

**FLORIDA STATE UNIVERSITY RADIOCARBON DATES III**

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Age calculations in this list include samples dated since January, 1967. Samples are converted to benzene and counted in a liquid scintillation spectrometer. Operations are essentially the same as those described in Radiocarbon, 1966, v. 8, p. 46-53 and Radiocarbon, 1967, v. 9, p. 38-42. Modern reference is 95% the activity of NBS oxalic acid standard, not age-corrected wood as reported in Radiocarbon, 1966, v. 8, p. 46-53.

**SAMPLE DESCRIPTIONS**

**I. GEOLOGIC SAMPLES**

**SE U. S. Atlantic Shelf series**

Sample of calcareous oolites and oolitic beach rock encountered in continental shelf of SE United States. Since oolites are formed in warm, shallow agitated waters rich in  $\text{CaCO}_3$  (Pilkey, Schnitker, and Pevear, 1966), dates should give clues to ancient shorelines. Coll. and subm. 1966 by P. M. Terlecky and O. H. Pilkey.

+1440  
29,000

—1750  
27,050 B.C.

**FSU-168. North Carolina Shelf—1**

Oolites from depth 48m on shelf 70 mi E of Wilmington, North Carolina ( $34^\circ 12' 24''$  N Lat,  $76^\circ 42' 20''$  W Long).

+380  
22,630

—400  
20,680 B.C.

**FSU-173. North Carolina Shelf—2**

Oolites from depth 65m on shelf 75 mi SE of Wilmington, North Carolina ( $33^\circ 30' 30''$  N Lat,  $76^\circ 56' 18''$  W Long).

+2670  
20,730

—4030  
18,780 B.C.

**FSU-169. Florida—1**

Oolites from depth 45m on shelf 55 mi E St. Augustine, Florida ( $29^\circ 53' 30''$  N Lat,  $80^\circ 25' 18''$  W Long).

12,630  $\pm$  230  
10,680 B.C.

**FSU-170. Florida Shelf—2**

Oolitic beach rock from depth 48m on shelf 60 mi E of St. Augustine, Florida ( $29^\circ 53' 30''$  N Lat,  $80^\circ 21' 24''$  W Long).

13,500  $\pm$  200  
11,550 B.C.

**FSU-171. Florida Shelf—3**

Oolites from depth 70m on shelf 60 mi SE of Daytona Beach, Florida ( $28^\circ 54' 12''$  N Lat,  $80^\circ 06' 30''$  W Long).

**16,920 ± 200****14,970 B.C.****FSU-172. Florida Shelf—4**

Oolites from depth 35m on shelf 45 mi E of St. Augustine, Florida (29° 53' 30" N Lat, 80° 35' 30" W Long).

*General Comment:* expected correlation between age and depth was not found (*i.e.*, deepest were not oldest). Dates indicate some oolites deposited during last regression of sea were subsequently exposed to subaerial conditions (Terlecky, 1967). It appears that some oolites were exposed to some subaerial weathering without recrystallization (Pilkey, pers. commun.).

**Tongue of the Ocean series, Bahamas, B. W. I.**

Calcareous sediment from single piston core at 1750m (24° 40' 0" N Lat, 77° 33' 0" W Long), coll. and subm. 1967 by O. Pilkey for purpose of explaining fluctuations of carbonate mineralogy in relation to sea-level changes. Similar materials from same area have been dated and publ. previously (Radiocarbon, 1962, v. 4, p. 51-56 and Radiocarbon, 1963, v. 5, p. 23-33).

**6050 ± 165****4100 B.C.****FSU-269. Ocean Tongue—1**

73 to 77 cm core depth.

**9990 ± 200****8040 B.C.****FSU-270. Ocean Tongue—2**

110 to 115 cm core depth.

**FSU-271. Ocean Tongue—3**

210 to 214 cm core depth.

**>40,000****FSU-272. Ocean Tongue—4**

225 to 260 cm core depth. *Comment* (O.H.P.): dates show fairly fast rates of sedimentation. Correlation with previous dates in same area about as expected.

**>40,000****Oklawaha River Valley series, Florida**

Well-preserved wood from 2 localities in Oklawaha flood-plain alluvium exposed during excavation of Cross-Florida barge canal. Coll. 1967 by S. C. Happ for study of relationship between alluvial sedimentation and post-glacial rise of sea level and estuary filling.

Rodman Dam site, on Oklawaha R., 7 mi upstream from confluence with St. John's R. (29° 30' 0" N Lat, 81° 48' 0" W Long).

**FSU-254. Rodman—1**

Pine at sea level, 6 ft below surface.

**>38,000****FSU-255. Rodman—2**

Stem wood of bald cypress, 9 ft below MSL, 15 ft below surface.

