[RADIOCARBON, VOL. 18, No. 2, 1976, P. 210-220]

UNIVERSITY OF MIAMI RADIOCARBON DATES VI

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The following radiocarbon measurements are a partial list of projects and samples dated since the Spring of 1975. The technique used is liquid scintillation counting of wholly synthesized benzene as indicated in R, v 16, p 402-408. The intermediate chemical step of converting CO_2 to Li_2C_2 has been modified so that the CO_2 is reacted with the lithium metal at a temperature of 950° to 1000°C instead of the 600°C as formerly done (Tamers, 1975). This modification has had the effect of reducing occasional variable losses in conversion yields in this step, and reducing the reaction time required from 30 min to 10 min for a typical ¼ mole sample. Dates are calculated using a ^{14}C half-life of 5568 yr and errors are reported as one standard deviation. No other correction factors are applied.

ACKNOWLEDGMENTS

We are grateful to D Evans, Dept Biology, for the supplemental use of his Packard Tri-Carb 2003 liquid scintillation spectrometer. We also wish to thank students P Crevello and J Hattner for their assistance with various aspects of laboratory preparations.

SAMPLE DESCRIPTIONS

I. ARCHAEOLOGIC SAMPLES

A. United States

Arch Creek Shell Midden series

Shell and charcoal samples from Arch Creek site, Dade Co, Florida (25° 08′ 17″ N, 80° 10′ 55″ W). Dates period of midden use by early Florida Indians (R, v 16, p 403-404). Coll July 1975 by R Carr, Florida Div Archives, Tallahassee, Florida; subm July 1975 by W Coleman, Miami West India Archeol Soc, Miami, Florida.

UM-617. Arch Creek 2 — **1730 ± 80** / **AD 220**

Shell (*Strombus gigas*) from S wall of Pit E55/S13 at 47cm depth.

UM-618. Arch Creek 3 — **1360 ± 80** / **AD 590**

Shell (*Strombus gigas*) from E wall of Pit E55/S13 at 18cm depth.

UM-619. Arch Creek 7 — **2320 ± 80** / **370 BC**

Charcoal from floor of Pit E65/S12 at 25 to 35cm depth.

UM-620. Arch Creek 9 — **2250 ± 90** / **300 BC**

Charcoal from floor of Pit E70/S12 at 25cm depth.

Wightman series

Shell and charcoal samples from shell mound of Wightman Site I, Sanibel I., Florida (26° 28′ 18″ N, 89° 09′ 16″ W). Coll and subm 1975 by R H and H H Cadwell.

General Comment (RHC): results indicate a shell mound constructed at different times over a midden. Variation in periods of occupation possibly resulted from sea level fluctuations.

1240 ± 90

UM-478. Wightman A-1 **AD 710**

Busycon contrarium from 0 to 46cm below surface of mound within Grid A.

1700 ± 60

UM-480. Wightman A-2 **AD 250**

Busycon contrarium from 46 to 92cm below surface of mound within Grid A.

1580 ± 70

UM-481. Wightman A-3 **AD 370**

Busycon contrarium from 92 to 138cm below surface of mound within Grid A.

2250 ± 80

UM-477. Wightman A-3 and A-4 combined **300 BC**

Charcoal from 92 to 184cm below surface of mound within Grid A.

2050 ± 160

UM-482. Wightman A-4 **100 BC**

Busycon contrarium from 138 to 184cm below surface of mound within Grid A.

2330 ± 100

UM-483. Wightman A-5 **380 BC**

Aequipecten irradians from 184 to 230cm below surface of mound within Grid A.

2830 ± 80

UM-484. Wightman A-6 **880 BC**

Area ponderosa from 230 to 276cm below surface of mound within Grid A.

1370 ± 90

UM-487. Wightman F-8 **AD 580**

Charcoal from 322 to 368cm below apex of mound within Grid F.

