' 19" N, 128° 41' 21" W).

S-1496. VEC 77-82 1300 ± 220

Wood, 20cm depth, Douglas Channel (53° 41' 24" N, 129° 07' 24" W).

S-1490. VEC 77-100 >29,270

Shell, 42 to 47cm depth, Squally Channel (53° 06' 33" N, 129° 21' 48" W).

S-1491. VEC 77-100 4140 ± 140

Wood, 51cm depth, Squally Channel (53° 06' 33" N, 129° 21' 48" W).

S-1489. VEC 77-121 2040 ± 250

Shell, 408 to 412cm depth, Observatory Inlet (55° 13' 28" N, 129° 31' 42" W).

S-1561. VEC 78-21 370 ± 90

Wood, 143cm depth, Upper Dean Channel (52° 42' 18" N, 125° 57' 27" W).

S-1562. VEC 78-21 990 ± 70

Wood, 195cm depth, Upper Dean Channel (52° 42' 18" N, 125° 57' 27" W).

S-1563. VEC 78-30 2020 ± 70

Wood, 152cm depth, S Bentinck Arm (52° 16' 47" N, 126° 57' 27" W).

S-1564. VEC 78-117 4420 ± 190

Shell, 148cm depth, Portland Canal (55° 11' 43" N, 130° 05' 35" W).

General Comment (BDB): S-1494, -1496 discussed in pub on sedimentation of Douglas Channel and Kitimat Arm (Bornhold, 1983).

West Naniskak Lake series, Saskatchewan

Gyttja from basal sediments, W Niniskak Lake (55° 26' N, 104° 56' W). Coll and subm 1977 by M Wilson and J Terasmae, Saskatoon.

S-1502. 335 to 350cm depth 7680 ± 90**S-1503. 167 to 184cm depth 3840 ± 130****La Ronge North series, Saskatchewan**

Gyttja from basal sediments, unnamed lake 36km N of La Ronge (55° 20' N, 105° 03' W). Coll and subm 1977 by M Wilson and J Terasmae.

S-1504. 435 to 450cm depth 8060 ± 160**S-1505. 217 to 234cm depth 3270 ± 110****S-1507. Fort Smith, Northwest Territories 9830 ± 360**

Wood fragments from test hole, Fort Smith townsite (60° 01' N, 111° 53' W), from 13.4m depth in deltaic sands. Coll 1978 by T Topilka; subm 1978 by B T Schreiner.

S-1555. Cluff Lake, Saskatchewan 3680 ± 100

Peat exposure above basal till and underlying sandy till, near Cluff Lake (58° 20' N, 109° 35' W). Coll and subm 1978 by B T Schreiner.

S-1556. Forth McMurray, Alberta 6750 ± 160

Carbonaceous sediment exposure, 1.5m below surface within alluvial silt underlying clay (56° 46' N, 111° 24' W). Coll and subm 1978 by E A Christiansen, Saskatoon.

Uranium City series, Saskatchewan

Peat and gyttja from road cut exposure near Uranium City (59° 36' N, 108° 35' W). From 2m organic horizon, frozen near base. Coll and subm 1978 by B T Schreiner.

S-1557. Gyttja, 2m depth 3430 ± 100**S-1558. Peat, 3m depth 3220 ± 100**

General Comment (BTS): min date for peat accumulation.

S-1559. Cree Lake, Saskatchewan 2180 ± 70

Carbonaceous soil from Ah horizon of buried soil, Cree Lake shoreline exposure (57° 36' N, 106° 30' W). Glaciofluvial sands exhibiting two buried soil profiles capped by aeolian sands. Coll and subm 1978 by E A Christiansen.

S-1658. Carswell Lake, Saskatchewan 320 ± 40

Peat from road cut exposure, N shore Carswell Lake (58° 41' N, 109° 15' W), from between two tills, possible ice-rafted rampart. Coll and subm 1979 by B T Schreiner.

S-1565. Goat Lake, British Columbia >31,500

Wood from inter-till sand and silt road cut exposure, 150m asl, ca 4km S of Weldwood Camp, E side of Goat Lake (50° 03' 20" N, 124° 14' 18" W). Coll 1978 by K Drabinsky and J M Ryder; subm 1978 by J M Ryder. *Comment* (JMR): date indicates sand and silt unit antedates late Wisconsin Fraser Glaciation. Strat and organic matter suggests unit may be equivalent to Cowichan Head Fm (Armstrong & Clague, 1977) although elev is relatively high.

Klinakline Glacier site series, British Columbia

Wood from palaeosol, gully exposure in complex lateral moraine, W side of Klinakline Glacier, ca 4km above snout, S Coast Mts (51° 19' 20" N, 125° 49' 20" W). Coll and subm 1978 by B Thomson and J M Ryder.

S-1566. Root 400 ± 45

From palaeosol at 535m asl on 1m till overlain by late Neoglacial gravel and sands and underlain by >30m ice-contact gravels.

S-1567. Stump 900 ± 40

From outer portion buried at 400m asl in growth position by late Neoglacial till.

General Comment (JMR): separate trees destroyed by thickening glacier advance up adjacent valley slopes during late Neoglacial period; S-1567 min date for start of glacial expansion.

S-1568. Franklin-Confederation Glacier, British Columbia 840 ± 45

Wood from gully exposure, N side of Franklin Glacier near confluence with Confederation Glacier, SW of Mount Waddington, S Coast Mts (51° 16' 35" N, 125° 26' 00" W). From Ah horizon of palaeosol buried by more recent moraine deposits. Coll 1978 by B Thomson and J M Ryder; subm 1978 by B Thomson. *Comment* (BT): min date for start of Franklin Glacier expansion during late Neoglacial period.

S-1570. Bridge Glacier Bog, British Columbia 9810 ± 160

Peat from base of 4.51m bog underlain by silts, ca 5km NE of Bridge Glacier (50° 51' 30" N, 123° 26' 00" W). Late Wisconsin recession dated 9510 ± 160 yr BP (GSC-939: R, 1971, v 13, p 300) at Tiedemann Glacier. Coll and subm 1978 by J M Ryder. *Comment* (JMR): min est for late Wisconsin recession of Bridge Glacier to near present position.

S-1588. La Ronge South, Saskatchewan 10,200 ± 110

Marl from 350 to 366cm below water interface, small unnamed lake 4.5km S of La Ronge (55° 03' N, 105° 26' W). Coll and subm 1977 by M

Wilson and J Terasmae. *Comment* (MW): date ca 2500 yr too old compared to pollen and spores present; erroneous age probably due to carbonate from underlying Cretaceous bedrock.

Quesnel Lake series, British Columbia

Gyttja from basal sediments, Quesnel Lake (52° 33' N, 120° 59' W). Coll and subm 1978 by J G Stockner.

S-1616. Station 2, 35 to 44cm depth **220 ± 45**

S-1617. Station 3, 23 to 33cm depth **1610 ± 60**

General Comment (AAR): dates indicate sediment age range, separate sample sites precludes est of accumulation rate.

S-1745. Wapiyao Lake, Saskatchewan **3510 ± 50**

Peat from 70cm depth overlain by 20cm till, test pit near Wapiyao Lake (59° 33' N, 103° 52' W). Coll and subm 1979 by S McNamara, Saskatchewan Research Council.

Archibald Lake series, Saskatchewan

Carbonaceous buried soil horizons below sand dunes (59° 00' N, 108° 40' W). Present and buried soils weakly developed Eluviated Dystric Brunisols. Coll and subm 1979 by D F Acton, Agric Canada, Saskatoon.

S-1773. LH6 horizon, 40cm depth **380 ± 150**

S-1774. LH61 horizon, 75cm depth **1670 ± 150**

S-1772. LH62 horizon, 90 to 100cm depth **2820 ± 100**

General Comment (DFA): acceptable dates for dune activity of present backslope and earlier ridges.

Antler series, Saskatchewan

Carbonaceous material and snail shells from apparent buried A horizons below small upland depression of kettled hummocky morainal landform near Antler (49° 35' N, 101° 30' W). Coll and subm 1979 by W Eilers, Univ Saskatchewan, Saskatoon.

S-1801. Carbonaceous layer **11,050 ± 860**

From 147 to 161cm depth.

S-1802. Carbonaceous layer **11,310 ± 470**

From 161 to 176cm depth.

S-1803. Shells **18,140 ± 6610**

From 190 to 192cm depth.

General Comment (WE): dates relate to final deglaciation stages and early soil formation periods.

Rabbit Creek series, Saskatchewan

Carbonaceous material from auger test holes along Hwy 2, ca 32km

S of La Ronge (54° 52' 30" N, 105° 22' W). Coll and subm 1979 by B T Schreiner.

S-1809. Organic residue horizon **>33,000**

From 3m below surface at base of 2.1m silt sec.

S-1808. Carbonaceous silt **>33,000**

From 9.4m below surface at top of clayey silt sec underlying 6.4m sandy glacial till.

S-1782. Carbonaceous silt **>35,550**

From 17m below surface in silty clay sec overlying glacial till.

General Comment (BTS): samples regarded to be contaminated with coal during deposition.

S-1885. Karen Lake, Saskatchewan **3690 ± 90**

Organic matter and plant debris at 60cm depth between sandy till secs, apparent former bog area of Karen Lake (59° 07' N, 104° 23' W). Coll and subm 1980 by S Earle, Saskatchewan Mining Development Corp, Saskatoon.

Saskatoon Gowen site series, Saskatchewan

Organic clays from cut exposures and auger test holes on terrace of S Saskatchewan R, Queen Elizabeth Power Sta within Saskatoon city limits (52° 05' 45" N, 106° 42' 20" W) at loc of Gowen archaeol sites (R, 1981, v 23, p 124-125). Coll and subm 1980, 1981 by B T Schreiner.

S-2035. Organic clay **9460 ± 240**

From cut exposure, 3m depth at base of aeolian and fluvial sands overlying clay. Probable date for glacial lake drainage.

S-2183. Organic clay **8020 ± 290**

From auger test at 4.1m depth below stratified sands. Probable high water marker for adjacent river or temporary glacial lake.

S-2184. Organic clay **8930 ± 320**

From auger test at 4.3m depth below non-organic clay zone.

General Comment (BTS): dates glacial lake retreat from area.

Way Lake series, Saskatchewan

Gyttja and wood from Way Lake sediments (57° 08' N, 104° 52' W). Coll 1982 by T Donkes and E A Christiansen; subm 1982 by B T Schreiner.

S-2229. Gyttja **5180 ± 100**

From 3.5m organic layer at 2m below water interface.

S-2234. Wood **<100**

From separate loc, near top of lake bottom fluvial sand unit.

ARCHAEOLOGIC SAMPLES

S-225. Lockport, Manitoba 380 ± 80

Charcoal from floor of burial mound, E bank of Red R near Lockport (50° 05' N, 96° 56' W). Multiple mode burial mound, 1m above terrain surface and 1m deep. Coll and subm 1963 by T Fiske, Univ Manitoba, Winnipeg.

Thede site series, Ontario

Charred food remains from Bc Hi-7 site (44° 25' 30" N, 81° 22' W), Middle Woodland Saugeen focus site, ca 100 to 300 BC (GaK-2801, -2953, -2954, -2955: unpub). Coll 1969, 1970 and subm 1971 by W D Finlayson, Univ Toronto.

S-621. Charcoal 870 ± 360

From Area B, Features 519, 524, 527.

S-622. Charcoal 1480 ± 110

From Feature 1, E40N9, E45N3, and Feature 2, E36N3, E36N12.

Estuary Bison Trap site series, Saskatchewan

Charcoal from EfOk-16 site, coulee to S Saskatchewan R, W of Leader (50° 55' N, 109° 44' W). From hearths below stratified colluvial and aeolian deposits. Coll 1971 by G Adams; subm 1971 by J F V Millar, Univ Saskatchewan.

S-640. Upper occupation, 52cm depth 1070 ± 70**S-641. Lower occupation, 100cm depth 1190 ± 170****JcRw-7x site series, Northwest Territories**

Charcoal from JcRw-7x site, Fisherman Lake, 24km W of Fort Laird (60° N, 127° W). Assoc with Plains material. Coll 1971 by K Dice and J F V Millar; subm 1971 by J F V Millar.

S-643. Charcoal, 8 to 10cm depth 830 ± 150**S-642. Charcoal, 18cm depth 320 ± 90****JcRw-40 site series, Northwest Territories**

Charcoal from JcRw-40 site, Fisherman Lake (60° N, 127° W), from hearth feature. Coll 1971 by K Dice; subm 1971 by J F V Millar.

S-645. Charcoal, 10cm depth 5590 ± 980**S-644. Charcoal, 19cm depth 2470 ± 240****Pointed Mountain site series, Northwest Territories**

Charcoal and bone fragments from four-component site, JcRx-2, former shoreline 2.4km N of present Fisherman Lake shore (60° 22' N, 123° 52' W). Coll 1967, 1972 by B Johns, G Hilderman, G Federchuk, and J Dale; subm 1972, 1976 by J F V Millar.

S-695. Charcoal 2240 ± 170

From Sq 121N97W, 11cm depth, microblade horizon.

S-696. Charcoal 3990 ± 120

From Sq 142N103W, hearth above weathered till, microblade horizon.

S-697. Charcoal 2960 ± 180

From Sq 111N108W, 19 to 20cm depth, disturbed overburden, microblade horizon.

S-699. Charcoal 2820 ± 90

From Sq 0-50N0-35W, 5 to 15cm depth.

S-798. Charcoal 2150 ± 140

Composite from 5 to 10cm below base of humus, possible forest fire residue assoc with microblade horizon.

S-1255. Charcoal (NMC-907) 540 ± 120

From Component II hearth.

S-1256. Bone (NMC-908) 1640 ± 310

Assoc with Component II hearth (S-1255, S-695).