**>40,000**

- FSU-256. Rodman—3** >40,000  
Wood, 5 ft below MSL, 11 ft below surface.  
Eureka Lock site, 17 mi up Oklawaha Valley from Rodman Dam  
(29° 23' 0" N Lat, 81° 54' 0" W Long).
- FSU-257. Eureka—1** 1350 ± 80  
A.D. 600  
Log, 8 ft above MSL, 13 ft below surface.
- FSU-258. Eureka—2** >40,000  
Root wood of bald cypress 14 ft above MSL, 7 ft below surface.
- FSU-259. Eureka—3** >40,000  
Wood, 5.5 ft above MSL, 16 ft below surface.
- FSU-260. Eureka—4** 310 ± 50  
A.D. 1640  
Bald cypress root, 7.5 ft above MSL, 14 ft below surface.
- FSU-261. Eureka—5** 3420 ± 150  
1470 B.C.  
*Comment* (S.C.H.): ages suggest surficial muck layer in Oklawaha floodplain has been accumulating for at least 3300 yrs. Underlying sands in places are apparently Pleistocene at depths as shallow as 6 ft, but are Recent in abandoned stream channels where accumulation has been more rapid (Happ, 1968).
- Cape Kennedy Barrier and Lagoon Complex series**  
Various carbonate materials dated by C-14 to serve as check for Th<sup>230</sup>/U<sup>234</sup> ages on same samples. All samples represent sea-level positions. Th<sup>230</sup>/U<sup>234</sup> ages indicate 3 significant age groupings. One group is Recent, another is approaching limits of our range, and 3rd is beyond our range.
- Miscellaneous materials coll. at low tide from modern beach littoral zone at Canova Pier on Eau Gallie Beach, Florida (28° 08' 20" N Lat, 80° 34' 45" W Long).
- FSU-232. Eau Gallie—1** 875 ± 80  
A.D. 1075  
Loose pelecypod shells.
- FSU-233. Eau Gallie—2** 4405 ± 150  
2455 B.C.  
Shell hash.
- FSU-234. Eau Gallie—3** 4010 ± 150  
2060 B.C.  
Lithified beach rock.
- FSU-235. Eau Gallie—4** 6240 ± 160  
4290 B.C.  
Sabellarid worm reef.

- 7515 ± 180**  
**5565 B.C.**
- FSU-236. Patrick—1**  
Sabellarid worm reef from littoral zone on modern beach at low tide opposite rocket exhibit at Patrick Air Force Base, Florida (28° 14' 00" N Lat, 80° 36' 00" W Long).
- 8325 ± 190**  
**6375 B.C.**
- FSU-238. Patrick—2**  
Shell hash.
- 7135 ± 175**  
**5185 B.C.**
- FSU-239. Patrick—3**  
Sabellarid worm reef.
- 2905 ± 90**  
**955 B.C.**
- FSU-263. Patrick—4a**  
White shell fragments.
- 8325 ± 180**  
**6375 B.C.**
- FSU-264. Patrick—4b**  
Black shell fragments from same sample as above.  
Miscellaneous materials coll. at low tide from modern beach littoral zone opposite air terminal at Patrick Air Force Base, Florida (28° 14' 45" N Lat, 80° 36' 05" W Long).
- 9645 ± 200**  
**7695 B.C.**
- FSU-247. Angel**  
Lithified coquina limestone from canal spoil, 1.6 mi S of State Rd. 520, Angel City (Merrit Is.), Florida (28° 20' 00" N Lat, 80° 39' 40" W Long).
- >38,000**
- FSU-268. Horti Point**  
Pelecypod shells from canal spoil, Horti Point (Merrit Is.), Florida (28° 19' 20" N Lat, 80° 39' 40" W Long). *Comment:* radiocarbon ages show no evidence of 2nd age grouping as revealed by Th<sup>230</sup>/U<sup>234</sup> ratios.
- Manasota Peninsula series**  
Manasota Peninsula is small spit of land near Englewood, Florida. Evolution of S end of peninsula has been disputed both geologically and legally. Dated to determine if spit evolved through accretion or as separate island which later was joined to mainland by hurricane activity.
- 3205 ± 50**  
**1255 B.C.**
- FSU-188. Manasota Peninsula—1**  
Shell fragments from core 18.5 to 20.5 ft below MSL. Boring site in alleged pass on S end of Manasota Peninsula, 3 mi S of Englewood, Florida (26° 54' 57" N Lat, 82° 21' 20" W Long).
- 1610 ± 45**  
**A.D. 340**
- FSU-189. Manasota Peninsula—2**  
Shell fragments from same core as Manasota—1, 3 to 4 ft below MSL.

**FSU-190. Manasota Peninsula—3** **1200 ± 50**  
**A.D. 750**

Shell fragments from core 6 to 6.5 ft below MSL from boring site ¼ mi S of Manasota—1 (26° 54' 37" N Lat, 82° 21' 13" W Long).