2110 ± 50

UM-370. Indiantown Sand Mounds **160 BC**

Charcoal from 60cm beneath surface of sand mound, Indiantown, Florida (27° 02′ 20″ N, 80° 34′ 31″ W). Coll 1974 by M Andrejko; subm 1974 by R Williams, Dept Anthropol, Univ South Carolina. *Comment* (RW): result used to date bundle burial and early habitation.

Cannon's Point series

Shell and wood samples from shell ring, Cannon's Point, St Simon's Island, Glynn Co, Georgia (31° 16′ 30″ N, 82° 20′ 10″ W). Coll 1973-75 and subm 1975 by R Marrinan.

UM-523. Cannon's Point 2 — **3600 ± 110** / **1650 BC**

Oyster shells from sub-midden humus of Unit Test I in W ring (9GN76) 12 to 20cm below surface. *Comment* (RM): dates last occupation of site.

UM-521. Cannon's Point 1 — **3760 ± 90** / **1810 BC**

Oyster shells from Unit 18N, 3E at 20cm depth. *Comment* (RM): dates last occupation of site.

UM-522. Cannon's Point 3 — **3860 ± 90** / **1910 BC**

Oyster shells from lower level of Unit Test I, W ring (9GN76) 45 to 55cm below surface. *Comment* (RM): dates initial occupation of site.

UM-520. Cannon's Point 5 — **4190 ± 90** / **2240 BC**

Oyster shell from base of midden deposit 1.47m below surface. *Comment* (RM): dates initial occupation of shell ring and assoc human skeletal material.

UM-519. Cannon's Point 6 — **2770 ± 90** / **820 BC**

Wood from excavation Sq 27S, 18E, 3.55m below marsh surface, outside of shell ring. Dates transitional period from fiber-tempered ceramics to Deptford ceramics.

UM-518. Cannon's Point 7 — **2780 ± 80** / **830 BC**

Wood from submarsh floor Excavation Sq 33S, 12E, 3.36 to 3.47m below marsh surface. *Comment*: similar to UM-519.

B. Ecuador

Arajuno series

Human bones and skull from grave sites, SE Amazon, Equador (1° 10′ 00″ S, 78° 20′ 03″ E). Coll 1972 and subm 1975 by P G Turolla.

UM-421. Arajuno Site 1 — **Modern**

Human bones from 3m below surface. *Comment* (PGT): assoc with carved stone artifact. Estimated age: Paleo-Indian. *Comment* (JJS): inorganic fraction.

UM-422. Arajuno Site 1 — **690 ± 90** / **AD 1260**

Collagen fraction of UM-421.

UM-423. Arajuno Site 2 **Modern**

Human skull from 5m below surface. *Comment* (PGT): considered Neo-Indian. *Comment* (JJS): inorganic fraction.

UM-424. Arajuno Site 2 **1650 ± 70 AD 300**

Collagen fraction of UM-423.

C. Guatemala

Monte Alto series

Two charcoal samples from artificial fill under 'Pot Belly' statue, Finca Monte Alto, La Democracia, Guatemala (14° 13′ 20″ N, 90° 56′ 30″ W). Coll 1970 and subm 1974 by E M Shook, Antigua, Guatemala.

General Comment (EMS): samples are possibly from cooking or pottery making fires. Age of this culture is difficult to determine since assoc of monuments and pottery are not indigenous to area of find. Results indicate emplacement of statuary during Pre-Classic era. Emplacement corresponds chronologically with 'Pot Belly' emplacement at Finca Santa Leticia, El Salvador (R, v 18, p 116).

UM-389. Monte Alto M44 W to Z **2450 ± 90 500 BC**

UM-621. Monte Alto M8 K3 **2020 ± 70 70 BC**

D. Honduras

Port Royal series

Two samples from each of 2 shipwrecks (PR1 & PR4) lying underwater at E end of Port Royal Bay, Isla de Roatan, Islas de la Bahia, Honduras (16° 24′ 20″ N, 86° 15′ 26″ W). Coll and subm 1975 by J E Hall, Dept Anthropol, Univ Miami.