Julian site series, Northwest Territories

Charcoal and bone from five-component site, JcRw-13, Fisherman Lake (60° 22' N, 123° 52' W). Coll 1967, 1969 by L Milne and G Federchuk; subm 1973, 1974, 1976 by J F V Millar.

S-700. Charcoal 4280 ± 80

From Sq 132, 5N12W, 60cm below ash layer, top of lowermost component.

S-701. Bone 3540 ± 70

From Sq 101.5, 10N10W, assoc with lowermost component.

S-702. Bone fragments 7980 ± 140

Composite from ca 90cm below base of humus, lowermost component.

S-903. Bone 580 ± 160

From Sqs 75, 7N1W and 9, 9N1E, composite from 0 to 4cm below ash layer, Component II.

S-906. Bison bone 4720 ± 160

Composite from 68 to 85cm below ash layer, lowermost component.

S-1254. Bone 650 ± 100

Assoc with hearth feature.

Blackwater Lake site series, Northwest Territories

Charcoal and bone from K1Rk-1 site, Blackwater Lake (63° 54' N,

123° 04' W). From Test Pit 1, 1 to 25cm depth, assoc with microblades. Coll 1972 by G Hilderman; subm 1973 by J V F Millar.

S-704. Charcoal 1570 ± 60

S-705. Bone 380 ± 220

Notigi Lake site series, Manitoba

Charcoal from Notigi Lake site UNR23 (55° 54' 22" N, 99° 22' 55" W). Large stratified site containing Selkirk, Laurel, and Archaic components. Assoc with Laurel tradition dentate pottery ca AD 0 to 600 (Wright, 1967). Coll 1973 by W Wiersum; subm by O L Mallory, Univ Winnipeg.

S-744. Charcoal, Level 3 920 ± 150

S-745. Charcoal, Level 5 470 ± 170

S-746. Charcoal, Level 11 1200 ± 130

General Comment (AAR): evidence of disturbance throughout levels; S-744 and -746 acceptable for Laurel ceramics; S-745 may relate to Terminal Woodland occupation (Dickson, 1976).

Green Acres site series, British Columbia

Charcoal from EeQw-6 site, NW bank S Thompson R near mouth of Neskainlith Creek, ca 13km from Chase Bridge (50° 45' N, 119° 45' 10" W). House and cache pits, cultural material indicates Kamloops phase occupation ca AD 1250 to 1700. Coll 1972 by S Baldwin, M Friesinger, J Stewart, and S Johnson; subm 1972 by S J Fladmark, Simon Fraser Univ, Burnaby.

S-757. Housepit 9, (NMC-596) 560 ± 70

From Test Pit 4, house fill, 45cm depth.

S-758. Housepit 7, (NMC-597) 550 ± 70

From Test Pit 2, house fill, 30 to 40cm depth.

S-759. Housepit 8, (NMC-598) 860 ± 80

Composite from Test Pit 1, house floor, N sec of pit, 30 to 35cm depth.

S-760. Housepit 1, (NMC-599) 590 ± 70

From Level 5 living floor, 48cm depth; only housepit with considerable amt of native mussel shell present.

S-761. Tate site, British Columbia 1200 ± 80

Charcoal (NMC-600) from EfQu-19 site near Sorrento (50° 40' 45" N, 119° 23' 30" W). Site has ca 26 housepits; upper components indicate Kamloops occupations, lower, a pre-Kamloops component. From Housepit 1, Test Pit 3, hearth feature of 2nd component separated by 2 to 3cm sterile deposits from upper occupation. Coll 1972 by S Baldwin; subm 1972 by S J Fladmark.

S-762. Ev Qv-5 site, British Columbia 800 ± 110

Charcoal (NMC-601) from Ef Qv-5 site, E side Adams R (50° 42' 45" N, 119° 37' 10" W), six housepits; material indicates pre-Kamloops occupation but different from lower Ef Qu-19 site. Corner-notched points suggest possible Lillooet phase, ca AD 1 to 400. Coll 1972 by J Campbell and S Baldwin; subm 1972 by S J Fladmark.

Martin-Bird site series, Ontario

Charcoal from DbJm-5 site, SW point MacGillivray I., W end of Whitefish Lake, Thunder Bay (48° 13' N, 90° 02' W). Apparent seasonal multicomponent scattered Late Woodland site. Coll 1970 and subm 1971 by K C A Dawson, Lakehead Univ, Thunder Bay.

S-772. Charcoal (NMC-531), Level 1 1470 ± 120

From Area A, Sq 1, probable immediate pre-European contact.

S-773. Charcoal (NMC-532) 3480 ± 70

From Area A, Sq 5, N wall Pit 11, 33 to 38cm depth; should date first occupation period.

S-774. Charcoal (NMC-533), Level 3 180 ± 140

From Area A, Sq 9, 10 to 15cm depth, ca AD 1400.

S-775. Charcoal (NMC-534), Level 2 660 ± 70

From Area A, Sq 12, 5 to 10cm depth, ca AD 1600.

S-851. Charcoal (NMC-535), Level 3 890 ± 130

From Area A, Sq 12, S wall 30cm wide, hearth area, ca AD 1400.

S-852. Charcoal (NMC-536), Level 1 320 ± 90

From Area B, Sq 4, 0 to 5cm depth, ca AD 1450.

S-853. Charcoal (NMC-537), Level 2 1750 ± 210

From Area B, Sq 5, ca AD 1200.

S-890. Charcoal (NMC-538), Level 1 2280 ± 150

From Area B, Sq 9, copper cache pit NE quad.

S-891. Charcoal (NMC-539), Level 3 1150 ± 60

From Area B, Sq 9, 15 to 20cm depth, copper cache pit NE quad, should date fire area used in preparation of copper tools ca AD 1200.

S-892. Charcoal (NMC-540) 1320 ± 90

From Area C, hearth ash and soil surrounding burial mound ca AD 1300.

S-776. Donaldson site, Ontario 1950 ± 80

Human bone (NMC-555) from Bdhi-1 site, N side Saugeen R, ca 3.2km from mouth, Annabel Twp, Bruce Co (44° 30' 30" N, 81° 21' W), from Middle Woodland period, Saugeen focus site, ca AD 0 ± 300. Burial

assoc with copper pan pipe cover over three cut mica sheets, modified wolf maxilla, and stone ear spool. Coll 1971 and subm 1972 by W D Finlayson.

Southern Indian Lake site series, Manitoba

Charcoal and bone from S1L54 site (57° 30' N, 98° 33' W). Affiliation uncertain; ceramics and lithics prior to AD 1600. Bone (id. by G Lammers, Manitoba Mus Man and Nature, Winnipeg) evidence of bison in N Boreal forest site area. Coll 1973, 1974 by D Pokotylo and G Dickson; subm 1973 to 1975 by G Dickson, Univ Winnipeg.

S-778. Bone 980 ± 140

From 20cm below surface.

S-779. Charcoal 2700 ± 600

From 38cm below surface.

S-780. Charcoal 3170 ± 70

From 35 to 40cm below surface.

S-966. Charcoal 1010 ± 100

From Units 455 and 550, Level 2, 5 to 6cm below surface.

S-967. Charcoal 3340 ± 70

From Unit 599, Level 3, 15 to 20cm below surface.

S-968. Bone 90 ± 50

From Unit 779, Level 2, throughout hearth 10cm deep.

S-1077. Bison bone 3510 ± 90

From Test Pit 5, Level 4, 25cm below surface.

S-1078. Charcoal 240 ± 70

From Units 515 and 520, Level 2, 3 to 8cm below hearth (S-968).

General Comment (AAR): dates S-779, -780, -967, -1077 and lack of assoc ceramics confirms Archaic occupation. S-966 is earliest acceptable date for assoc with Clearwater Lake and Grass River occupation ceramics. S-778, -968, and -1078 are too recent for depth and apparent associations (Dickson, 1976).

S-781. MacBride River, Manitoba 460 ± 100

Charcoal from MacBride R site (56° 46' N, 99° 46' W). From hearth, 8cm below surface, assoc with pottery. Cultural complex to S of site dated, AD 1300 to 1700 (MacNeish, 1957; Hlady, 1971; Mayer-Oakes, 1970). Coll and subm 1973 by M Hanna, Univ Winnipeg.

Glenrose Cannery site series, British Columbia

Charcoal from DgRr-6 site, left bank S Arm Fraser R, 4km downstream from river bifurcation (49° 09' 45" N, 122° 56' W). Stratified shell midden with three main discernible stratigraphic units; Unit I possibly

intermediate between Marpole and Lacarno Beach phases; Unit II strong ties with lowest levels of St Mungo (DgRr-2) site 0.8km downriver, appears to antedate Lacarno Beach; Unit III contained artifactual material not previously observed in Fraser Delta, thought to antedate Mayne I phase ca 4000 yr BP. Coll 1972 by W Peacock, P Gose, M Bell, and T H Loy; subm 1973 by T H Loy, British Columbia Prov Mus, Victoria.

S-787. Charcoal (NMC-612) 2300 ± 70

From Unit I, Pit 3, 0.39m below surface, est age, ca 1500 yr BP.

S-790. Charcoal (NMC-615) 2340 ± 120

From Unit I, Pit 6, 0.93m below surface.

S-788. Charcoal (NMC-613) 4190 ± 110

From Unit II, Pit 2, 1.36m below surface, est age, ca 3500 to 4000 yr BP.

S-789. Charcoal (NMC-614) 4290 ± 80

From Unit II, Pit 1, 1.9m below surface.

Armstrong site series, Wisconsin

Charcoal from Armstrong site (47Pe-12), Sec 29, T23N, R14N, Pepin Co (44° 27' N, 92° 09' W). Variable representation of white and red oak, ash, elm, maple, juniper, hickory, cherry, and walnut woods (id. by L King, Royal Ontario Mus, Toronto). From fill of semisubterranean Oneota houses, ca AD 1100 to 1300. Coll 1972 and subm 1973 by W M Hurley, Univ Toronto.

S-799. House 1 840 ± 120

S-801. House 1, Feature 3 860 ± 120

S-802. House 1, Feature 5 980 ± 110

S-803. House 1, outside Feature 14 800 ± 110

S-800. House 2 830 ± 110

General Comment (AAR): for site discussion, see Hurley (1978).

Namu Midden site series, British Columbia

Charcoal and shell from EISx-1 site, large midden area, ca 6m deep near Namu (51° 51' 32" N, 127° 57' 50" W). Coll 1970 by J A Beezley and R A Luebbers; subm 1971 by R Wilmeth, Natl Mus Canada, Ottawa.

S-884. Shell (NMC-472) 3770 ± 70

From Pit 10, Level 14.

S-886. Shell (NMC-474) 3160 ± 70

From Pit 10, Level 15.

S-889. Charcoal (NMC-477) 5890 ± 90

From Pit 9, Level 4, should date sea-level change indicated by iron-bearing layer over microblade manifestation, ca 7000 yr BP.

S-887. Charcoal (NMC-475) 4370 ± 70

From Pit 9, Level 5, upper extent of microblades.

S-885. Charcoal (NMC-473) 6010 ± 80

From Pit 9, Level 8.

S-888. Charcoal (NMC-476) 3350 ± 70

From Pit 9, Level 8, intermediate microblade manifestation, ca 4000 to 7000 yr BP.

S-895. Hynes site, Quebec 2040 ± 70

Charcoal (NMC-606) from BIGf-2 site, E end Allumette I., near foot of Paquette Rapids (45° 53' 20" N, 76° 56' 20" W). From 15 to 35cm below surface hearth (Sq T3C) in 5 to 23cm cultural stratum containing Middle Woodland pottery, scrapers, flake knife, and notched projectile points including Robbins-like point. Pottery appears to have greater Hopewellian influence than most sites in Ottawa R basin. Should date sherds with exterior nodes and notched rim which has exterior dentate and interior rocker stamping, ca AD 0 to 200. Coll 1957 and subm 1973 by C C Kennedy, Ottawa.

Morrison's Island—2 site series, Quebec

Charcoal and human bone from BkGg-10 site on narrow bench between Lost Channel and Allumette Rapids, Morrison's I. (45° 48' 40" N, 77° 02' W). At least three cultural components represented in several bench sites: upper includes Iroquoian pottery and Contact trade goods; Middle Woodland; and lower Archaic. Charcoal from apparent Middle Woodland hearth containing dentate, rocker, and pseudo-scallop shell-stamped pottery fragments, partial reconstruction showed conical-shaped bottom. Human bone from red ocher burial; grave goods included 212 native copper beads, 2 large-stemmed and barbed flint projectile points, large blade (Hopewell preform) with convex sides and angular base, large blade with convex sides and angular base, and large convex-sided flint blade with rounded base. Est age, ca 1750 to 2050 yr BP. Coll 1958, 1959 and subm 1973 by C C Kennedy.

S-896. Human bone (NMC-607) 1990 ± 100**S-897. Charcoal (NMC-608) 400 ± 100****S-898. Marshall's Bay—1 site, Ontario 3280 ± 120**

Charcoal (NMC-609) from BiGb-1 site, shore of Lac des Chats, Marshall's Bay, Ottawa R (45° 26' 06" N, 76° 18' W). From hearth immediately below minor Contact materials which extended to 15cm below surface; Middle Woodland projectile points, scrapers, knives, and pottery with coil breaks and conical bottoms. Should date pottery with dentate, rocker and pseudo-scallop shell stamping, ca 500 BC to AD 200. Coll 1972 and subm 1973 by C C Kennedy.

