JOURNAL OF VERTEBRATE PALEONTOLOGY
SUPPLEMENTARY DATA

For

Pygmy sperm whales (Odontoceti, Physeteroidea, Kogiidae) from the Pliocene of Florida
and North Carolina

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TABLE S1. Measurements (in mm) of periotics of extant *Kogia* spp. (modified from Kasuya, 1973:table 3).

<i>K. sima</i>	MLP	PTA	MWP	DFE	DFP	LPP	WPP	DCP
UF 18705	27.21	11.54	16.76	1.18	2.38	11.32	8.47	11.02
UF 18706	26.31	11.85	18.75	1.04	1.98	11.39	9.76	10.91
UF 24629	24.13	11.09	17.30	0.75	2.12	9.60	7.30	11.17
UF 25573	26.66	12.25	18.27	0.65	1.75	10.66	8.41	11.24
UF 25575	24.48	10.47	15.63	1.18	1.96	10.16	10.65	10.52
UF 25576	25.72	12.73	18.16	0.72	1.81	11.01	10.06	10.16
UF 25577	28.57	14.41	18.46	0.75	2.24	11.88	8.06	11.00
UF 25578	26.21	12.38	17.82	0.98	2.05	10.69	8.92	10.90
<i>K. breviceps</i>								
UF 13562	29.81	14.97	20.14	1.16	2.66	12.49	9.69	12.19
UF 14213	29.67	13.74	21.30	0.87	2.98	11.43	9.30	13.15
UF 14214	27.92	13.82	20.30	0.83	2.40	11.78	8.97	12.38
UF 17532	28.13	14.00	19.71	0.68	2.67	11.32	9.44	11.62
UF 18702	27.54	14.42	18.59	0.95	2.47	10.45	8.87	11.70
UF 18704	29.30	14.62	19.85	0.67	2.64	11.83	8.71	11.05
UF 19128	27.33	13.25	18.68	0.79	2.67	10.54	7.34	12.34
UF 25545	29.22	14.59	20.13	0.67	2.62	11.16	7.93	11.87

Abbreviations: **DCP**, diameter of cochlear portion; **DFE**, least distance between margin of fundus of internal auditory meatus and aperture for endolymphatic duct; **DFP**, least distance between margin of fundus of internal auditory meatus and aperture for perilymphatic duct; **LPP**, length of articular surface of posterior process; **MLP**, maximum length of periotic; **MWP**, maximum width of periotic; **PTA**, proximal thickness of anterior process; **WPP**, width of articular surface of posterior process.

TABLE S2. Measurements (in mm) of kogiid periotics from the Upper Bone Valley Formation (modified from Kasuya, 1973:table 3).

	MLP	PTA	MWP	DFE	DFP	LPP	WPP	DCP
UF 132932	43.59	15.89	28.02	2.59	4.51	19.77	19.44	15.70
UF 132958	39.98	15.60	22.60	2.30	3.97	14.35	14.72	14.25
UF 132967	-	13.82	23.76	1.78	3.93	-	-	15.64
UF 135933	40.05	15.54	22.75	1.98	3.12	15.99	15.00	15.94
UF 135934	40.07	16.60	25.63	1.97	4.21	16.30	17.06	16.19
UF 135967	40.49	15.47	22.90	1.75	3.32	15.41	16.25	15.42
UF 201842	39.45	15.54	21.84	1.71	3.44	15.38	14.63	14.74
UF 203144	43.58	16.45	26.35	1.62	3.32	21.17	15.89	16.31
UF 203164	-	12.23	20.07	1.69	2.65	-	-	11.78
UF 203165	40.40	15.34	24.16	1.98	3.67	16.40	14.33	15.40
UF 203166	45.62	17.19	28.42	1.50	3.58	21.66	18.67	17.16
UF 203185	44.75	15.56	23.49	1.65	3.68	21.13	16.57	15.34
UF 203525	43.65	16.86	25.53	1.53	4.48	19.80	-	16.10
UF 203526	40.58	15.72	25.53	1.67	3.99	18.03	18.03	15.75
UF 209105	43.69	15.84	22.84	1.62	3.57	20.60	16.78	15.80

Abbreviations: **DCP**, diameter of cochlear portion; **DFE**, least distance between margin of fundus of internal auditory meatus and aperture for endolymphatic duct; **DFP**, least distance between margin of fundus of internal auditory meatus and aperture for perilymphatic duct; **LPP**, length of articular surface of posterior process; **MLP**, maximum length of periotic; **MWP**, maximum width of periotic; **PTA**, proximal thickness of anterior process; **WPP**, width of articular surface of posterior process.