General Comment (JEH): wrecks were covered with sand and turtle grass in water depth ca 9m. Ships were thought to pre-date Columbus, AD 1492.

UM-625. Port Royal PR1-6 **230 ± 70 AD 1720**

Charcoal from front hold sec.

UM-626. Port Royal PR1-7 **260 ± 60 AD 1690**

Carbonized wood from front hold sec. *Comment* (JJS): average age for UM-625 & UM-626 is 245 ± 45. Samples from same wreck were previously dated by Pennsylvania (R, v 16, p 23).

UM-622. Port Royal PR4-1 **130 ± 60 AD 1820**

Wood sample from Sec 13G thought to be centerboard.

150 ± 50

UM-623. Port Royal PR4-1 **AD 1800**

Comment (JJS): duplicate run of UM-622. Average age is 140 ± 40.

UM-624. Port Royal PR4-2 **Modern**

Wood sample taken from Sec 15G thought to be centerboard.

II. GEOLOGIC SAMPLES

A. United States

Caesars Creek Bank series

Shell samples from 2 piston cores in .7 to 1m water, Caesars Creek Bank, Biscayne Bay, Florida. Combined carbonate mudbank and tidal flats assoc with major tidal pass between Biscayne Bay and inner-reef tract SE coast of Florida. Dates depositional sequence of bank. Coll and subm 1975 by E R Warzeski, RSMAS, Univ Miami. Core 674 from (25° 23′ 53″ N, 80° 13′ 01″ W). Core 575 from (25° 22′ 53″ N, 80° 12′ 56″ W). See also (R, v 18, p 117-119).

4210 ± 140

UM-552. Core W-674-1D **2260 BC**

Assorted shells (primarily *Modiolus americanus*), 428 to 448cm below sediment surface.

5480 ± 140

UM-553. Core W-674-1E **3530 BC**

Assorted shells (primarily *Anodontia alba, Astrea tecta americana*), 400 to 440cm below sediment surface.

4220 ± 110

UM-525. Core W-575-1A **2270 BC**

Large mollusk shells (*Laevicardium laevigatum, Astrea phoebia,* and *Tellina lineata*), 390 to 420cm below sediment surface.

4230 ± 140

UM-526. Core W-575-1B **2280 BC**

Small mollusk shells, bivalves and gastropods, 380 to 420cm below sediment surface.

5120 ± 140

UM-551. Core W-575-1C **3170 BC**

Assorted shells (primarily *Modiolus americanus* and *Astrea phoebia*), 440 to 455cm below sediment surface.

Shackleford Banks series

Samples from split-spoon cores on Shackleford Banks, Carteret Co, North Carolina, between (34° 39′ 28″ N, 76° 33′ 50″ W) and (34° 41′ 07″ N, 76° 38′ 45″ W). Coll 1973 and subm 1975 by K Susman, Duke Univ. See also (R, v 17, p 239).

General Comment (KS): dates stratigraphic sequence and local buried geomorphic features for Shackleford Banks.

UM-576. Shackleford Sh-3,18 **>36,320**

Mercenaria shells from 20.8m depth. *Comment* (KS): may be part of a Tertiary lag erosion surface.

14,880 ± 570

UM-581. Shackleford Sh-4,14 **12,930 BC**

Nuculana, Arca, and *Mulinia* shells from 15.2 to 15.8m depth. *Comment* (KS): mud sediment lies below sand recognized as inlet-filling sand. Question was whether this is Holocene transgression or Wisconsin mud.

23,590 ± 620

UM-577. Shackleford Sh-5,20 **21,640 BC**

Shell of unid. species in fine sand at 23.2m depth. *Comment* (KS): underlies a semi-indurated (Tertiary?) limestone.

+1420
26,950
−1720

UM-579. Shackleford Sh-8,13 **25,000 BC**

Mulinia, Crassostrea virginica, and *Arca* shells. *Comment* (KS): in sandy, silty clay believed to be a Pleistocene backbarrier sediment.