S-899. Morrison's Island—3 site, Quebec 3800 ± 90

Charcoal (NMC-610) from BkGg-13 site, Morrison's I., Ottawa R (45° 48' 40" N, 77° 02' W). Evidence for Contact period, Middle Woodland, and Archaic occupations to 38cm below surface. Archaic material included 4 nearly complete sandstone plummets, Adena-like projectile point, side-notched point, pitted stone and numerous whetstones. Hearth, 25 to 36cm below surface, contained broken ground-slate point. Absence of Middle Woodland artifacts implies Archaic occupation, ca 2500 to 4500 yr BP. Coll 1959 and subm 1973 by C C Kennedy.

S-900. Meilleurs Bay—I site, Ontario 4370 ± 90

Charcoal (NMC-611) from CaGj-1 site, Ottawa R (46° 10' 06" N, 77° 37' 30" W), from concentration of calcined bone and broken quartz fragments, 38 to 46cm below surface. Cultural affiliation uncertain, possibly earlier than Laurentian Archaic. Artifacts included quartz stemmed point base, 2 lanceolate blades or projectile points, and scrapers of flint and quartz. Worked quartz was more common than flint. Coll 1957 and subm 1973 by C C Kennedy.

Kitandach site series, British Columbia

Charcoal from GbTo-34 site, Tsimshian Reserve, N shore Venn Passage, Prince Rupert Harbour (54° 19' 52" N, 130° 24' 56" W). Traditional winter village for Gitando tribe of Coast Tsimshian. Coll 1972 and subm 1974, 1977 by R Inglis, British Columbia Prov Mus, Victoria.

S-924. Charcoal (NMC-702) 4970 ± 100

From Sq 4, Level 12, est age, 3500 yr BP.

S-925. Charcoal (NMC-703) 620 ± 100

From Sq 5, Level 9, est age, 2000 yr BP.

S-926. Charcoal (NMC-704) 1890 ± 70

From Sq 5, Level 14, est age, 3500 to 4000 yr BP.

S-927. Charcoal (NMC-705) 4460 ± 120

From Sq 6, Level 14, basal gravels, should date earliest occupation, ca 4000 yr BP.

S-1408. Charcoal (NMC-923) 4100 ± 140

From Sq 2, Level 14.

Tulabi Falls Portage site series, Manitoba

Charcoal and charred bone from EcKt-15 site, N of Whiteshell Prov Park on Bird R near inflow to Tulabi Lake (50° 28' 55" N, 95° 15' 50" W). Multicomponent, Historic to Early Archaic or Paleo-Indian site on Tulabi Falls portage, major occupation Late Woodland Manitoba or Selkirk phase but variant ceramics to other area sites. Twelve side-notched projectile points were recovered, 8 complete points of similar size and gray chert material from hearth, Unit 16, Level E, 13cm depth. Coll 1973 by T Tottle; subm 1973 by W M Hlady, Manitoba Archaeol Soc, Winnipeg.

S-939. Charcoal (NMC-697) 1510 ± 200

S-940. Bone (NMC-698) 430 ± 100

Selkirk (Eveline St) Burial site series, Manitoba

Charcoal from EaLf-10 site, within town of Selkirk, W bank, Red R (50° 09' N, 96° 55' W), from burial of four individuals, flexed and disarticulated, under capping of limestone slabs and rocks. Cultural affiliation uncertain, ca AD 600 to 1600. Coll 1973 by T Tottle; subm 1973 by W M Hlady.

S-942. Charcoal (NMC-700) 780 ± 70

From Unit 5, Level F, 42 to 47cm depth.

S-943. Charcoal (NMC-701) 510 ± 110

From Unit 5, Level F, 51 to 53cm depth.

General Comment (AAR): for site discussion, see Saylier (1978).

S-946. Boomcamp—I site, Ontario 1590 ± 120

Human bone (NMC-391) from road construction discovery (disturbed), McNab Twp, Renfrew Co (45° 26' 18" N, 76° 19' 42" W). Red ocher burial with 2 shell gorgets, 2 slate bayonet blades, ca 25cm long, copper knife, and 21 shell disk beads. Possible Glacial Kame group of Archaic period, ca 3500 yr BP. Coll 1970 and subm 1974 by C C Kennedy.

Wapisu Lake site series, Manitoba

Charcoal and bone from UNR26 site, N Manitoba (55° 45' 33" N, 99° 08' 33" W). Lithics include concave-base projectile points, scrapers, chopper, drill, chert flakes, and Laurel pottery, ca AD 100 to 500. Coll 1974 by L Houle, D Rogosen, B Guiviak, and W Wiersum; subm 1974 by W Wiersum, Univ Winnipeg.

S-958. Bone Modern

From 92N112W and 94N112W, Level 1, 0 to 5cm below humus surface.

S-956. Charcoal 1920 ± 90

From 88N122W, Level 2, Feature 17, 8cm below surface.

S-959. Bone 1650 ± 200

From 90N122W, Level 2, 8 to 10cm below surface.

S-957. Bone 800 ± 180

From 90N122W, Level 3, Feature 11, 8 to 12cm below surface.

General Comment (AAR): primarily Initial or Middle Woodland period site with traces of Terminal Woodland occupation, also historic canoe building location. S-956 and -959 acceptable for Initial Woodland Laurel ceramic assoc; S-957 too recent, more likely Terminal Woodland period which is represented elsewhere at site (Dickson, 1976).

S-965. Southern Indian Lake, Manitoba 300 ± 170

Mammal bone from Sandhill Bay S1L 184 site (56° 59' N, 98° 39' W), from 2 to 3cm below surface at moss-clay interface. Selkirk focus ca AD 1000 to 1600. Site was burned by 1973 forest fire. Coll and subm 1974 by M E Kelly, Univ Winnipeg. *Comment* (AAR): acceptable for Clearwater Lake phase, compares favorably to other locality sites (Dickson, 1976).

Wuskwatim Lake series, Manitoba

Bone from UNR-48 site, Burntwood R (55° 30' 50" N, 98° 35' 25" W); possible date for Terminal Woodland pottery after AD 1000 (Wiersum & Tisdale, 1975). Coll 1975 by L Bruce and J Carbort; subm 1975 by G Dickson.

S-1076. Bone, Levels 1 and 2 470 ± 70**S-1080. Bone, Level 3 490 ± 90**

General Comment (AAR): tentatively accepted for Blackduck components in N Manitoba (Dickson, 1976).

S-1079. Oscar Point site, Manitoba 1140 ± 70

Moose, beaver, fish, and turtle bone fragments from PAH5 site (53° 06' 15" N, 100° 32' 37" W), from test Unit 2AW1 Terrace, assoc with Laurel ceramics, 6 to 12cm below surface. Coll 1975 by P Filteau; subm 1975 by G Dickson. *Comment* (AAR): not significantly different from other locality site dates assoc with Laurel ceramics (Dickson, 1976).

Lite site series, Ontario

Charcoal and carbonized food remains from BbGi-1 site, Lots 31 and 32, Sidney Twp, Hastings Co (44° 13' N, 77° 28' W), palisaded Iroquoian hilltop village of S Division Huron. Ceramics fit with Huron sequence at Black Creek time, ca AD 1500; included cordwrapped stick-decorated rim sherds and shape and motif types such as Huron Incised, Lawson Incised, and Lawson Opposed. Date should determine if cordwrapped stick-impressed pottery is local anomaly or related to Iroquois Oak Hill horizon (Pendergast, 1972). Coll 1967 and subm 1975 by J F Pendergast, Natl Mus Canada.

S-1133. Charcoal (NMC-231), 30 to 36cm depth 610 ± 60**S-1134. Carbonized food remains (NMC-232) 490 ± 120****Cactus Flower site series, Alberta**

Charcoal from EbOp-16 site on flood plain of S Saskatchewan R (50° 15' N, 110° 38' W), stratified campsite with ten definite occupations separated by periodic river flood alluvium. Occupations designated from latest (I) to earliest (X): I and II Pelican Lake phase, III to IX attributed to McKean complex, X undefined. Coll 1974 by L Bitz and R Freeman; subm 1975 by J Brumley, Univ Calgary.

S-1209. Occupation III 3740 ± 100

Charcoal (NMC-852) from Feature 33, shallow earth pit in XU-6, Sqs 16S6W and 18S6W. Previously dated, 3930 ± 110 yr BP (S-1013: R, 1981, v 23, p 105).

S-1210. Occupation VIII 4220 ± 130

Charcoal (NMC-853) from Feature 14, basin hearth in XU-1, Sq 4S10W. Previously dated, ca 4100 yr BP (S-782, -783, -821: R, 1975, v 17, p 351-352).

South Klondike (JcRw-3c) site series, Northwest Territories

Charcoal from S sec of JcRw-3 site extending ca 110m along old shore-line of Fisherman Lake (60° 22' N, 123° 50' W). Coll 1967 and subm 1976 by J F V Millar.

S-1217. Charcoal (NMC-257) 4790 ± 340

From Floor 12-1, assoc with one of several lower occupations, est age, 3000 yr BP.

S-1218. Charcoal (NMC-258) 5430 ± 170

From Floor 14-3, hearth feature, est age, 2000 yr BP.

Julian site series, Northwest Territories

Charcoal and bone fragments from JcRw-13 site, N shore of Fisherman Lake, ca 19km NW of Fort Laird (60° 20' N, 123° 45' W). Multi-component site from surface to lowest; Historic Slave, Spence River phase of late prehistoric Athabaskan, MacKenzie, Julian, and Cordilleran complexes. Coll 1967, 1969 by L Milne and G Federchuk; subm 1970, 1976 by J F V Millar.

S-1219. Charcoal (NMC-384) 760 ± 130

Should date Julian complex.

S-1254. Bone (NMC-905) 650 ± 100

From hearth, Sq 67, 8N1W; previously dated, 3610 ± 110 yr BP (I-3195: unpub).

Cressman site series, Ontario

Charcoal from DfJn-1 site, on sand point ca 6.4km SW mouth of Savanne R, Lacs Des Mille Indian Reserve (48° 54' N, 90° 18' W). Laurel, Blackduck, and Historic component site, from hearth, Test Pit 7. Coll and subm 1976 by M P McLeod, Lakehead Univ.

S-1246. Blackduck-Historic 440 ± 40

From ca 8cm depth.

S-1247. Blackduck 2130 ± 750

From ca 8 to 15cm depth.

S-1248. Laurel 1330 ± 190

From below 25cm depth.

General Comment (MPM): S-1246 is too early for Historic period ca AD 1700, but acceptable for Blackduck period. S-1247 is unacceptable. S-1248 is acceptable for Laurel period and compares to Laurel component for Heron Bay site: AD 610 ± 170, AD 410 ± 160, AD 790 ± 130 (GSC-208, -445, -449: R, 1969, v 11, p 22-42), AD 700 ± 60 (S-171: R, 1975, v 17, p 333), although considered too recent (Wright, 1967).

S-1249. Nyman site, Ontario 380 ± 50

Charcoal from C11f-11 site, N shore Lake Superior, 0.4km upstream from mouth of Michipicten R at Michipicten (47° 57' N, 84° 54' 30" W), from hearth feature, Level 2, Stratum 2, Sq 10W0N, ca 18cm depth. Terminal Woodland period Algonkian culture, prehistoric and historic artifacts. Coll 1971 by K C A Dawson; subm 1976 by M P McLeod. *Comment* (MPM): acceptable date (Dawson, 1978b).

S-1252. Central Klondike site, Northwest Territories 1480 ± 120

Bone (NMC-909) from JcRw-3B site, on terrace, NW corner of Fisherman Lake (60° 22' N, 123° 52' W). Stratified site with seven prehistoric components. From Component III, Sq 53, 7S6W, 10cm below surface, est age, ca 2000 yr BP. Coll 1967 by B C Gordon; subm 1976 by J F V Millar.

S-1253. South Klondike site, Northwest Territories 6550 ± 100

Bone fragments (NMC-906) from JcRw-1 site, on lowest terrace, NW corner of Fisherman Lake (60° 22' N, 123° 51' W). From Cultural Level A, Geol Unit 14, est age, 3000 to 3500 yr BP. Coll 1967 by G Federchuk; subm 1976 by J F V Millar.

S-1281. Chimi site, Yukon 6420 ± 110

Charcoal (NMC-892) from JjVi-7 site, on 5 to 6m bluff above Aishihik Lake, ca 2km NE of Aishihik Village (61° 36' 30" N, 137° 30' W). Stratified site; Aishihik phase above White R volcanic ash, Teye Lake phase with basal date, 950 ± 130 BC (GSC-940: R, 1970, v 12, p 472-485) and significantly older occupation of uncertain affiliation below ash. From lower peat deposit, excavation 0-5S25-30W, yielding animal bone and non-diagnostic artifacts of pre-Teye Lake occupation, ca 2000 to 3000 BC (Workman, 1974; 1978). Coll 1968 by K Hayaski; subm by W Workman, Univ Wisconsin.

S-1286. Skull Gulch site, California 870 ± 70

Human bone (NMC-902) from Santa Rosa I. (34° 00' 15" N, 120° 11' 40" W), right tibia from Burial II under House 7, Canalino culture (Orr, 1968). Carbonized seeds assoc with Burial 13 dated, 600 ± 70 yr BP (UCLA-102: R, 1962, v 4, p 109-114). Coll 1952 by P C Orr; subm 1977 by J S Cybulski; Natl Mus Canada.

S-1318. Camp Raynor site, Saskatchewan 1600 ± 110

Bison bone from EgNr-2 site, Lake Diefenbaker shore near Birsay (51° 02' 30" N, 107° 49' 50" W), multicomponent occupation and kill site, from 15cm below surface assoc with Avonlea points. Coll and subm 1976 by T S Phenix, Archaeol Soc, Saskatoon. *Comment* (TSP): acceptable date for Avonlea occupation.