TABLE S3. Measurements (in mm) of kogiid periotics from the Yorktown Formation (modified from Kasuya, 1973:table 3).

	MLP	PTA	MWP	DFE	DFP	LPP	WPP	DCP
USNM 26278	41.40	12.90	21.50	0.50	2.20	19.00	17.50	15.00
USNM 182961	41.00	13.00	22.00	1.00	2.50	17.00	17.00	14.50
USNM 183010	39.30	11.50	21.50	0.90	3.20	14.50	16.00	14.50
USNM 251081	47.80	12.00	25.00	2.00	4.00	22.00	21.00	17.50
USNM 251083	36.00	11.00	20.00	1.00	2.50	13.10	15.80	13.90
USNM 251084	36.10	11.90	20.00	1.80	3.50	14.00	12.50	11.80
USNM 251085	37.50	11.70	20.00	1.80	3.00	15.00	15.00	13.00
USNM 251087	38.00	10.00	20.80	1.80	3.00	16.00	16.00	14.50
USNM 251088	40.00	10.00	22.00	2.00	2.80	16.00	14.00	14.00
USNM 251089	39.00	11.00	21.00	1.50	3.00	15.00	13.50	14.50
USNM 251092	37.00	10.00	20.00	1.20	3.00	13.50	12.30	13.00
USNM 251093	37.50	13.00	19.50	0.80	1.80	15.00	13.00	13.00
USNM 251094	37.00	10.00	22.80	1.00	3.00	14.00	14.30	14.00
USNM 251096	38.50	12.90	23.00	1.00	3.00	14.00	14.00	15.30
USNM 251099	36.50	10.00	20.50	1.00	2.80	14.00	13.00	13.00
USNM 251101	40.00	13.00	22.00	1.00	3.00	16.00	17.00	14.50
USNM 251102	39.50	10.00	22.90	1.30	3.00	16.20	16.00	14.30
USNM 251103	40.00	11.00	23.00	0.90	3.10	18.50	15.90	14.50
USNM 251104	39.00	11.00	20.00	1.00	2.50	15.00	15.10	14.00
USNM 251105	44.00	15.00	24.80	1.50	4.00	16.20	15.90	17.00

TABLE S3. (Continued).

	MLP	PTA	MWP	DFE	DFP	LPP	WPP	DCP
USNM 251109	39.00	11.80	22.50	2.00	3.50	16.00	15.00	15.00
USNM 251110	40.00	12.00	20.50	1.00	3.00	15.00	16.00	15.00
USNM 251111	41.90	13.00	22.90	1.50	3.00	15.00	15.20	15.00
USNM 251112	44.30	11.80	23.50	1.50	3.00	21.00	18.50	15.80
USNM 251113	44.50	13.50	24.00	1.50	3.50	20.50	16.00	16.50
USNM 251114	42.00	13.00	23.00	2.00	3.30	15.30	16.00	16.50
USNM 251115	41.00	10.00	19.80	1.00	3.00	17.00	16.50	14.00
USNM 251117	34.00	10.00	18.20	2.00	3.00	11.80	11.00	12.50
USNM 251119	38.00	12.00	21.00	1.00	2.20	13.80	15.80	13.00
USNM 251121	39.00	10.00	20.00	1.00	3.00	15.00	16.90	14.30
USNM 251123	42.50	13.80	22.00	1.00	2.50	18.60	16.10	13.80
USNM 251124	34.50	11.00	21.00	1.00	3.00	12.00	15.80	13.00
USNM 251125	34.50	0.90	18.80	2.00	3.00	13.20	13.00	12.50
USNM 251128	36.50	10.00	22.00	1.00	3.50	14.00	14.30	14.50
USNM 251133	43.00	11.00	24.70	2.00	3.50	17.00	17.00	16.00
USNM 251136	39.00	12.00	21.50	1.30	2.90	16.00	14.50	13.80
USNM 251142	43.00	13.00	22.50	1.50	3.00	14.00	16.80	15.00
USNM 251144	41.80	11.50	22.00	2.00	3.00	17.50	15.00	13.90
USNM 251145	40.70	11.30	22.00	2.00	3.80	18.00	18.00	15.50
USNM 251146	49.00	12.80	25.00	1.50	4.00	21.00	21.00	17.00

TABLE S3. (Continued).

