

REPORT ON REFERRED FOSSILS

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STRATIGRAPHIC RANGE	Upper Cretaceous	SHIPMENT NUMBER	WR-81-1
GENERAL LOCALITY	Georgia	REGION	Johnson Co.
QUADRANGLE OR AREA	See report WR-81-1, dated 1-14-81	DATE RECEIVED	12-01-80
KINDS OF FOSSILS	Pollen	STATUS OF WORK	Incomplete
REFERRED BY	Harold Gill and Dave Prowell	DATE REPORTED	02-18-81
REPORT PREPARED BY	Ray Christopher		

Project - Water Resources Division

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Palynology report on the Wrightsville core sample at 1200 ft.

(Locality data on the Wrightsville borehole can be found in my report WR-81-1, dated 1-14-81).

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This one is a real bear.

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The sample contains an abundance of well preserved spores and pollen. Dinoflagellates are very rare (2 specimens observed), and from this I conclude that deposition occurred in a very restricted marine, if not terrestrial, environment. The presence of numerous large, thick-walled, coarsely ornamented spores supports such a conclusion, as these forms are rarely transported far from their place of origin.

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Although abundant, pollen diversity is low to moderate. The dominant form (by far) is a species very similar to that illustrated by Jack Wolfe as CP3E-1. Jack considered this species to range from just below the boundary between his zones CA-2 and CA-3 to the top of zone CA-5 (see attached zonal scheme). However, I have observed similar forms from both the Magothy and Eutaw Formations (zone V). Hence, this species, which I refer to as ?HOLKOPOLLENITES sp. C, is not a very good biostratigraphic marker.

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Two other forms occur in the sample that may, however, provide a more precise age for the Wrightsville sample at 1200 ft. Unfortunately, both forms are extremely rare and poorly preserved, so my identifications may not be all that reliable. One form (HOLKOPOLLENITES sp. A) is known to occur from the base of zone V into the basal part of zone CA-2B. The other (POROCOLPOPOLLENITES spp.) is restricted to zone V. If my identifications are correct, then the Wrightsville sample at 1200 ft is probably slightly below or slightly above the upper boundary of pollen zone V, and would be late Santonian to earliest Campanian in age. Another form, CP3-34, also occurs in the sample that indicates a late zone V or early zone CA-2 age for the sample. This species ranges from the base of zone V into zone CA-5, but only the early forms (i.e., zone V and early zone CA-2) have a reticulation as coarse as that observed on the Wrightsville sample forms at 1200 ft. @

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With regard to correlations, the Wrightsville sample at 1200 ft is probably equivalent to the upper Eutaw or basal Blufftown Formations of the Chattahoochee River region. I have not observed anything as old as this sample from the Midville core, nor from the Black Creek Formation of the Cape Fear River.

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Species list - Wrightsville sample at 1200 ft

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?HOLKOPOLLENITES sp. C

HOLKOPOLLENITES sp. A (?)

POROCOLPOPOLLENITES spp. (?)

CP3-34 (coarse reticulation)

CP3-14 @



 Ray Christopher

SYSTEM		SERIES		EUROPEAN STAGE	PROVINCIAL STAGE	POLLEN ZONE	
CRETACEOUS	UPPER CRETACEOUS	MAESTRICHTIAN		NAVARROAN		CA-6/MA-1	
		CAMPANIAN	UPPER	TAYLORAN	CA-5		
			LOWER		CA-4		
		SANTONIAN		AUSTINIAN	CA-3		
		CONIACIAN			CA-2		
		TURONIAN		EAGLEFORDIAN	V	C	
		CENOMANIAN			IV	B	
		WOODBINIAN		III	A		
		LOWER CRETACEOUS	ALBIAN	UPPER	WASHITAN	II	C
				MIDDLE	FREDERICKSBURGIAN		B
	LOWER			TRINITIAN	A		
	APTIAN TO BARREMIAN		NUEVO LEONIAN	I			