S-1370. Renshaw site, Ontario 3420 ± 80

Charcoal from DaJi-1 site, on relic shoreline of Lake Superior, Jarvis Dist, Thunder Bay (48° 06' 21" N, 89° 21' 36" W), from small pit containing considerable chipping debris, Late Copper Archaic period. Coll and subm 1977 by M P McLeod. *Comment* (MPM): acceptable date for late Nipissing stage beach of site loc (McLeod, 1981), following Algoma stage which allegedly commenced ca 3200 yr BP (Soainisto, 1975).

Wabinoash River site series, Ontario

Charcoal from EaJf-1 site, on N shore below rapids 1km upstream from mouth of Wabinoash R (50° 03' 10" N, 88° 57' 06" W), from lower terrace of Area B, assoc with Laurel ceramics, possibly contemporaneous with Blackduck occupation also evident at site. Coll and subm 1977 by P Filteau, Lakehead Univ.

S-1394. Charcoal 160 ± 70

From Test Pit 10, 5 to 12cm below surface.

S-1395. Charcoal 470 ± 60

From Test Pit 3, 10 to 18cm below surface.

Abeki Point site series, Ontario

Charcoal from DkJc-1 site, NE shore Shakespeare I., harbor bay S of Abeki Point (49° 40' 48" N, 88° 22' 20" W). Terminal Woodland occupation site. Coll and subm 1977 by P Filteau.

S-1396. Charcoal 870 ± 110

From hearth yielding Iroquoian materials.

S-1397. Charcoal 670 ± 110

From test trench, 40cm depth, assoc with Peninsular Woodland ceramics.

King Edward Spit—West site series, Yukon

Charcoal and bone from King Edward Spit W site, ca 24km NW of Old Crow Village (67° 45' 35" N, 140° 17' 15" W). Late prehistoric Athapaskan seasonal encampment with four hearth features. Coll 1979 and subm 1980 by T D Andrews, Univ Alberta.

S-1942. Charcoal (NMC-1163) 550 ± 80

From Hearth 1, Sq S7W8.

- S-1943. Bone (NMC-1164) 800 ± 70**
From Hearth 1, Sq S7W8.
- S-1944. Charcoal (NMC-1165) 390 ± 90**
From Hearth 3, Sq S1E11.
- S-1945. Bone (NMC-1166) 180 ± 70**
From Hearth 3, Sq S1E12.
- S-1946. Charcoal (NMC-1167) 3630 ± 1070**
From Hearth 4, Sq S6W20.
- S-1947. Bone (NMC-1168) 250 ± 70**
From Hearth 4, Sq S6W20.

Nunguvik site series, Northwest Territories

Plant material, wood, and bone from PgHb-1 site, W coast of Navy Board Inlet, Bordon Peninsula, Baffin I. (73° 01' 30" N, 80° 38' W), extensive and important N Baffin I. site occupied throughout most of Dorset and Thule periods. House 73, contrary to other houses, has paved entrance passage and several stone structures of undetermined purpose. Secs previously dated in AD 400 to 860 range (S-846, -879, -1204, -1205, -1206: R, 1981, v 23, p 98-110). House 46, with early Dorset assemblage, yielded dates of 705 BC (S-672: R, 1975, v 17, p 343), AD 70, and AD 675 (S-880, -1207: R, 1981, v 23, p 99, 110); expected age, ca 300 BC. Coll and subm 1977 to 1979 by Fr G Mary-Rousselière, Catholic Miss, Pond Inlet.

- S-1443. Plant material (NMC-958), House 73 1510 ± 70**
From Sq 35, front portion of house complex, 50 to 60cm below surface.
- S-1445. Plant material (NMC-960), House 73 1770 ± 100**
From Sq 35, front portion of house complex, 65cm below surface.
- S-1444. Caribou antler (NMC-959), House 73 1860 ± 120**
From Sq 30; excavation revealed 2, possibly 3 earlier occupation levels below sterile gravel; intermediate horizon yielded bones and several artifacts including early type harpoon head, 65 to 70cm below surface.
- S-1614. Plant material (NMC-1020), House 73 1740 ± 130**
From Sq 47, SW sec of main occupation, House 73 complex, 35 to 40cm below surface.
- S-1615. Wood (NMC-1021), House 73 670 ± 50**
From Sq 40, 55cm level under large stone and at bottom of earth-filled fissure extending several meters on both sides of house complex; exhibited nail holes and assoc with similar piece in permafrost.
- S-1940. Plant material (NMC-1157), House 73 1440 ± 90**
From Sq 69, 30cm depth on pavement of structure of uncertain use, E part of house complex.

S-1941. Willow twigs (NMC-1158), House 73 1320 ± 80

From Sq 71, W portion of house complex, 45cm below surface.

S-1613. Caribou bone (NMC-1019), House 46 2320 ± 50

From assoc midden, 11m asl.

EeRj-71 site series, British Columbia

Charcoal from EeRj-71 site, Upper Hat Creek Valley (50° 46' 55" N, 121° 34' 03" W), from fire-cracked rock matrix, multicomponent earth oven (Pokotylo, 1978). Coll 1976 by S Albright, S Zacharias, S Bishop, and I Lux; subm 1977, 1979 by D Pokotylo, Univ British Columbia.

S-1453. Charcoal, oven matrix 2120 ± 70

From base of sands overlying till.

S-1642. Charcoal, oven periphery 2250 ± 50

From till 50 to 60cm below surface.

S-1454. EeRj-46 site, British Columbia 1550 ± 60

Charcoal from EeRj-46 site, Hat Creek Valley (50° 43' 55" N, 121° 36' 02" W), from sand and cobble matrix assoc with construction or use of earth oven, possibly late prehistoric Kamloops phase (Stryd, 1973). Coll 1976 by S Zacharias; subm 1977 by D Pokotylo.

S-1455. EeRj-55 site, British Columbia 1220 ± 70

Charcoal from EeRj-55 site (50° 47' 27" N, 121° 37' 10" W), from near base of cultural zone, assoc with fire-cracked rock overlying glacial till. Artifact typology suggests Middle Nesikep tradition, ca 2000 to 5000 yr BP (Sanger, 1970). Coll 1977 by W Hanson; subm 1977 by D Pokotylo.

S-1456. EeRj-101 site, British Columbia 2090 ± 70

Charcoal from EeRj-101 site (50° 46' 43" N, 121° 22' 20" W), from fire-cracked rock matrix overlying glacial till, 28 to 31cm below datum. Coll 1977 by H Lemon; subm 1977 by D Pokotylo.

S-1476. Mound Island site, Ontario Modern

Charcoal from DbJf-2 site, on island at E end of Whitefish Lake (48° 14' 36" N, 89° 58' 03" W). Site regarded as late Initial Woodland period, ca AD 600 to 800, with short occupation during Terminal Woodland period (Dawson, 1978a). From NW corner Sq 2, assoc with Laurel rim, 15cm depth. Coll 1977 and subm 1978 by M P McLeod. *Comment* (MPM): area also used by modern campers and winter ice fishermen.

S-1488. Gowen site, Saskatchewan 6070 ± 200

Burned bone from main excavation area, FaNq-25 site on terrace of S Saskatchewan R, within city limits of Saskatoon (52° 05' 45" N, 106° 42' 20" W), from 480.4m ash processing area, Early Plains Archaic affiliation, ca 6000 yr BP (Schroedl & Walker, 1978; Walker, 1980). Coll 1977 by E Walker and A R Schroedl; subm 1978 by A R Schroedl, Univ Saskatchewan.

S-1531. KeNi-4 site, Northwest Territories 2580 ± 80

Charcoal in sand (NMC-978) from KeNi-4 site, 10.4m above shoreline of Whitefish Lake, SE Mackenzie Dist (62° 46' 25" N, 106° 58' 0" W). Sandhill deposit was adjacent to caribou crossing, with five levels and several sublevels: Levels 1 to 4, Late, Middle, and Early Taltheilei traditions; Level 5, mixture of Plains and Shield Archaic. Previous dates range from 1670 BC to AD 1545 (S-1259, -1260, -1261: R, 1979, v 21, p 90 and S-1434, -1435, -1436, -1437, -1438, -1440, -1441, -1529, -1530, -1531: R, 1981, v 23, p 122-123). From Area A, off main excavation, main Level 3, Early Taltheilei over Pre-Dorset artifacts, est age, AD 500 to 500 BC. Coll 1977 by L Jackson and D Jackson; subm 1978 by B C Gordon, Natl Mus Canada.

Lake site series, Northwest Territories

Bone from KkHh-2 site on beach ridge ca 0.4km inland on Southampton I. (63° 47' 30" N, 82° 30' W), from Late Thule period, nine semisubterranean dwelling site, ca AD 1600. Coll 1977 and subm 1978 by B Clark, Natl Mus Canada.

S-1545. Bone (NMC-979), House 2 630 ± 60

From floor level at edge of sleeping platform.

S-1546. Bone (NMC-980), House 2 410 ± 60

From fill on sleeping platform.

Beinakerling site series, Iceland

Horse bone (id. by S Adalsteinsson, Agric Research Inst, Reykjavik) from inside crude stone cairn, 1 of 19 built on bedrock of gravel desert area between large glaciers, central Iceland (64° 53' 30" N, 18° 06' W). No evidence of disturbance, incomplete skeleton bone of horse and sheep found, possible offering altar. Site 1 of 4, first mentioned in area route description by Eiríkur Hafliðason to Landsnefnd (Royal Comm) at Althing in AD 1770. Route sites relocated, 1 by K Eldjarn in 1979, remaining 3 in 1977, 1978, and 1980 expeditions. Coll and subm 1978 by B Jonsson, Swan River, Manitoba.

S-1576. Meta-carpus Modern**S-1577. Femur 360 ± 40****S-1578. Femur 330 ± 40**

General Comment (BJ): S-1577 and -1578 acceptable although earlier date was expected. For Beinakerling custom pertaining to cairns and expedition accounts, see Jonsson (1978; 1979).

EeRj-1 site series, British Columbia

Charcoal from EeRj-1 site, Upper Hat Creek Valley (50° 47' 40" N, 121° 36' 30" W), from housepit and earth oven with two fire-cracked rock pavements overlying fluvial sand and gravel. Coll 1978 by R Mackie; subm 1978 by P Beirne, Univ British Columbia.

S-1579. Charcoal 970 ± 60

From oven feature, upper pavement, 29 to 38cm below surface.

S-1580. Charcoal 2030 ± 50

From oven feature, lower pavement, 110cm below surface.

S-1582. Charcoal 140 ± 50

From house pit, 20 to 25cm below surface.

S-1581. EeRj-55 site, British Columbia 600 ± 40

Charcoal from EeRj-55 site, Hat Creek Valley (50° 44' 37" N, 121° 37' 10" W), from fire-cracked rock feature, 28 to 33cm below surface. Coll 1978 by J Snell; subm 1978 by P Beirne.

Battle Creek Coulee site series, Saskatchewan

Charcoal in soil matrix from Battle Creek site, Fort Walsh Natl Historic Park, Cypress Hills (49° 39' N, 109° 55' W), from stratified hearth features. Coll 1978 and subm 1979 by J S Murray, Indian and Northern Affairs, Parks Canada, Winnipeg.

S-1626. Charcoal 3180 ± 80

From Layer 007, dark gray silts.

S-1625. Charcoal 3780 ± 50

From Layer 009, gray to brown silts.

S-1624. Charcoal 4110 ± 60

From Layer 009, same as S-1625.

General Comment (JSM): site lacked diagnostic artifacts for attributing hearth to prehistoric culture.

Augustine Burial Mound site series, New Brunswick

Charcoal from DfDI-2 site, at confluence of NW Miramichi and Little SW Miramishi R, Northumberland Co (46° 57' N, 67° 50' W). Adena-like burial mound assoc with stemmed points, quartz bifaces, textiles, copper, shell disk and columella beads (Turnbull, 1977). Coll 1975 to 1977 by D Kennlyside, M Augustine, J Augustine, C Turnbull, and A Emin; subm 1979 by C Turnbull, Univ New Brunswick, Fredericton.

S-1634. Charcoal 2630 ± 50

From pit fill near top, scattered over level, assoc with grave contents, Feature 12.

S-1635. Charcoal 2670 ± 50

From pit fill near top, assoc with local quartz bifaces, Feature 9.

S-1656. Charcoal 2350 ± 60

From pit fill, assoc with infant burial, Feature 11.

S-1657. Charcoal 2490 ± 60

From pit fill, assoc with Feature 11.

S-1655. Charcoal 2950 ± 80

From base of pit among bone fragments, interpreted as cremation remains.

Fulton Island site series, New Brunswick

Nut shells, charred nut shells, and charcoal from BLDn-12 site, Fulton I., S of Lakeville Corners, Sunbury Co (45° 54' 05" N, 66° 15' 05" W). Site of fire-cracked rock, hearths, lithic artifacts, and debitage with Middle Woodland ceramic fragments and historic material. Coll 1973, 1974 by D Burley, C J Turnbull, and B Heckbert; subm 1979 by E Foulkes, C J Turnbull and D L Keenlyside, Natl Mus Canada.

S-1639. Nut shells 2080 ± 50

From Unit 4H2, hearth Feature 40, 9.87cm depth.

S-1638. Charcoal and charred nut shells 1680 ± 70

From Unit 4F1, Feature 35, 10.13cm depth.

S-1824. Charcoal (NMC-1116) 1960 ± 70

From Unit 4F1, Feature 35, 10cm depth, assoc with ceramic sherds, lithic artifacts, calcined bone, fire-cracked rock, and possible post molds.

S-1637. Charcoal 1780 ± 40

From Unit 4G1, Feature 32, 10.13 to 10.25cm depth.

S-1825. Charcoal (NMC-1117) 1610 ± 60

From Unit 4H1, Feature 14, 10.09 to 10.38cm depth, assoc with hearth containing flakes, two cores, scraper, and possible pottery-tempering material.

S-1826. Charcoal (NMC-1118) 2660 ± 90

From Test Cut 13, 0-50N125-145E, in fine brown sand and red oxidation stain, 100 to 103cm below surface, assoc with contracting stemmed Adena-like point.