	MLP	PTA	MWP	DFE	DFP	LPP	WPP	DCP
USNM 251147	39.00	13.50	23.00	1.00	3.30	15.00	17.00	15.00
USNM 251149	38.30	11.90	20.00	1.50	3.00	15.00	12.50	13.00
USNM 314779	38.00	11.50	20.00	1.00	3.00	14.00	13.00	12.00
USNM 328219	43.00	13.00	23.00	1.00	3.00	18.00	15.00	15.00
USNM 328221	38.00	12.00	20.50	1.00	2.00	15.50	15.00	12.00
USNM 328222	42.00	11.00	22.00	1.00	3.00	20.00	16.50	21.00
USNM 328223	43.00	11.00	19.00	1.50	2.00	13.00	13.00	13.00
USNM 328225	37.00	11.00	21.00	1.00	2.00	15.00	13.80	14.00
USNM 328225	41.50	12.50	23.80	1.50	4.00	19.50	15.00	16.00
USNM 328226	39.00	10.00	21.00	1.00	3.00	15.50	17.50	15.00
USNM 328227	41.00	12.00	23.00	2.00	2.30	16.30	14.00	16.00
USNM 328228	39.00	11.00	13.50	2.00	3.00	16.00	15.00	16.50
USNM 328229	39.00	12.00	22.00	1.50	3.00	15.50	11.00	14.50
USNM 328233	41.00	12.00	24.00	0.90	3.50	19.00	18.50	15.50
USNM 328234	40.00	11.00	22.00	1.00	3.00	17.50	16.00	13.50
USNM 328235	41.00	11.00	24.00	1.00	4.00	18.00	15.00	15.80
USNM 328236	47.00	13.00	25.00	1.00	4.00	20.00	19.50	16.50
USNM 328237	41.00	11.00	23.00	1.20	4.00	16.50	17.00	16.00
USNM 328238	40.80	11.00	22.00	1.50	3.50	18.00	16.00	16.00
USNM 328239	43.00	13.00	24.00	1.50	3.00	19.50	16.50	25.50

TABLE S3. (Continued).

	MLP	PTA	MWP	DFE	DFP	LPP	WPP	DCP
USNM 328240	39.00	11.50	19.00	2.00	3.00	18.00	14.00	13.50
USNM 328240	43.00	12.50	24.00	1.50	3.00	19.00	16.00	17.00
USNM 328241	39.50	12.00	22.00	1.50	3.00	17.00	15.00	15.50
USNM 328242	35.00	10.00	19.00	0.90	2.00	14.00	12.00	13.00
USNM 328243	39.00	11.80	22.00	0.50	3.00	16.00	17.00	16.00
USNM 328244	39.00	12.00	21.00	2.00	3.00	15.00	16.00	13.30
USNM 328245	42.00	12.00	23.00	2.00	4.00	18.00	15.00	14.00
USNM 328246	37.50	13.50	21.50	2.00	3.00	14.00	15.00	15.00
USNM 328247	38.00	12.00	22.50	2.00	3.00	15.00	14.50	15.00
USNM 328248	38.00	11.50	22.00	2.00	3.00	15.00	18.50	16.00
USNM 328249	44.00	12.40	24.00	2.00	3.50	17.50	17.00	15.00
USNM 328250	39.00	12.50	23.00	1.50	3.00	16.00	14.00	17.00
USNM 328251	40.00	11.00	22.00	1.30	3.00	18.00	17.00	15.00
USNM 328252	39.00	11.00	21.50	2.00	3.50	15.50	15.00	15.00
USNM 328254	38.50	11.00	21.00	1.50	3.00	15.00	15.00	15.00
USNM 328255	41.50	12.00	22.50	1.00	3.00	19.00	18.50	15.50
USNM 328256	42.00	12.50	23.80	1.00	3.00	19.00	17.00	15.00
USNM 328257	41.00	12.00	22.80	2.00	-	17.50	15.80	16.80
USNM 328261	37.00	10.00	21.00	2.00	3.00	15.00	14.00	14.50
USNM 328348	35.00	11.50	19.50	2.00	3.00	14.50	14.00	13.00

TABLE S3. (Continued).