UM-582. Shackleford Sh-8,18 **>35,590**

Mercenaria shell from 22.7m depth. *Comment* (KS): helps date clay units that bracket shell-and-pebble lag.

470 ± 60

UM-574. Shackleford Sh-11,7 **AD 1480**

Peat. *Comment* (KS): located in what should be outcrop of marsh peat on front of barrier island.

+2000
29,280
−2680

UM-580. Shackleford Sh-11,16 **27,330 BC**

Mulinia, Tegolus, and *Arca* shells. *Comment* (KS): thought to be Pleistocene backbarrier bay mud.

11,270 ± 170

UM-578. Shackleford Sh-13,14 **9320 BC**

Unid. shell from 14m depth in matrix of sand. *Comment* (KS): part of a beach or inlet sequence.

11,340 ± 130

UM-575. Shackleford Sh-13,19 **9390 BC**

Unid. shell species from depth 21.6m. Matrix of sand. *Comment* (KS): thought to be former channel fill.

New Jersey Shelf series

Samples cored on secs of New Jersey shelf. Coll June 1974 by G L Freeland; subm Dec 1974 by WL Stubblefield, NOAA, Miami, Florida.

510 ± 70

UM-416. New Jersey Shelf, 1A-V6-50 1440 BC

Shell material near shore from depth 50cm (39° 25′ N, 74° 20′ W). *Comment* (WLS): to date late aggradation of flank of inner ridge crest.

670 ± 70

UM-417. New Jersey Shelf, 1A-V6-563-573 AD 1280

Shell material from 563 to 573cm depth in actively reworked Holocene sand on inner ridge crest (39° 25′ N, 74° 20′ W). *Comment* (WLS): dates ridge aggradation.

3980 ± 600

UM-412. New Jersey Shelf, 1B-V5-35 2030 BC

Shell material from 35cm depth in hydraulically active Holocene sediment (39° 08′ N, 74° 35′ W). *Comment* (WLS): late ridge aggradation in central ridge/swale system.

5600 ± 130

UM-418. New Jersey Shelf, 1B-V7-60 3650 BC

Shell hash from 60cm depth in hydraulically active Holocene sediment (39° 08′ N, 74° 05′ W). *Comment* (WLS): represents later flank aggradation on central shelf ridge.

4370 ± 250

UM-415. New Jersey Shelf, 1B-V7-221 2420 BC

Shell material from 221cm depth in recent Holocene sediment (39° 08′ N, 74° 05′ W). *Comment* (WLS): results determine amount of flank aggradation.

800 ± 60

UM-414. New Jersey Shelf, 1B-V9-20 AD 1150

Shell material from 20cm depth in central shelf trough (39° 08′ N, 74° 05′ W). *Comment* (WLS): expected to date development of sand ridges on inner central shelf.

2070 ± 130

UM-413. New Jersey Shelf, 1B-V10-2 120 BC

Shell material from 2cm depth in hydraulically active substrate from Holocene lagoon (39° 08′ N, 74° 05′ W). *Comment* (WLS): dates base of a ridge system.

3980 ± 190

UM-419. New Jersey Shelf, 1B-V10-40 2030 BC

Shell material from 40cm depth in Pleistocene sand of central trough area (39° 08′ N, 74° 05′ W). *Comment* (WLS): lower constraining date of Holocene lagoonal sediment.

Angelfish Creek series

Peat sequence from vertical exposure in wall of tidal pass, N Florida Keys, Florida (25° 20′ N, 80° 17′ W). Coll 1975 by R B Halley; subm 1975 by E A Shinn, USGS, Fisher I. sta, Miami, Florida.