Melhagen site series, Saskatchewan

Bone material from EqNn-1 site near Elbow (51° 04' N, 106° 21' W). Buffalo kill site consisting of 4 large bone beds, 1 previously dated at 1960 ± 90 (S-491: R, 1973, v 15, p 204). Coll 1971 by D Robinson and T S Phenix; subm 1979 by T S Phenix.

S-1640. Bone, Bed 4 1910 ± 70**S-1641. Bone, Bed 3 1710 ± 50**

General Comment (AAR): acceptable date for Besant or Sonota occupation.

Oxbow site series, New Brunswick

Charcoal from CfDI-1 site, N bank of Little SW Miramishi R, W of Red Bank, Northumberland Co (46° 57' 25" N, 65° 51' 30" W). Cultural

stratified silts and sands on lower terrace, assoc with projectile points and cord-wrapped, pecked and plain pot sherds. Coll 1978, 1979 by A Emin, C Levi, H Augustine, G McAllister, W Ward, and T Tenass; subm 1979 by P Allen, Dept Hist Resources, Fredericton, and D L Keenlyside, Natl Mus Canada.

S-1654. Charcoal, datum level A/1028 to 1030 2980 ± 80

From Unit 78-10, assoc with projectile point, flakes, and sherds.

S-1651. Charcoal, datum level A/1028 to 1030 1750 ± 70

From Unit 78-10, Level 7, assoc with projectile point and pecked design pottery.

S-1636. Charcoal, datum level A/1050 to 1053 2000 ± 50

From Unit 78-11, burned area N of house structure.

S-1653. Charcoal, datum level A/1059 to 1062 2600 ± 60

From Unit 78-11, assoc with projectile point, cord-wrapped decorated and plain pottery.

S-1652. Charcoal, datum level A/1109 2120 ± 70

From Unit 78A, assoc with hearth point and dentate decorated pottery.

S-1805. Charcoal, 140cm depth 2480 ± 110

From Unit 78-12, Level 14, assoc with straight stemmed point.

S-1806. Charcoal, datum level A/1121 to 1131 2080 ± 60

From Unit 78-12, Levels 15 and 16, assoc with hearth and pottery.

S-1823. Charcoal, datum level A/1014 to 1016 1080 ± 90

From Unit 79-14, Level 6, assoc with cord-wrapped stick decorated pottery.

S-1804. Charcoal, datum level A/1037 to 1040 2060 ± 100

From Unit 79-14, assoc with straight stemmed point.

Ridley Island site series, British Columbia

Charcoal from GbTn-19 site, N end Ridley I., Prince Rupert Harbour (54° 14' 00" N, 130° 19' 42" W). Small shell midden outside of main concentration sites in harbor area, probable seasonal camp for exploiting offshore resources. Coll 1978 by J May; subm 1979 by R Inglis.

S-1668. Charcoal (NMC-1050) 2000 ± 60

From Unit 1-5S1-3W, 160 to 170cm below datum.

S-1669. Charcoal (NMC-1051) 2040 ± 50

From Unit 4-5S1-3W, 180 to 190cm below datum.

S-1670. Charcoal (NMC-1052) 1800 ± 60

From Unit 0-1N10-17E, 140 to 150cm below datum.

S-1671. Charcoal (NMC-1053) 4610 ± 60

From Unit 4.9-5.0S 0.4-0.5W, 113cm below datum.

S-1672. Charcoal (NMC-1054) 4890 ± 80

From Unit 5-7S 1.5-2.5W, 123 to 127cm below datum.

S-1673. QjLd-21 site, Northwest Territories 2210 ± 120

Muskox bone from QjLd-21 site, Karluk I., Franklin Dist (75° 30' N, 97° 16' W). Probable early Dorset site, ca 400 to 800 BC. Coll 1978 and 1979 by J W Helmer, Univ Calgary.

Wyght site series, Ontario

Charcoal and wood from BfGa-11 site, 7.5km E of Rideau Ferry on SE shore of Lower Rideau Lake, S Elmsley Twp, Leeds Co (44° 51' 00" N, 76° 08' W). Multicomponent site, predominantly Woodland Point ceramics and features, first in Rideau Lake area. Est age, AD 0 ± 500. Coll 1978, 1979 and subm 1979 by G D Watson, Ottawa.

S-1675. Charcoal (NMC-1028) 1650 ± 70

From Sq H19, Feature 1, assoc with ceramics and flat sandstone slabs.

S-1676. Charcoal (NMC-1029) 830 ± 70

From Sq J14, assoc with Woodland ceramics S of Feature 4, stone lined pit.

S-1677. Charcoal (NMC-1030) 2300 ± 60

From Feature 2, assoc with ceramics and flat sandstone slabs.

S-1678. Charcoal (NMC-1031) 940 ± 40

From Feature 6, assoc with ceramics and circular area of small stone, ash and charcoal mix; more recent appearance than other hearth features at site.

S-1679. Charcoal (NMC-1032) 1700 ± 70

From Feature 5, assoc with ceramics, flint flakes, scraper, and ash.

S-1680. Charcoal (NMC-1033) 2460 ± 70

From occupation level assoc with boiling stones but not directly with artifacts.

S-1681. Charcoal (NMC-1034) 940 ± 60

From disturbed area assoc with ceramics.

S-1841. Charcoal (NMC-1131) 7600 ± 270

From Unit H17, assoc with dentate-stamped Woodland pottery.

S-1842. Charcoal (NMC-1132) 8030 ± 1970

From small component horizontally displaced from main site, assoc with Woodland pottery and underlying light colored flakes.

S-1843. Charcoal (NMC-1133) 2530 ± 120

From Sq J16, Feature 3, assoc with pseudo-scallop shell and linearly incised Woodland pottery.

S-1844. Charcoal (NMC-1134) 3410 ± 320

From Feature 2, assoc with Woodland pottery with criss-cross trailed rims and dentate-stamped alternating right and left oblique panels separated by pairs of trailed vertical lines.

S-1845. Charcoal (NMC-1845) >33,000

From Feature 7, area of concentrated flint flakes assoc with horizontally decorated pseudo-scallop shell rim Woodland pottery.

S-1846. Charcoal (NMC-1136) 2360 ± 250

Assoc with and below Woodland dentate-stamped and criss-cross trailed pottery cluster.

S-1847. Charcoal (NMC-1137) 4500 ± 640

From Feature 8, cluster of water-rounded white quartz pebbles covering a few calcined bone fragments.

S-1848. Charcoal (NMC-1138) <100

From Feature 9, elongated area of ash and charcoal assoc with small quantity of linear and dentate-stamped Woodland pottery.

S-1849. Wood (NMC-1139) 760 ± 60

Assoc with anvil stone at occupation floor level and Woodland pottery.

S-1850. Charcoal (NMC-1140) 1020 ± 110

From Component C on 3m terrace separated from main component on lower terrace near present edge of water. Assoc with dentate-stamped Woodland pottery.

S-1851. Charcoal (NMC-1141) 620 ± 120

From Component C, assoc with dentate-stamped Woodland pottery of linearly incised rim with pronounced rolled everted form.

S-1852. Charcoal (NMC-1142) 1290 ± 250

From component C, Feature 2.

General Comment (GDW): S-1841 and -1842, from lowest levels assoc with chert flakes, indicate possibility of early Archaic or late Paleo-Indian occupation in vicinity of main excavation, placing multicomponent site habitation from 6035 BC to AD 1335. S-1845, believed to be small fragments of charcoal, strongly assoc with lithic flake concentration, suggests possible use of coal or bitumen as fire fuel or cement for attaching projectile points to shafts. Charcoals are from several hearth features or zones assoc with 23 of >100 ceramic vessels represented. Although site was only ca 15cm deep and without visible stratigraphy, significant correlation is evi-

dent between ^{14}C date and depth of charcoal recovery over range 2500 BC to AD 1120 (coefficient 0.93). Linear regression equation has permitted temporal seriation of 23 ceramic vessels in which 3 stylistically differing groups are id. (Watson, 1980; 1981).

Campbell Bay site series, Ontario

Charcoal from single component CbGw-2 site, Campbell Bay, Lake Nipissing (46° 12' 02" N, 79° 47' 30" W). Coll 1978 by M Brizinski; subm 1979 by R Wilmeth.

S-1682. Charcoal (NMC-1038) 5210 ± 90

From Sq N0E0, Feature 1, est age, AD 1600.

S-1683. Charcoal (NMC-1039) 480 ± 60

From Sq N0W4, Feature 2, est age, AD 1600.

Frank Bay site series, Ontario

Charcoal and bone from CbGw-1 site on sandy beach, Frank Bay, Nipissing (46° 12' 15" N, 79° 48' 45" W), possible Archaic to Contact period site for Nipissing area. Assoc with 6 dog burials that may relate to Feast of Dead Ceremony recorded in Jesuit Relations. Coll 1978 by M Brizinski; subm 1979, 1980 by R Wilmeth.

S-1684. Charcoal (NMC-1040) 1390 ± 40

From 10-R55, Level 17, may date poorly defined Laurel stratum.

S-1685. Charcoal (NMC-1041) 1000 ± 50

From 10-R60, Stratum 1.

S-1686. Charcoal (NMC-1042) 900 ± 60

From 10-R55, Stratum 1.

S-1687. Charcoal (NMC-1043) 890 ± 70

From 10-R60, Stratum 1.

S-1949. Bone (NMC-1169), Dog Burial 1 690 ± 170

From 10-RSS, Level 9.

S-1950. Bone (NMC-1170), Dog Burial 3 990 ± 170

From 10-R60, Level 8.

S-1688. Frank Ridley site, Ontario 990 ± 40

Charcoal (NMC-1044) from Frank Ridley site, Frank Bay, Lake Nipissing (46° 11' 52" N, 79° 48' 43" W), from Sq N0E4, Level 5, stratified site with components dating to Terminal Woodland-Contact period. Coll 1978 by M Brizinski; subm 1979 by R Wilmeth.

Ketchel Island site series, Ontario

Clam shell and fish bone from BbHj-2 site, Lot 54 Con 9, Sec A, Kincardine Twp, Bruce Co (44° 15' 20" N, 81° 35' 30" W), stratified Archaic site (Wright, 1972). Shell and bone sample comparison to previous char-

coal dates relative to variability of ^{14}C dates derived from different organic materials. Coll 1969, 1970; subm 1979 by J V Wright, Natl Mus Canada.

S-1707. Clam shell (NMC-1057) 4080 $\pm$ 60

From adjacent units, Test Sec II and Sq A, both Stratum II. Charcoal dated, 2888 $\pm$ 45 yr BP (BGS-34; unpub).

S-1708. Clam shell (NMC-1058) 4210 $\pm$ 60

From adjacent Sqs E and F, both Stratum III. Charcoal dated, 3040 $\pm$ 40 yr BP (BGS-37; unpub).

S-1709. Fish bone (NMC-1059) 3130 $\pm$ 50

From adjacent Sqs E and F, both Stratum V. Charcoal dated, 3690 $\pm$ 45 yr BP (BGS-35; unpub).

Nodwell site series, Ontario

Mammal and fish bone, clam shell, and carbonized corn from BcHi-3 site, N edge of town of Port Elgin, Saugeen Twp, Bruce Co (44° 26' 20" N, 81° 23' 30" W), mid-14th century Huron-Petun single component village site (Wright, 1974). Comparison of different sp and classes of organic materials relative to charcoal date 610 $\pm$ 75 yr BP (S-503: R, 1973, v 15, p 205) in order to assess variability. Coll 1971 and subm 1971, 1979 by J V Wright.

S-1710. Immature bear bone (NMC-1060) 710 $\pm$ 40

From House 8, Unit 69, Feature 77.

S-1711. Mature bear bone (NMC-1061) 920 $\pm$ 70

From House 8, Unit 62, Feature 82.

S-1712. Deer bone (NMC-1062) 800 $\pm$ 40

From House 8, Units 53, 63, and 89, Features 536, 487, and 153, respectively.

S-1713. Fish bone (NMC-1063) 1460 $\pm$ 50

From House 8 composite sample.

S-1714. Beaver bone (NMC-1064) 900 $\pm$ 40

From House 8, Units 53, 88, and 89, Features 558, 73, 150, and 155, respectively.

S-1715. Clam shell (NMC-1065) 1850 $\pm$ 50

From House 8, composite sample.

S-1716. Carbonized bone (NMC-1066) 2700 $\pm$ 70

From House 8, composite sample.

S-1717. Deer bone (NMC-1067) 780 $\pm$ 120

From House 7, Tr 3, Units G, D, and E, Features 1035, 1081, and 1104, respectively.

S-1718. Fish bone (NMC-1068) 910 ± 110

From House 7, composite sample.

S-1719. Carbonized corn (NMC-1069) 90 ± 50

From House 7, composite sample.

S-1720. Carbonized corn (NMC-1070) 790 ± 60

From House 10, composite sample.

S-1737. Gore Creek site, British Columbia 8250 ± 120

Human bone (NMC-1085) from EeQw-48 site, on N side of S Thompson R, across from Pritchard Village, 40km E of Kamloops (50° 41' 45" N, 120° 49' 30" W). Right humerus, partial wash-out exposure in fine aeolian silt and compacted glacio-lacustrine deposits below Mazama Ash lens, no assoc artifacts or features. Coll 1975 by British Columbia Archaeol Advisory Board; subm 1979 by J S Cybulski.

Aboriginal Watercraft Project series, Eastern Canada

Wood from dugout canoes from various loci in E Canada; part of series related to design and period of use. Subm 1980 by G F MacDonald, Natl Mus Canada.

S-1742. Wood (NMC-1090) 220 ± 50

Recovered 1976 without written or photographic record from St Lawrence R bank near Coughnawaga Indian Reserve, Quebec.