	MLP	PTA	MWP	DFE	DFP	LPP	WPP	DCP
USNM 328349	41.50	11.00	13.00	0.50	2.00	18.00	16.50	15.00
USNM 328350	37.00	11.00	20.00	1.00	3.00	15.30	13.80	14.00
USNM 347955	37.00	12.00	20.50	2.00	3.00	15.00	13.00	14.00
USNM 357188	40.00	11.00	21.00	1.00	3.00	17.00	18.00	14.00
USNM 357188	42.00	12.00	24.00	1.80	3.50	19.00	18.50	17.00
USNM 357188	43.00	11.50	24.00	1.50	-	18.80	16.00	14.50
USNM 357189	36.00	10.80	21.00	1.00	3.50	13.50	15.00	15.50
USNM 357189	38.30	13.00	22.00	1.00	3.00	15.00	16.00	16.00
USNM 357189	45.00	12.80	24.00	1.30	4.00	19.50	16.00	17.00
USNM 357189	45.30	12.80	24.00	2.00	4.00	23.50	18.00	17.00
USNM 357189	46.00	13.00	25.00	2.00	3.50	18.00	17.00	17.00
USNM 364153	39.50	11.00	24.00	1.00	4.00	17.00	16.50	17.00
USNM 364155	35.00	10.80	19.80	2.00	3.00	14.00	14.00	13.00
USNM 364156	37.50	11.00	20.00	2.00	3.00	15.30	13.00	13.00
USNM 364157	36.00	9.80	21.30	2.00	-	14.5	12.00	14.00
USNM 364158	42.00	12.00	23.00	2.00	4.00	17.50	18.00	16.00
USNM 364160	35.00	10.00	21.00	1.00	2.50	15.50	14.50	13.50
USNM 364162	35.50	11.00	20.00	1.80	3.00	15.50	14.00	12.50
USNM 364163	40.80	12.50	24.20	1.80	3.50	18.00	17.50	16.00
USNM 364164	38.50	11.30	21.50	2.30	3.00	17.00	16.00	14.00

TABLE S3. (Continued).

	MLP	PTA	MWP	DFE	DFP	LPP	WPP	DCP
USNM 364165	38.00	11.50	21.00	1.00	3.20	15.00	13.00	14.00
USNM 364166	38.30	10.50	22.50	1.50	3.00	16.00	16.00	15.00
USNM 364167	41.00	12.00	24.50	2.00	3.50	18.00	18.00	15.50
USNM 364168	40.00	10.00	22.00	1.80	2.80	16.00	17.00	14.20
USNM 364169	36.50	10.50	21.00	1.00	3.00	14.50	14.00	15.00
USNM 364171	37.50	10.00	20.00	1.00	3.50	17.00	15.50	13.50
USNM 364183	35.00	11.00	20.00	2.00	3.50	13.00	13.50	13.00
USNM 364184	35.00	10.00	20.00	1.00	2.00	14.00	14.00	13.00
USNM 364185	37.00	11.50	22.00	1.50	3.80	17.00	16.00	15.50
USNM 364186	39.00	12.00	22.00	2.00	3.00	16.50	14.50	13.50
USNM 364187	37.00	11.00	22.00	1.50	3.00	15.00	14.00	14.00
USNM 364203	44.30	12.50	26.00	1.00	3.50	20.00	18.50	18.00
USNM 364204	43.00	12.00	24.00	1.50	3.50	19.00	16.00	16.00
USNM 364205	39.00	11.00	21.50	2.50	3.50	14.00	15.00	13.50
USNM 364206	38.20	10.80	21.00	1.00	2.80	14.30	13.00	14.00
USNM 364208	40.00	11.50	22.00	1.00	3.50	16.00	15.00	14.50
USNM 364224	39.00	12.00	22.00	0.90	3.00	16.00	17.00	24.50
USNM 364372	45.30	12.00	26.00	1.30	4.00	20.00	20.30	16.00
USNM 364373	40.00	10.50	22.00	2.00	3.00	15.00	18.00	15.50
USNM 447484	45.00	13.00	27.00	1.40	4.00	22.00	17.50	16.00

TABLE S3. (Continued).