**FSU-191.** **940 ± 50**  
**A.D. 1010**

Shell fragments from core 18 to 18.5 ft below MSL from same core as Manasota —3.

*General Comment:* no geologic conclusions or legal interpretations have been derived concerning Manasota Peninsula. Both geologic phenomena mentioned have been described and Tanner (1961) reports both in general area of Manasota Peninsula.

**Stump Pass series, Florida**

Selected marine shells (*Chione cancellata*) obtained in stratigraphic and geomorphic study of coastal islands in N Charlotte Co., Florida by H. K. Brooks. Youngest beach deposits composing Palm Is. (Thornton Is.) and 2 samples from peninsula known to have formed N of Knight Is. between 1893 A.D. and 1924 A.D. were dated.

**FSU-291. Palm Is.—1** **1615 ± 90**  
**A.D. 335**

5 ft above MSL, (26° 53' 48" N Lat, 82° 20' 15" W Long).

**FSU-290. Knight Is.—1** **450 ± 50**  
**A.D. 1500**

1 to 2 ft above MSL, (26° 53' 15" N Lat, 82° 19' 55" W Long).

**FSU-292. Knight Is.—5** **500 ± 50**  
**A.D. 1450**

1 ft above MSL, (26° 53' 15" N Lat, 82° 20' 5" W Long). *Comment* (H.K.B.): FSU-290 and FSU-292 are known to be 1900 A.D. To clarify these anomalous dates on shell from deposit of known age, Recent live shells from beach are being dated (FSU-293).

**Fort Clinch State Park series, Florida**

Selected marine shells (mostly *Mulinia lateralis* and *Donax variabilis*) were dated from excavations in series of "beach ridges" at N end of Amelia Is., Nassau Co., Florida. Coll. 1967 by H. K. Brooks and I. D. Novak as part of a stratigraphic and geomorphic study of coastal features; preliminary report by Novak (1968), unpubl.

**FSU-226. Fort Clinch—1** **5140 ± 180**  
**3190 B.C.**

4 ft above MSL, (30° 41' 25" N Lat, 81° 26' 14" W Long).

**FSU-227. Fort Clinch—2** **4380 ± 480**  
**2430 B.C.**

0 to 1 ft above MSL, (30° 41' 38" N Lat, 81° 27' 4" W Long).

**FSU-228. Fort Clinch—3** **3650 ± 180**  
**1700 B.C.**  
0 to 2 ft above MSL, (30° 41' 25" N Lat, 81° 26' 5" W Long).

**FSU-294. Fort Clinch—4** **4100 ± 150**  
**2150 B.C.**  
0 to 2 ft below MSL, (30° 41' 30" N Lat, 81° 26' 40" W Long).

*Comment* (H.K.B.): oldest series of beach ridges appears to be regression sequence contemporaneous with Krane Key Stage (Fairbridge, 1958). FSU-228 is anomalous date on reworked shells in different sequence of beach ridges known to have been deposited in historic time.

#### Antarctic Ocean series

Barnacle shells dredged from 2 locations on Antarctic Ocean floor. Dated for comparison with similar barnacles previously dated by this lab (Radiocarbon, 1967, v. 9, p. 40).

**FSU-51. Scotia Ridge** **17,635 ± 360**  
**15,685 B.C.**  
*Hexalasma antarcticum* (59° 56' 8" Lat, 34° 37' 7" W Long) at depth 600 fms.

**FSU-253. Sars Bank** **12,340 ± 300**  
**10,390 B.C.**  
*Hexalasma aucklandicum* (68° 50' 0" S Lat, 59° 45' 0" W Long) at depth 660 to 870 fms.

#### II. ARCHAEOLOGIC SAMPLES

##### Sebastian Inlet series, Florida

Archaeologic excavations on barrier is. S of Sebastian Inlet in Brevard Co., Florida at "McClarty" and "Cato" sites by Ripley P. Bullen and Carl J. Clausen revealed evidence of 3 Indian occupations separated by marine deposits and washover. Lowest midden indicates sea level 5 ft or more lower than now (Bullen *et al.*, in press).

**FSU-183. Lower Midden** **2795 ± 50**  
**845 B.C.**  
2 ft below MSL, (27° 50' 0" N Lat, 80° 26' 0" W Long).

**FSU-196. Middle Midden** **1105 ± 65**  
**A.D. 825**  
1 to 1.5 ft above MSL, (27° 50' 0" N Lat, 80° 26' 0" W Long).

**FSU-197. Chione Midden—1** **1035 ± 65**  
**A.D. 915**  
5 ft above MSL, (27° 50' 0" N Lat, 80° 26' 0" W Long).

**FSU-210. Chione Midden—2** **1090 ± 50**  
**A.D. 860**  
2.5 ft above MSL, (27° 50' 0" N Lat, 80° 26' 0" W Long).

## REFERENCES

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