S-1827. Wood (NMC-1119) 310 ± 50

Recovered from Lake Missinaibi area near Timmins, Ontario, subm to L Alexander, Timmins Mus.

S-2030. Wood (NMC-1175) 330 ± 80

Recovered 1980 by C Hett, from Lac à l'Eau Claire in passage between mouth of Rivière du Loups and Tombeau I., Quebec.

Sjovold site series, Saskatchewan

Bison bone and hearth soil fill from EiNs-4 site, on bench, N edge of Suicide Coulee Creek, at junction with S Saskatchewan R (51° 25' 09" N, 107° 05' 25" W). Small habitation site of at least 21 buried components to depth of 4.1m below datum. Coll and subm 1979 by I G Dyck, Saskatchewan Nat Hist Mus, Regina.

S-1757. Bison bone (NMC-1102), Layer I 580 ± 190

From Units 0N0W, 0N2W, and 0N4W at 0.5m below datum.

S-1758. Bison bone (NMC-1103), Layer II 730 ± 190

From Units 0N0W, 0N2W, and 0N4W at 0.62m below datum.

S-1759. Bison bone (NMC-1104), Layer IIIb 950 ± 190

From Units 0N0W, 0N2W, and 0N4W at 0.75m below datum.

S-1760. Bison bone (NMC-1105), Layer IV 1320 ± 190

From Units 0N0W, 0N2W, and 0N4W at 0.94m below datum.

S-1761. Bison bone (NMC-1106), Layer V 1340 ± 190

From Units 0N0W, 0N2W, and 0N4W at 1.02m and 1.04m to 1.15m below datum, assoc with late form of side-notched point with convex base.

S-1762. Bison bone (NMC-1107), Layer VIa 1380 ± 200

From Units 0N0W, 0N2W, and 0N4W at 1.17m below datum, assoc with Avonlea materials, including ceramics.

S-1763. Bison bone (NMC-1108), Layer VIc 1380 ± 190

From Units 0N0W, 0N2W, and 0N4W at 1.25m below datum.

S-1764. Bison bone (NMC-1109), Layer VIIa 1630 ± 200

From Units 0N0W, 0N2W, and 0N4W at 1.38m below datum; possible Avonlea complex through Layer VII horizons.

S-1765. Bison bone (NMC-1110), Layer VIIb 1860 ± 200

From Units 0N0W, 0N2W, and 0N4W at 1.44m below datum.

**S-1766. Carbonaceous soil (NMC-1111), 2710 ± 200
Layer VIIc**

From hearth fill within and below Layer VII.

S-1807. McCallum site, Saskatchewan 210 ± 100

Charred bone (NMC-1145) from GkNp-2 site, on Churchill R at entrance to Snake Rapids channel which joins Sandy Lake to McDonald Bay of Pinehouse Lake (55° 44' 15" N, 106° 34' 09" W), from hearth, 4.5 to 8.5cm below surface of humus and peat layer, SW edge, Sq 18SOE and NW edge, Sq 19SOE. Test excavation yielded Oxbow-type projectile point, Winnipeg Fabric-impressed potsherds and native copper projectile points. Should date pottery of Clearwater Lake phase, ca AD 1600. Coll and subm 1979 by D Meyer, Saskatchewan Research Council. *Comment* (DM): reasonable date, congruent with other Clearwater Lake phase dates for N Saskatchewan.

Nakwantlun site series, British Columbia

Charcoal from FdSi-11 site, E bank of Dean R at Natsedeelya Crossing just below outlet of Lower Anahim Lake (52° 31' 05" N, 125° 22' 15" W). Multicomponent site. Coll 1979, 1980 by R Cohen, F Wilmeth, and R Wilmeth; subm 1979, 1980 by R Wilmeth.

S-1811. Charcoal (NMC-1091), House 11 2500 ± 120

From top upper floor level, probably latest occupation.

S-1995. Charcoal (NMC-1176), House 11 1290 ± 60

From upper floor level, NE quad, E582 S231, 8cm below datum.

S-1812. Charcoal (NMC-1092), House 11 980 ± 60

From lower floor W of hearth, probably earliest occupation.

S-1996. Charcoal (NMC-1177), House 11 1190 ± 160

From lower floor level, NE quad, E510S135, 89cm below datum.

S-1813. Charcoal (NMC-1093), House 11 1210 ± 60

From lowest part of hearth, probably earliest of 2 or 3 occupations.

S-1999. Charcoal (NMC-1180), House 11 480 ± 70

From 18cm below lower floor, NE quad, E708N69, 115cm below datum.

S-1998. Charcoal (NMC-1179), Pit 12 1600 ± 80

From E422S583, 31.5cm below House 11 floor, 117cm below datum.

S-2000. Charcoal (NMC-1181), Pit 12 1840 ± 280

From E455S583, 47cm below surface, 113cm below datum.

S-2001. Charcoal (NMC-1182), Pit 12 1520 ± 160

From E435S598, 52cm below surface, 118cm below datum.

Gordon Island North site series, Ontario

Charcoal from BbGa-2 site, on N end of Gordon I. in Thousand I. Group, near Ganonoque, St Lawrence River (44° 19' 59" N, 76° 16' 10" W), stratified site containing features in 1500 BC to historic time range, main occupation Point Peninsula culture, 700 BC to AD 700. Coll 1979 by J MacDonald, P Kersey, J Ravenhurst, and J V Wright; subm 1979 by J V Wright.

S-1814. Charcoal (NMC-1094) 2860 ± 60

From Tr 1, Sq 8, Feature 10, 17cm depth, assoc with late Point Peninsula pottery.

S-1821. Charcoal (NMC-1101) 1870 ± 270

From Tr 1, Sq 9, 50N77E, 15cm depth, bottom of Level 3.

S-1815. Charcoal (NMC-1095) 220 ± 60

From Tr 2, Sq 4, 5 to 10cm depth, Level 2 assoc with textile-impressed pottery.

S-1816. Charcoal (NMC-1096) 4460 ± 70

From Tr 2, Sq 9, 15 to 20cm depth.

S-1820. Charcoal (NMC-1100) 770 ± 70

From Tr 2, Sq 6, 5 to 10cm depth.

S-1817. Charcoal (NMC-1097) 290 ± 50

From Tr 3, Sq 1, 11 to 15cm depth.

S-1818. Charcoal (NMC-1098) 240 ± 60

From Tr 3, Sq 1, 5 to 10cm depth.

S-1819. Charcoal (NMC-1099) 430 ± 50

From Tr 3, Sq 1, 5 to 10cm depth.

S-1822. Schaeffer site, Ontario 480 ± 50

Human bone (NMC-1114) from Pelee I. No. 4 site, Pelee I., Essex Co (41° 45' 30" N, 82° 38' W). Single component burial mound assoc with cultural material similar to late Hopewellian manifestation at McGraw site in S Ohio, ca AD 200 to 500. From 30cm below surface, upper zone, plow-disturbed but burial context reliable. Previously dated, 450 ± 55 yr BP (S-972: R, 1979, v 21, p 76). Coll 1969 and subm 1979 by D L Keenlyside.

Rat Indian Creek site series, Yukon

Charcoal from MjVg-1 site, on bank of Porcupine R, ca 75m upstream from mouth of Rat Indian Creek (67° 35' N, 138° 20' W). Stratified site on alluvial terrace; six cultural levels recognized, uppermost Level 1, historic. Lower prehistoric levels yielded assemblage similar to Klo-kut site (Morlan, 1973). Coll 1977, 1978 by S Greer, R Gotthardt, and R LeBlanc; subm 1979 by R LeBlanc and J Cinq-Mars, Natl Mus Canada.

S-1830. Charcoal (NMC-1122), Level 2 1160 ± 100

From hearth, Unit S1W15, Feature 1.

S-1828. Charcoal (NMC-1120), Level 3 770 ± 110

From hearth, Units N2W6 and N3W6, Feature 1.

S-1829. Charcoal (NMC-1121), Level 3 570 ± 70

From hearth, Unit N2W13, Feature 3.

S-1831. Charcoal (NMC-1123), Level 6B 2430 ± 60

From small hearth, Unit N4W5, Feature 2, lowest cultural level at site.

Old Chief site series, Yukon

Charcoal from JjVk-7 site, on high terrace ca 275m asl, along bank of Porcupine R, ca 3km upstream from Klo-kut site and ca 12.5km upstream from Old Crow Village (67° 54' N, 139° 41' W). Site extends over ca 4km segment of terrace, characterized by thin stratigraphy containing three main levels and series of ground caches and subterranean house structures. Materials recovered represent early contact transitional artifacts, late prehistoric Athapaskan assemblage, and earlier components, including microblade-bearing horizon. Coll by R Gotthardt and S Greer; subm 1979 by J Cinq-Mars.

S-1832. Charcoal (NMC-1124) 1690 ± 80

From Unit N7W1, Feature 1, shallow hearth assoc with microblades, stratigraphically under portion of Housepit I lip.

S-1833. Charcoal (NMC-1125) 1620 ± 110

From Unit N5W1, composite from hearth lying on upper floor zone of Housepit I.

Dog Creek site series, Yukon

Charcoal from NcVi-3 site, on prominent bedrock ridge above Black Fox Creek, ca 3.5km downstream from mouth of Dog Creek (68° 22' N, 138° 52' W). Site consists of series of surficial and buried cultural deposits on several knolls. Recovered lithic material representative of various cultural complexes spanning lengthy period, possibly late Pleistocene to mid- or recent Holocene. Cultural affiliation of most prominent assemblage, characterized by burin and bifacial technology, uncertain. Coll 1978 by J Dale and J Cinq-Mars; subm 1979 by J Cinq-Mars.

S-1834. Charcoal (NMC-1126) 2260 ± 130

Composite from hearth zone, Test Pits L and M, Landing Knoll site sec.

S-1835. Charcoal (NMC-1127) 1750 ± 70

Composite from hearth area, Test Pit 2, in S portion of Mid-ridge.

Inukjuak River 3 site series, Quebec

Charcoal from IcGm-4 site, on land rise ca 70m from Inukjuak R, E Hudson Bay (58° 27' 50" N, 78° 05' 25" W). Site on level ground with occupation indicated by some stones and slabs. Evidence for five hearths assoc with apparent Dorset artifacts. Coll 1979 by H Oweetaluktuk, J Epoo, and D Weetaluktuk; subm 1979 by D Weetaluktuk, Makivik Corp, Montreal.

S-1836. Charcoal (NMC-1128) 1850 ± 120

From Unit E-1, 7cm below surface assoc with chert flakes and soap-stone lamp fragment.

S-1837. Charcoal (NMC-1129) 7470 ± 970

From Unit F-1, 4 to 7cm below surface, Hearth 3 in general area.

S-1838. Charcoal (NMC-1130) 2020 ± 230

From Unit E-1, 3 to 5cm below surface, cluster apart from stone and slab occupation features.

S-1839. Renard site, Ontario 1180 ± 90

Charcoal (NMC-1112) from CbHs-5 site, NE shore Fox I., Mississagi Delta, Cobden Twp (46° 11' 12" N, 83° 01' 57" W). Prehistoric Terminal Woodland site of Algonkian affiliation, at 183m asl. From SW corner of Sq 595W18, Level 6, 20 to 24cm depth, assoc with Feature 2. Coll 1977 by M J Brizinski; subm 1979 by M M Bertulli and R Wilmeth.

S-1840. Bruce Boyd site, Ontario 900 ± 60

Human bone (NMC-1113) from AdHc-4 site, on sandy knoll, Lots 8 and 9, Concession B, S Walsingham Twp, Norfolk Co (42° 36' N, 80° 28'

W). Early Woodland burial site with Meadowood phase affiliations. Apparent limited Late Woodland use of burial area (S-1287: R, 1981, v 23, p 114). Left femur from multiple Burial G (Feature 15) in Sq 495-505. Coll 1976 by R Williamson; subm 1979 by M W Spence, Univ Western Ontario.

Inderwick site series, Ontario

Charcoal from BeGb-1 site, on small promontory in Nobles Bay, Big Rideau Lake (44° 47' 56" N, 76° 12' 58" W). Site considered to be Archaic to Woodland transitional period, ca 1000 ± 200 BC. Coll 1978 and subm 1979 by G D Watson.

S-1853. Charcoal (NMC-1143) 1810 ± 200

From Sq 018, assoc with red quartzite lithic detritus, Genesee projectile points, worked steatite, and single undecorated pottery sherd.

S-1854. Charcoal (NMC-1144) 1280 ± 100

From Sq 018, large piece of charcoal, same assoc as S-1853.

General Comment (DGW): dates too recent for site Archaic Broadpoint phase evidence (Watson, 1981).

Cape Cove—1 site series, Newfoundland

Charcoal from Cape Cove—1 site, on beach between Freels and Newtown (49° 14' 43" N, 53° 29' 16" W). From hearth assoc with chipped projectile points, contracting stemmed lance, groundstone objects, and detritus. Coll and subm 1979 by S Austin, Memorial Univ, St John's.

S-1860. Charcoal, Level 1 3620 ± 120

From uppermost cultural stratum, Proto-Beothuk.

S-1859. Charcoal, Level 4 4540 ± 140

From lowest cultural stratum, Maritime Archaic.

General Comment (SA): acceptable dates; S-1859 is one of earliest occupation dates for the region. S-1860 suggests Level 1 dates to late Maritime Archaic.

S-1861. Cape Cove—2 site, Newfoundland 1820 ± 60

Charcoal from hearth feature, on peat ridge above beach between Cape Freels and Newtown (49° 14' 17" N, 53° 29' 21" W). Single cultural stratum assoc with notched projectile points, triangular bifaces, and scrapers. Beothuk site ca 1000 to 1800 yr BP. Coll and subm 1979 by S Austin. *Comment* (SA): acceptable date but slightly earlier than expected considering major evidence of historic Beothuk.