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STRATIGRAPHIC RANGE	Eocene	SHIPMENT NUMBER	WR-81-1
GENERAL LOCALITY	Georgia	REGION	Johnson Co.
QUADRANGLE OR AREA	no quad yet	DATE RECEIVED	7/81
KINDS OF FOSSILS	Dinoflagellates	STATUS OF WORK	Incomplete
REFERRED BY	Harold Gill and Dave Prowell	DATE REPORTED	7/14/81
REPORT PREPARED BY	Lucy Edwards		

Project -- Water Resources Division

This report deals with two stray Tertiary samples that Ray Christopher found lurking in his collections. They are from the Wrightsville core at 407 and 191 feet. This corehole is located near the Forestry Commission fire tower, 1.89 mi. S of the junction of U.S. 319 and Ga. rte. 15, lat. 32.4209 deg. N., long. 82.4304 deg. W., Johnson Co., Georgia.

407 ft. Age is latest half of middle Eocene. Sample correlates with upper Lisbon or Gosport in the Gulf Coast, Santee in South Carolina. Dinos present are ---

CORDOSPHAERIDIUM GRACILE
CORRUDINIUM INCOMPOSITUM

DEFLANDREA grp. sp.
PENTADINIUM N. SP. B

191 ft. Age is probable late Eocene. Sample seems to correlate with Yazoo in the Gulf Coast, lower Cooper in South Carolina. This sample is a tiny bit strange, there may be some younger stuff mixed in. Dinos present are ---

ADNATOSPHAERIDIUM sp.
AREOSPHAERIDIUM ARCUATUM
?BATIACASPHAERA BACULATA
BATIACASPHAERA COMPTA
CORDOSPHAERIDIUM GRACILE
DEFLANDREA cf. HETEROPHLYCTA
DISTATODINIUM sp.
HOMOTRYBLIUM PLECTILUM

KISSELOVIA COLEOTHRYPTA
LEJEUNIA sp.
PENTADINIUM LATICINCTUM
PHTHANOPERIDIUM COMATUM
SAMLANDIA CHLAMYDOPHORA
SPINIFERITES ? MIRABILIS
TECTATODINIUM PELLITUM
THALASSIPHORA PELAGICA

P.S. It is nice to be appreciated.

P.P.S. I have finished up the Laurens Core. Now all I have to do is overcome the inertia and write it up for you. @

Lucy

Lucy E. Edwards

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Harold Gill

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STRATIGRAPHIC RANGE	Upper Cretaceous	SHIPMENT NUMBER	WR-81-1
GENERAL LOCALITY	Georgia	REGION	Johnson Co.
QUADRANGLE OR AREA	See report WR-81-1, dated 1-14-81	DATE RECEIVED	12-1-80
KINDS OF FOSSILS	Pollen	STATUS OF WORK	Incomplete
REFERRED BY	Harold Gill and Dave Prowell	DATE REPORTED	1-27-81
REPORT PREPARED BY	Ray Christopher		

Project - Water Resources Division

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Palynology report on Wrightsville core samples at 1100 and 1103 ft, and a re-evaluation of the age and zonal assignment of the Midville core sample at 903.1-903.5 ft. (Locality data on the Wrightsville borehole can be found in my report WR-81-1, dated 1-14-81).

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I found no significant differences between the assemblages from the two Wrightsville samples, either in terms of age or possible depositional environment.

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Dinoflagellates are present in both samples, but they occur as rare elements, suggesting a lagoonal, near-shore, or other restricted marine environment of deposition. This is in sharp contrast to their overwhelming abundance at 918 ft.