UM-584.	**Angelfish Creek, 100cm**	**2090 ± 90 140 BC**
UM-585.	**Angelfish Creek, 150cm**	**2650 ± 90 700 BC**
UM-586.	**Angelfish Creek, 200cm**	**2850 ± 60 900 BC**
UM-587.	**Angelfish Creek, 250cm**	**3170 ± 70 1220 BC**
UM-588.	**Angelfish Creek, 300cm**	**3710 ± 70 1760 BC**
UM-589.	**Angelfish Creek, 350cm**	**3970 ± 100 2020 BC**
UM-590.	**Angelfish Creek, 400cm**	**4670 ± 70 2720 BC**
UM-591.	**Angelfish Creek, 450cm**	**4150 ± 150 2200 BC**
UM-592.	**Angelfish Creek, 480cm**	**4220 ± 80 2270 BC**
UM-593.	**Angelfish Creek, 490cm**	**4800 ± 100 2850 BC**

Sands Cut series

Peat sequence from vertical exposure in channel wall at Sands Cut, N Florida Keys, Florida (25° 28′ N, 80° 10′ W). Coll 1975 by R B Halley; subm 1975 by E A Shinn. Fisher I. sta.

General Comment (EAS): dates sea level change.

UM-607.	**Sands Cut, 0cm**	**360 ± 60 AD 1590**
UM-608.	**Sands Cut, 10cm**	**4160 ± 140 2210 BC**
UM-609.	**Sands Cut, 50cm**	**4080 ± 90 2130 BC**
UM-610.	**Sands Cut, 100cm**	**3980 ± 80 2030 BC**
UM-611.	**Sands Cut, 150cm**	**2580 ± 70 630 BC**
UM-612.	**Sands Cut, 200cm**	**2530 ± 80 580 BC**

UM-613. Sands Cut, 200cm **1740 ± 60 AD 210**

UM-594. Fort Lauderdale Reef **2580 ± 60 630 BC**

Coral *(A palmata)* sawed from dead sec of reef in 4.5m water off coast of Fort Lauderdale, Florida (26° 08′ 15″ N, 80° 05′ 05″ W). Coll 1975 by W Raymond, Britt Assocs, Miami; subm 1975 by E A Shinn. *Comment* (EAS): result to determine when this major reef builder died in area N of Miami. Estimated age: < 200 yr.

B. Martinique, West Indies

Mt Pelée series

Charcoal from pyroclastic surge sediments near Mt Pelée, Martinique, West Indies. Dates used to determine frequency of cyclic eruptions on Mt Pelée. Coll and subm by J Roobol and A L Smith, Univ Puerto Rico at Mayaguez.

UM-376. Pelée 211 **2670 ± 70 720 BC**

Sample in block ash sediment in rd sec near Fond Labour, SE side of Mt Pelée (14° 48′ 26″ N, 61° 05′ 51″ W).

UM-377. Pelée 332 **5190 ± 90 3240 BC**

Sample from dense laval in rd sec near Rivière Calava, SW Mt Pelée (14° 46′ 22″ N, 61° 08′ 47″ W).

UM-378. Pelée 332 **5310 ± 120 3360 BC**

Duplicate run of UM-377. *Comment* (JJS): average age of UM-377 and -378 is 5250 ± 70.

UM-379. Pelée 331 **8400 ± 210 6450 BC**

Sample from block and ash sediments in rd cut near Rivière Balisier (14° 46′ 33″ N, 61° 08′ 45″ W). *Comment* (ALS): important in correlating complex sequence of surge and pumice flow sediments from S Pelée.

UM-380. Pelée 381 **440 ± 120 AD 1510**

Sample from block and ash sediment of limited areal extent. Forms low banks in river bed, middle sec Rivière des Pères (14° 46′ 54″ N, 61° 10′ 00″ W). *Comment* (ALS): possibly represents latest prehistoric eruption.

UM-382. Pelée 381 **540 ± 110 AD 1410**

Duplicate run of UM-380. *Comment* (JJS): average age of UM-380 and -382 is 490 ± 80 yr.