Cape Cove—3 site series, Newfoundland

Charcoal from Cape Cove—3 site, on beach between Cape Freels and Newtown (49° 01' 33" N, 53° 29' 21" W), from hearth feature, single occupation assoc with bifacially worked projectile points, ca 1000 to 1800 yr BP. Coll and subm 1979 by S Austin.

S-1862. Charcoal, Level 2 1870 ± 110

From Feature 10.

S-1863. Charcoal, Level 2 1920 ± 130

From Feature 11.

General Comment (SA): acceptable date for prehistoric Beothuk occupation. Feature 11 exhibited micropoint technology usually uncommon in Beothuk assemblages; cultural placement uncertain.

S-1922. British Block Cairn site, Alberta 2720 ± 220

Charcoal (NMC-1159) from EdOp-1 site on NW Sec 14, Twp 19, R5, W4, within Suffield Military Reserve (50° 36' 26" N, 110° 35' 26" W). Medicine wheel complex of one large and several small cairns assoc with 51 tipi rings. From Feature 8, apparent burned stake 10cm below surface, tipi ring 46. Coll 1979 by B Kooyman; subm 1980 by J Finnigan, Univ Saskatchewan.

Bérubé site series, Quebec

Bone from DdGt-5 site, E shore of Lake Abitibi, ca 3.2km from mouth of Duparquet R, Palmarolle Mun (48° 39' N, 79° 19' W); cultural affiliation undetermined. Coll 1972, 1973 by P Leblanc, R Lachajelle, J Trudel, and P Gauthier; subm 1979 by R Marios, Natl Mus Canada.

S-1928. Bone (NMC-1147), Level 2, Zone A 730 ± 510

From Sq N3E5, 7cm below surface, assoc with pottery fragments and rifle cartridges.

S-1932. Bone (NMC-1151), Level 2, Zone A 6230 ± 160

From Sq S6E1, 7cm below surface, assoc with pottery fragments and projectile points.

S-1929. Bone (NMC-1148), Level 3, Zone A 5330 ± 1310

From Sq N1E3 and N2E3, ca 22cm below surface, assoc with pottery fragments and lithic materials.

S-1930. Bone (NMC-1149), Level 2, Zone B 2870 ± 490

From Sq N2E3, 12cm below surface, assoc with pottery fragments and two knives.

S-1927. Bone (NMC-1146), Level 2, Zone C 1710 ± 290

From Sq N3, 17cm below surface, assoc with pottery fragments.

S-1931. Bone (NMC-1150), Level 2, Zone C 1010 ± 230

From Sq N2E3, 17cm below surface, assoc with pottery fragments, scraper, and knife fragments.

S-1933. Margo site, Quebec 3950 ± 950

Calcined bone from DdGt-6 site, adjacent to DdGt-5 (Bérubé) site on E shore of Lake Abitibi, Palmarolle Mun (48° 39' N, 79° 19' W); cultural affiliation undetermined. From Sq 04, Level 2, Zones A and B, ca 7cm

below surface. Assoc with small pottery fragments, scraper, and broken knife. Coll 1971 and subm 1979 by R Marios.

Lazarus site series, Yukon

Charcoal and bone from MjVk-4 site, on 8m terrace, E bank of Porcupine R, ca 16km upstream from Old Crow Village (67° 35' N, 139° 32' W). Campsite includes several hearths and midden-like deposits and semi-subterranean housepit feature. Material believed to belong to yet uncharacterized culture, similar to that at nearby Old Chief site, but different from Late Prehistoric Athapaskan assemblage at Klo-kut site. Coll 1978 by S Greer; subm 1980 by J Cinq-Mars.

S-1934. Bone (NMC-1154) 1250 ± 100

From Test Pit 7, apparent midden deposit, top of soil C horizon.

S-1936. Charcoal (NMC-1156) <100

From Test Pit 7, apparent midden deposit, near bottom of rich organic zone.

S-1935. Charcoal (NMC-1158) 1700 ± 120

From Test Pit 8, small basin-shaped hearth deposit overlying soil C horizon.

Ault Park site series, Ontario

Charcoal from BgFr-1 site, on Sheek I. near Long Sault Rapids, now flooded by St Lawrence Seaway (45° 00' 35" N, 74° 51' 20" W). Multi-component site with dominant occupation of Point Peninsula culture. Coll 1956 by R Pehl; subm 1980 by R Wilmeth.

S-1937. Charcoal (NMC-1160), Level III 970 ± 70

From Area 7, Tr 6, Sq P11, assoc with pottery.

S-1938. Charcoal (NMC-1161), Level III 2420 ± 70

From Area 2, Tr 1, Sq o/o, assoc with hearth and pottery.

S-1939. Charcoal (NMC-1162), Level III 2400 ± 110

From Area 1, Tr 1, Sq B15 and B16, assoc with hearth and pottery.

S-1948. Auda site, Ontario 1070 ± 110

Carbonized wood (NMC-1153) from A1Go-29 site, ca 1.6km N of Lake Ontario and 24km W of Port Hope (43° 57' 35" N, 78° 24' 30" W). Single and multiple family (10 house) village site. Artifacts indicate Middle to Late Woodland transitional period, ca AD 500 to 700. Coll 1979 and subm 1980 by M Kapches, Royal Ontario Mus, Toronto.

Swamp site series, Manitoba

Bone, charcoal, and peat from FbMi-5 site, 350 to 358m asl; below Upper Campbell Beach Ridge of Glacial Lake Agassiz, near Swan R (52° 11' N, 101° 28' W), Archaic site within shallow peat bog. Lithic materials include large side-notched projectile points, Oxbow and Pelican Lake

points. Previous dates, 2320 $\pm$ 130 and 2330 $\pm$ 130 yr BP (GSC-1219: R, 1970, v 12, p 472-485; GSC-1308: R, 1971, v 13, p 255-324). Coll 1979, 1980 by G Fifik, K Land, K Stevens, and P Badertscher; subm 1980 by P Badertscher, Dept Cultural Affairs and Hist Resources, Winnipeg.

S-1951. Bison bone (NMC-1171), Level V **310 $\pm$ 70**

From Unit 28N2W, peat-gray clay interface.

S-1952. Charcoal (NMC-1172) **1670 $\pm$ 70**

From Unit 30N2W, basal peat overlying clay zone.

S-2028. Mammal bone (NMC-1202) **12,980 $\pm$ 3190**

From Unit 17S45E, base of gray sand horizon overlying yellow sand horizon, assoc with lithic debris and bone fragments.

S-2029. Peat (NMC-1203) **720 $\pm$ 60**

From balk between Units 26N2W and 24N2W, basal peat overlying gray sandy loam horizon.

General Comment (AAR): for site discussion, see Badertscher (1980).

Gowen—2 site series, Saskatchewan

Unburned bison bone and carbonaceous soil from FaNq-32 site on terrace of S Saskatchewan R, within Saskatoon city limits, Queen Elizabeth Power Sta (52° 05' 42" N, 106° 42' 20" W); early Plains Archaic site. Coll and subm 1980 by E G Walker.

S-1970. Bison bone (NMC-1173) **5920 $\pm$ 130**

S-1971. Bison bone (NMC-1174) **6080 $\pm$ 160**

S-2036B. Bison bone **5910 $\pm$ 170**

S-2036A. Bison bone (same as S-2036B) **5080 $\pm$ 150**

Analysis by former 1N HCl pretreatment method.

S-2037. Carbonaceous soil **5670 $\pm$ 110**

Assoc with S-2036A and S-2036B.

General Comment (EGW): dates consistent with assoc Gowen-1 site (R, 1981, v 23, p 124-125).

Below Forks site series, Saskatchewan

Charcoal and bone from FhNq-25 site, on valley bottom flood plain N bank of Saskatchewan R, 2.5km below forks of N and S Saskatchewan Rivers (53° 14' 55" N, 105° 03' 35" W). Erosion exposure of several occupation levels to depth 2.3m below surface. Coll and subm 1980 by D Meyer.

S-1994. Charcoal (NMC-1205) **5740 $\pm$ 100**

From Sq 9S2E, 1.75m below surface.

S-2034. Bone (NMC-1215) 4060 ± 270

From Sqs 11S1E, 11S2E and 11S3E, 1.76 to 1.83m below surface.

Harper Valley site series, Saskatchewan

Charcoal and bone from FgNi-24 site, on low flat SE side of S Saskatchewan R, 2.2km N of Muskoday Indian Reserve (53° 09' 40" N, 105° 25' 40" W). Late prehistoric bison kill site now largely disturbed by cultivation. Pottery, lithic artifacts, and large quantities of smashed bison bone exposed. Undisturbed border excavation revealed hearth feature. Coll 1980 by B Clark and D Meyer; subm 1980 by D Meyer.

S-1995. Charcoal (NMC-1212) 1460 ± 100

From Sq 90N22E, upper occupation level, 50 to 55cm below surface.

S-2032. Bone (NMC-1214) 1910 ± 70

From Sqs 88N22E, 89N22E, and 90N22E, fragments from lower occupation level, 70 to 80cm below surface.

S-2033. Bone (NMC-1213) 990 ± 120

From Sq 90S95E, fragments of hearth area, 30 to 35cm below surface.

S-2002. McRa-10 site, Northwest Territories 3300 ± 160

Charcoal (NMC-1183) from McRa-10 site, 0.5km inland N shore of McTavish Arm, Great Bear Lake (66° 24' 30" N, 120° 11' 15" W). Site cultural affiliation undetermined; contained flakes, bifaces, and leveled flakes including generalized point tip from knife. Sample from hearth feature. Coll 1979 and subm 1980 by D W Clark, Natl Mus Canada. *Comment* (DWC): antedates appearance of Arctic Small Tool tradition at Great Bear Lake.

S-2003. MdPg-1 site, Northwest Territories <100

Calcined bone (NMC-1184) from MdPg-1 site, W side of Fault Creek, E tributary to Hornby Bay, Great Bear Lake (66° 37' 35" N, 117° 35' 50" W), from disturbed hearth area assoc with end scrapers, bifaces, retouched flakes, and generalized point tip. Cultural affiliation undetermined. Coll 1979 and subm 1980 by D W Clark. *Comment* (DWC): date enigmatic.

S-2005. MdPs-7 site, Northwest Territories 1760 ± 270

Calcined and charred bone (NMC-1186) from MdPs-7 site, N side outlet of unnamed lake, W side of Hornby Bay, Great Bear Lake (66° 30' 55" N, 118° 13' 45" W). Small disturbed two-hearth site assoc with biface fragments, utilized flakes, end scraper, and point base. Cultural affiliation undetermined, possibly early Taltheilei, ca 1 bc. Coll 1979 and subm 1980 by D W Clark. *Comment* (DWC): date within expected range, tentatively acceptable considering material assayed.

McIvor site series, Ontario

Bone and shell from BfFv-1 site, on ridge E of S Nation R, 3.2km NE of Spencerville, Edwardsburg Twp, Grenville Co (44° 51' 30" N, 75° 30'

45" W). Single component, late prehistoric St Lawrence Iroquois village site. Coll 1964, 1965 and subm 1980 by J V Wright.

S-2006. Bear bone (NMC-1195) 480 ± 70

From Unit C, Sq C, midden.

S-2007. Clam shell (NMC-1196) 1350 ± 70

From E midden.

S-2008. Fish bone (NMC-1147) 980 ± 80

From Units A, B, and C; Sq C, W, and E, midden deposits.

S-2009. Deer bone (NMC-1198) 410 ± 100

From Units B and C, midden.

S-2010. Human bone (NMC-1199) 430 ± 80

From Unit C, Sq A, midden.

S-2011. Bone charcoal (NMC-1200) 430 ± 70

From Sqs A, B, and C, midden. Bone charcoal fraction separated from burned deer bone (S-2064) prior to bone pretreatment and dating.

S-2064. Deer bone (NMC-1200) 1050 ± 330

From Sqs A, B, and C, midden.

S-2012. Beaver bone (NMC-1201) 530 ± 80

From Unit C, Sqs A, B, and C, midden.

S-2013. MfVa-9 site, Yukon 7580 ± 420

Charcoal (NMC-1204) from MfVa-9 site, on ridge above Cornwall Creek branch of Rock R, 2 to 3km W of Dempster Hwy, W foothills of Richardson Mts (66° 55' N, 136° 30' W). Composite sample from organic lenses in yellow loess deposit, two separate upslope units that merge and become discontinuous downslope as loess thins out. Artifacts include modified blade assoc with organic layers. Lens may represent hiatus in loess accumulation and temporary stable surface. Coll 1980 by R Gotthardt, B Smith, and P Hunking; subm 1980 by J Cinq-Mars.

Morris site series, Nova Scotia

Charcoal from BhDe-2 site, on 9 to 12m plateau NE Cape D'Or Lighthouse, Bay of Fundy (45° 17' N, 64° 46' W). Late prehistoric lithic work site, possible habitation. Cultural affiliation uncertain. Coll 1980 by L Jackson, G Hall, and D L Keenlyside; subm 1980 by D L Keenlyside.

S-2014. Charcoal (NMC-1206), Levels IV and V 1380 ± 70

From Test Unit 1, hearth area, 15 to 25cm below surface.

S-2015. Charcoal (NMC-1207), Level III 900 ± 80

From Test Unit 2, assoc with artifactual material, 10 to 15cm below surface.

General Comment (DLK): dates within expected temporal range, suggest repeated occupations.

S-2016. MacDonald site, Prince Edward Island 1400 ± 160

Charred bone (NMC-1208) from CcCm-12 site, on S Lake mainland shore near East Point (46° 25' 24" N, 62° 01' 52" W), late prehistoric shell midden deposit site with mid-17th century historic French component. From Area A, Test Pit 1, Level 4, 31cm below surface, assoc with rim sherds. Coll 1980 by L Jackson and D L Keenlyside; subm 1980 by D L Keenlyside. *Comment* (DLK): acceptable date although earlier than expected.