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In terms of age, zonal assignment, and correlations, I feel that the Wrightsville samples are of latest early or earliest late Campanian Age, and can be assigned to either the uppermost part of zone CA-4 or the basal part of zone CA-5. This conclusion is based on the occurrence of 4 species listed by Jack Wolfe as having biostratigraphic importance in the New Jersey section. Jack documented the last stratigraphic occurrence (upsection) of 2 of these (COMPLEXIOPOLLIS ABDITUS and HOLKOPOLLENITES sp. B) in zone CA-4, and the first appearance of the other 2 (HOLKOPOLLENITES cf. H. CHEMARDENSIS and PLICAPOLLIS USITATUS) from the basal part of zone CA-5. In other words, their ranges do not overlap in New Jersey, whereas they occur together in the Wrightsville assemblages at 1100 and 1103 ft. Because an unconformity separates zones CA-4 and CA-5 in New Jersey, it is possible that the Wrightsville section at 1100-1103 ft represents the missing New Jersey section.

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With regard to correlations elsewhere in the Coastal Plain, the Wrightsville samples at 1100 and 1103 ft are biostratigraphically equivalent to: @

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1. The Black Creek Formation as it occurs between Big Sugar Loaf and Walkers Bluff on the Cape Fear River (i.e., between mileposts 64 and 60),

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2. Some part of the Midville core near, but slightly below, 903.1-903.5 ft,

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3. Either the basal Cussetta or upper part of the Blufftown Formation of the Chattahoochee River region (I have not worked this part of the section, so I cannot pin down the correlation more precisely).

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In preparing this report, I re-examined my notes on the Midville core sample at 903.1-903.5 ft, with the result that I would now like to emend my report on that sample (report WR-80-2, dated 12-8-80). In addition to the species listed in my earlier report, the sample contains 2 species not mentioned, but which I have subsequently come to consider as having biostratigraphic potential (species NN-3 and N15-19). These 2 species have their lowest concurrence at Walkers Bluff (milepost 60, Cape Fear River, North Carolina), and, based on other species in the sample, the Midville sample can be no younger than the top of the Black Creek Formation which occurs at Donoho Creek Landing (milepost 50.5, Cape Fear River). As a result of this re-evaluation, I am quite sure that the Wrightsville samples at 1100 and 1103 ft are biostratigraphically close to, but slightly older than, the Midville sample at 903.1-903.5 ft. This biostratigraphic interpretation is based on the occurrence of forms C1-42, CP3syn-4, P3-5, and CP3-108 in the Wrightsville samples. On the Cape Fear River, their concurrence is restricted to strata between mileposts 64 and 60 (i.e., immediately upstream, or downsection, from strata equivalent to the Midville sample at 903.1-903.5 ft). I have attached a map of the Cape Fear River showing the occurrence of strata that I consider equivalent to the Wrightsville and Midville samples.

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Also attached to this report is the logs of both the Midville and Wrightsville cores showing the suggested biostratigraphic correlations thus far proposed. @

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Species list - Wrightsville core samples at 1100 and 1103 ft.

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	1100 ft	1103 ft
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COMPLEXIOPOLLIS ABDITUS	+	+
COMPLEXIOPOLLIS sp. D	+	+
PLICAPOLLIS RUSTICUS	+	
aff. PLICAPOLLIS sp. A	+	
N20-2	+	+
PROTEACIDITES sp. A	+	+
PRAECURSIPOLLIS PLEBIUS	+	
C1-42	+	+
CP3-4	+	+
HOLKOPOLLENITES cf. H. CHEMARDENSIS	+	+
?HOLKOPOLLENITES sp. C	+	+
CP3-57	+	
PLICAPOLLIS RETUSUS	+	
CP3-97	+	
OSCULAPOLLIS AEQUALIS	+	
N6-23	+	
P3-4	+	
PP-7a	+	
C1-25b	+	
CP3-34	+	
PLICAPOLLIS USITATUS	+	?
C1-44	+	
CP3-82		+
P3-5		+
C3-26		+
HOLKOPOLLENITES sp. B		+
CP3syn-4		+
CP3-108		+
C1-43		+ @

Ray
Ray Christopher

NF.