1040 ± 90
UM-381. Pelée 448 **AD 910**

Sample from dense lava surge deposit, cliff sec, lower part of gorge of Rivière Claire (14° 46′ 09″ N, 61° 11′ 42″ W).

4020 ± 80
UM-410. Pelée 455 **2070 BC**

Sample from block and ash sediments, cliff sec, lower part of gorge of Rivière Claire (14° 46′ 46″ N, 61° 11′ 09″ W).

3990 ± 80
UM-411. Pelée 455 **2040 BC**

Duplicate run of UM-410. *Comment* (JJS): average age of UM-410 and -411 is 4005 ± 57 yr.

25,120 ± 450
UM-383. Pelée 302 **23,170 BC**

Sample from block and ash sediment, cliff sec in lower part of Rivière Precheur (14° 48′ 18″ N, 61° 13′ 26″ W). Comment (ALS): stratigraphically one of oldest deposits containing carbon.

2470 ± 80
UM-384. Pelée 450 **520 BC**

Sample from pumice flow cloud deposit, in rd to Morne Cocos (14° 49′ 09″ N, 61° 13′ 39″ W). *Comment* (ALS): important for stratigraphy of NW sector of Mt Pelée.

2430 ± 80
UM-385. Pelée 450 **480 BC**

Duplicate run of UM-384. *Comment* (JJS): average age of UM-384 and -385 is 2450 ± 57 yr.

+2350
36,100
−3340
UM-386. Pelée 388A **34,150 BC**

Sample from dense lava surge deposit in rd cut between Anse Belloville and Anse Ceron (14° 49′ 13″ N, 61° 13′ 53″ W).

7410 ± 130
UM-387. Pelée 344 **5460 BC**

Sample from pumice flow sediment in cliff sec near Macouba, Martinique (14° 50′ 14″ N, 61° 09′ 08″ W). *Comment* (ALS): only carbon sample from E side of volcano.

2150 ± 70
UM-426. Pelée 222 **200 BC**

Sample from pumice flow sediment in cliff sec, lower part of Rivière Pointe la Mare (14° 46′ 57″ N, 61° 12′ 50″ W). *Comment* (ALS): one of most important pumice flow sediments on W Pelée.

UM-427. Pelée 245 **4230 ± 120**
3280 BC

Sample from block and ash sediment on rd between Pointe La Mare and Le Precheur (14° 47′ 36″ N, 61° 13′ 25″ W). *Comment* (ALS): important in determining stratigraphy of older deposits on W.

UM-428. Pelée 310 **20,240 ± 610**
18,290 BC

Sample from block and ash sediment in cliff alongside rd between Le Precheur and Anse Belleville (14° 48′ 23″ N, 61° 13′ 52″ W).

UM-429. Pelée 311 **24,550 +1200 −1420**
22,600 BC

Sample from pumice flow in cliff and gully sec along rd immediately N of Le Precheur (14° 48′ 20″ N, 61° 13′ 50″ W).

UM-430. Pelée 410 **310 ± 60**
AD 1640

Sample from block and ash sediment in S bank near mouth of Rivière des Pères (14° 45′ 12″ N, 61° 11′ 03″ W).

UM-431. Pelée 439 **2560 ± 70**
610 BC

Sample from pumice flow cloud deposit in quarry on S bank near mouth of Rivière Seche (14° 45′ 43″ N, 61° 11′ 43″ W). *Comment* (ALS): important for correlation of late-prehistoric pumice flow sediments. UM-432 in sediment below but separated by marked unconformity.

UM-432. Pelée 440 **3940 ± 80**
1990 BC

Sample from dense lava surge sediment in quarry on S bank near mouth of Rivière Seche (14° 45′ 43″ N, 61° 11′ 43″ W). See also UM-431.

UM-433. Pelée 446 **1140 ± 70**
AD 810

Sample from thick airfall sediment in cliff sec, upper part of Rivière Seche (14° 47′ 11″ N, 61° 10′ 46″ W). *Comment* (ALS): only carbon obtained from an airfall sediment.

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