S-2017. Cape D'Or site, Nova Scotia 2040 ± 200

Charcoal (NMC-1209) from BhDe-1 site, on bluff overlooking W beach, Cape D'Or Lighthouse, Bay of Fundy (45° 17' N, 64° 46' W). Heavily used prehistoric knapping workshop site. Assoc with ceramics similar to Fulton I. site, New Brunswick, and native copper. Sample from Area A, Test Pit 6. Coll and subm 1980 by D L Keenlyside. *Comment* (DLK): excellent date for diagnostic material.

Wakelin site series, Prince Edward Island

Charcoal from CcCm-9 site, N end of S Lake mainland shore, near East Point (46° 25' 45" N, 62° 01' 21" W). Single component site, would appear to be seasonal encampment consisting of several house (wigwam) activity areas; cultural affiliation uncertain. Cultural material similar to other surface collns on Prince Edward I., but first in undisturbed context. Coll and subm 1980 by D L Keenlyside.

S-2018. Charcoal (NMC-1210) 620 ± 150

From Test Pit 1, hearth fill, 20cm below surface.

S-2019. Charcoal (NMC-1211) 750 ± 150

From Test Pit 1, Area A, Level 5, hearth fill assoc with decorated ceramic fragments, 20cm below surface.

Clachan site series, Northwest Territories

Wood from NaPi-2 site, Cape Hearne coast, Coronation Gulf, MacKenzie Dist (68° 09' 45" N, 114° 50' 30" W). Thule house site, 4m asl, 80m inland from coast, ca AD 1100 to 1500. Coll and subm 1980 by D Morrison, Natl Mus Canada.

S-2020. Wood (NMC-1187), Level C 1070 ± 60

From S10W18, house floor, last occupation.

S-2024. Wood (NMC-1191), Level C 820 ± 80

From S14W16, house wall, 40 to 50cm depth.

S-2025. Wood (NMC-1192), Level C 1030 ± 70

From S14W16, house wall, 40 to 50cm depth.

- S-2026. Wood (NMC-1193), Level C** **840 ± 60**
From S14W18, house entrance passage floor.
- S-2023. Wood (NMC-1190), Level E** **1280 ± 70**
From S14W16, house wall, basal gravel, 60 to 70cm depth.
- S-2027. Wood (NMC-1194), Level 2** **840 ± 60**
From S10W14, mid-range date for midden.
- S-2021. Wood (NMC-1188), Level F** **1090 ± 70**
From S10W14, basal portion of midden.
- S-2022. Wood (NMC-1189), Level 3** **1170 ± 60**
From S18W14, basal portion of midden.

General Comment (DM): dates too early for Middle Thule occupation indicated at site. All dated material is wooden house posts with probable contamination by seal oil and fats causing earlier apparent ages.

Billet site series, Saskatchewan

Charcoal and bone from EkNv-36 site, low flat area on edge of sand-hills, on boundary of NW and NE $\frac{1}{4}$ of Sec 11, Twp 32, R12, W3; 1.1km W of Harris (51° 44' 03" N, 107° 35' 52" W). Extensive habitation site with several hearths, predominantly Hanna culture, although Oxbow materials present in some loci. Where both are present, stratigraphy separation is uncertain; Area C-3 yielded Hanna material only. Coll 1978, 1979 and subm 1981 by W Pendree, Eston.

- S-2053. Charcoal (NMC-1223)** **1560 ± 160**
From Area C-3, Units 173-L29 and 173-L30, basin-shaped hearth feature, undisturbed sec.
- S-2054. Bone (NMC-1224)** **3100 ± 60**
From Area C-3, Units 173-L29 and L-30, 174-L29 and L30, immediately adjacent to hearth feature.
- S-2063. Charcoal (NMC-1225)** **3470 ± 120**
From Area C-2, Unit 122-L1, immediately adjacent to hearth feature, directly below bison mandible. Area C-2 yielded mostly Hanna materials, although some Oxbow artifacts were also present.

REFERENCES

- Armstrong, J E and Clague, J J, 1977, Two major Wisconsin lithostratigraphic units in southwest British Columbia: Canadian Jour Earth Sci, v 14, p 1471-1480.
- Badertscher, Patricia, 1980, The 1979 excavations at FbMi-5, Swan River, Manitoba: Prelim rept no. 6, Papers in Manitoba Archaeol, Winnipeg.
- Bornhold, B D, 1983, Sedimentation in the Douglas Channel and Kitimat Arm: Canadian Tech Repts, Hydrog and Ocean Sci, no. 18, p 88-114.
- Christiansen, E A, 1968, Geology of the Saskatoon site: Napao, v 1, no. 2, p 28-31.
- Dawson, K C A, 1978a, The Mound Island site; a multicomponent Woodland period habitation site in northwestern Ontario: Ontario Archaeol Pub 30, Toronto.
- , 1978b, The Nyman site; a seventeenth century Algonkian camp on the north shore of Lake Superior: Canadian Archaeol Assoc Bull no. 8.

- Dickson, G A, 1976, Recent radiocarbon dates from northern Manitoba: Misc papers no. 3, Papers in Manitoba Archaeol, Winnipeg.
- Dyck, W, Fyles, J G, and Blake, W, Jr, 1965, Geological Survey of Canada radiocarbon dates IV: Radiocarbon, v 7, p 24-46.
- Dyke, A S, 1979, Radiocarbon-dated Holocene emergence of Somerset Island, central Canadian Arctic: Current Research, Part B, Geol Survey Canada Paper 79-1B, p 307-318.
- 1980, Redated Holocene whale bones from Somerset Island, District of Franklin: Current Research, Part B, Geol Survey Canada Paper 80-1B, p 269-270.
- Dyke, A S and Zoltai, S C, 1980, Radiocarbon-dated mudboils, central Canadian Arctic: Current Research, Part B, Geol Survey Canada Paper 80-1B, p 271-276.
- Ferguson, G J and Libby, W F, 1962, UCLA radiocarbon dates I: Radiocarbon, v 4, p 109-114.
- Hlady, W M, 1971, Introduction to Woodland archaeology in northern Manitoba: Manitoba Archaeol Newsletter, v 8, no. 2 and 3, Manitoba Archaeol Soc, Winnipeg.
- Hurley, W M, 1978, The Armstrong site: A Silvernail phase Onesta village in Wisconsin: Wisconsin Archaeologist, v 59.
- Johnson, K L, (ms), 1970, Alpine vegetation and soils of Mesa Seco Plateau, San Juan Mountains, Colorado: Ph D thesis, Univ Illinois, Urbana.
- Jonsson, B, 1978, Utivist, no. 4, Reykjavik.
- 1979, Logberg Heimskringla (March 23, 30 issues), Winnipeg (English summary).
- Krueger, H W and Weeks, C F, 1966, Geochron Laboratories Inc, radiocarbon measurements II: Radiocarbon, v 8, p 142-160.
- Lammers, G E, 1968, A note on the Saskatoon site, Saskatoon, Saskatchewan and its contained paleofauna: Napao, v 1, no. 2, p 32-34.
- Longin, R, 1971, New method of collagen extraction for radiocarbon dating: Nature, v 230, p 241-242.
- Lowdon, J A and Blake, W, Jr, 1979, Geological Survey of Canada radiocarbon dates XIX: Geological Survey of Canada Paper 79-7, Ottawa.
- Lowdon, J A, Robertson, I M, and Blake, W, Jr, 1971, Geological Survey of Canada radiocarbon dates XI: Radiocarbon, v 13, p 255-324.
- Lowdon, J A, Wilmeth, R, and Blake, W, Jr, 1969, Geological Survey of Canada radiocarbon dates VIII: Radiocarbon, v 11, p 22-42.
- 1970, Geological Survey of Canada radiocarbon dates X: Radiocarbon, v 12, p 472-485.
- MacNeish, R S, 1957, Introduction to archaeology of southeast Manitoba: Natl Mus Canada Bull no. 157.
- Mayer-Oakes, W J, 1970, Archaeological investigations in the Grand Rapids, Manitoba Reservoir, 1961-1962: Occasional Paper no. 3, Dept Anthropol, Univ Manitoba, Winnipeg.
- McCallum, K J and Dyck, W, 1960, University of Saskatchewan radiocarbon dates II: Am Jour Sci Radiocarbon Supp, v 2, p 73-81.
- McLeod, M P, 1981, The early prehistory of the Dog Lake area, Thunder Bay: Manitoba Archaeol Quarterly (April), v 5, no. 2, Winnipeg.
- Stuiver, Minze, Deevey, E S, and Gjalenski, L J, 1960, Yale natural radiocarbon measurements V: Am Jour Sci Radiocarbon Supp, v 2, p 58.
- Morlan, R E, 1973, The later prehistory of the Middle Porcupine drainage, northern Yukon Territory: Natl Mus Canada Mercury Ser, Archaeol Survey Canada Paper no. 11.
- Nasmith, H, 1962, Late glacial history and surficial deposits of the Okanagan Valley, British Columbia: Dept Mines Bull no. 46, British Columbia.
- Orr, P C, 1968, Prehistory of Santa Rosa Island: Santa Barbara Mus Nat Hist, Santa Barbara, California.
- Pendergast, J F, 1972, The Lite site: An Early Southern Division Huron site near Belleville, Ontario: Ontario Archaeology, no. 17.
- Pohorecky, Z S and Wilson, J, 1968, Preliminary archaeological report on the Saskatoon site: Napao, v 1, no. 2, p 35-70.
- Pokotylo, D, (ms), 1978, Lithic technology and settlement patterns in upper Hat Creek Valley, British Columbia: Ph D thesis, Univ British Columbia, Vancouver.
- Rutherford, A A, Wittenberg, J, and McCallum, K J, 1973, University of Saskatchewan radiocarbon dates VI: Radiocarbon, v 15, p 193-211.
- 1975, University of Saskatchewan radiocarbon dates VI (sic): Radiocarbon, v 17, p 328-353.

- Rutherford, A A, Wittenberg, J, and Wilmeth, R, 1979, University of Saskatchewan radiocarbon dates VIII: Radiocarbon, v 21, p 48-94.
- 1981, University of Saskatchewan radiocarbon dates IX: Radiocarbon, v 23, p 94-135.
- Rutherford, A A and Wittenberg, J, 1979, Evidence in support of soluble collagen extraction for radiocarbon bone dating: Saskatchewan Research Council rept no. C79-22, Saskatoon.
- Sanger, D, 1970, The archaeology of the Lochmore-Nesikep locality, British Columbia: *Syesis*, v 3, supp 1.
- Saylier, B, 1978, The Eveline Street burials physical characteristics: *Manitoba Archaeol Quarterly*, v 1, nos. 3 and 4, p 22-31.
- Schreiner, B T, 1983a, Lake Agassiz in Saskatchewan, in Teller, J T and Lee, C, eds, *Glacial Lake Agassiz: Geol Assoc Canada Paper 26*.
- 1983b, Quaternary geology of the Precambrian Shield, Saskatchewan: Saskatchewan Energy and Mines rept no. 221 (ms in preparation).
- Schroedl, A R and Walker, E G, 1978, A preliminary report on the Gowen site; an early Middle Prehistoric site on the Northwest Plains: *Napao*, v 8, p 1-5.
- Soainisto, M, 1975, Stratigraphical studies on the shoreline displacement of Lake Superior: *Canadian Jour Earth Sci*, v 12, p 300-319.
- Stryd, A, (ms), 1973, The later prehistory of the Lillooet area, British Columbia: Ph D thesis, Univ Calgary.
- Turnbull, C, 1977, The Augustine site; a mound from the Maritimes: *Archaeol E North America*, v 4.
- Walker, E G, (ms), 1980, The Gowen site; an early Archaic site on the Northern Plains: Ph D thesis, Univ Texas, Austin.
- Watson, G D, (ms), 1980, The Wyght site; a multicomponent Woodland site on the Lower Rideau Lake, Leeds County, Ontario: MA thesis, Trent Univ, Peterborough.
- 1981, A late Archaic Broadpoint phase in the Rideau Lakes area of eastern Ontario: *The Ottawa Archaeologist*, Ontario Archaeol Soc Newsletter, v 10, no. 9.
- Westgate, J A, 1965, The Pleistocene stratigraphy of the Foremost-Cypress Hills area, Alberta: *Alberta Soc Petrol Geol*, 15th Field Conf Guidebook, pt 1, p 85-111.
- Westgate, J A and Bayrock, L A, 1964, Periglacial structures in the Saskatchewan Gravels and Sands of central Alberta: *Jour Geol*, v 72, p 641-648.
- Wiersum, W and Tisdale, M A, (ms), 1975, Excavations at UNR23; The Notigi Lake site: Archaeol Research Centre, Univ Winnipeg, ms on file.
- Workman, W, (ms), 1974, PhD thesis, Univ Wisconsin (title unknown).
- 1978, Prehistory of the Aishikiki-Kluane area, southwest Yukon Territory: Natl Mus Canada Mercury ser, Archaeol Survey Canada Paper no. 74.
- Wright, V J, 1967, The Laurel tradition and the Middle Woodland period: *Natl Mus Canada Bull no. 217*, Anthropol ser 79.
- 1972, The Knechtel site, Bruce County, Ontario: Natl Mus Canada Mercury ser, Archaeol Survey Canada Paper no. 4.
- 1974, The Nodwell site: Natl Mus Canada Mercury ser, Archaeol Survey Canada Paper no. 22.
- Wuorinen, V, 1978, Age of Aiyansk Volcano, British Columbia: *Canadian Jour Earth Sci*, v 15, p 1037-1038.