	MLP	PTA	MWP	DFE	DFP	LPP	WPP	DCP
USNM 447484	44.00	13.00	25.00	1.80	4.00	21.00	18.50	17.00
USNM 447505	42.80	11.50	24.00	1.50	4.00	19.80	16.00	17.00
USNM 452416	34.00	11.00	19.00	1.50	2.50	12.50	13.00	12.00
USNM 452416	39.50	12.00	22.00	1.50	3.20	14.00	14.00	15.00
USNM 452416	43.20	12.00	25.00	1.30	4.00	19.00	18.00	17.00
USNM 452417	37.00	11.00	20.00	1.00	2.50	15.00	14.00	13.00
USNM 452418	42.00	11.00	22.00	1.50	3.00	17.00	14.50	14.50
USNM 452420	46.00	12.60	25.00	1.00	3.50	21.00	19.00	19.50
USNM 452421	38.50	12.50	21.50	1.50	3.00	16.00	14.50	14.00
USNM 452423	37.80	10.50	21.00	1.50	3.00	15.00	13.00	14.80
USNM 452424	38.30	11.50	20.00	1.00	3.00	15.00	16.00	13.20
USNM 452425	41.30	12.50	24.00	1.00	3.20	15.00	16.00	17.00
USNM 452426	35.00	10.30	18.50	1.00	2.50	13.00	12.50	12.50
USNM 452429	36.00	12.00	21.00	0.90	3.00	14.30	14.00	13.30
USNM 454757	39.00	11.00	22.00	1.00	3.50	16.00	15.00	17.00
USNM 454757	45.00	11.50	24.00	1.30	3.00	19.50	18.00	17.00
USNM 454758	39.00	12.00	24.00	1.00	3.00	15.50	18.00	15.00
USNM 454760	40.00	12.00	23.00	1.00	3.50	16.00	15.50	15.00
USNM 454760	44.00	12.00	23.00	1.50	3.00	18.00	17.00	15.00
USNM 454761	37.00	10.50	22.00	1.00	3.00	13.50	14.00	14.00

TABLE S3. (Continued).

	MLP	PTA	MWP	DFE	DFP	LPP	WPP	DCP
USNM 457187	37.00	10.80	20.00	1.00	8.00	16.00	12.90	15.00
USNM 457187	43.00	11.50	23.00	1.30	3.00	18.00	18.00	15.00
USNM 457187	45.00	10.00	24.00	1.50	4.00	19.00	18.50	17.50
USNM 457190	43.00	12.50	23.00	1.50	4.00	18.00	16.80	14.50
USNM 457191	46.50	12.00	25.00	0.90	3.00	23.00	20.00	17.00
USNM 457192	41.00	12.30	22.00	1.50	3.00	17.00	14.80	16.00
USNM 457193	42.00	12.00	24.00	1.50	3.50	18.50	16.00	17.00
USNM 457194	37.00	12.00	23.00	2.00	4.00	15.00	17.00	15.00
USNM 457196	37.00	12.50	20.50	1.00	2.00	15.00	14.50	13.00
USNM 508036	38.00	12.00	20.00	2.00	2.80	14.50	15.00	13.00
USNM 508036	38.00	11.50	19.80	1.50	2.50	14.00	15.00	13.00
USNM 1829449	39.00	14.00	24.20	1.00	3.20	15.00	17.10	16.00
LACM 37258	42.6	14.5	25.6	1.1	4.2	20.1	18.5	17.1
LACM 37259	-	12.4	25.4	1.9	3.8	-	-	17.2
LACM 37260	39.9	12.4	20.5	1.7	3.5	15.4	16.0	14.2
LACM 37261	37.3	10.5	24.2	1.3	3.2	14.0	16.3	14.0
LACM 37262	34.3	9.5	18.4	1.7	3.6	12.4	11.7	12.6
LACM 135743	-	13.9	24.7	1.8	4.5	14.4	15.6	17.1

Abbreviations: **DCP**, diameter of cochlear portion; **DFE**, least distance between margin of fundus of internal auditory meatus and aperture for endolymphatic duct; **DFP**, least distance between margin of fundus of internal auditory meatus and aperture for perilymphatic duct; **LPP**, length of articular surface of posterior process; **MLP**, maximum length of periotic; **MWP**, maximum width of periotic; **PTA**, proximal thickness of anterior process; **WPP**, width of articular surface of posterior process.

TABLE S4. Measurements (in mm) of aff. *Kogia* sp. periotics from the Yorktown Formation. (modified from Kasuya, 1973:table 3).

	MLP	PTA	MWP	DFE	DFP	LPP	WPP	DCP
USNM 251148	28.20	10.00	20.00	1.00	1.50	11.30	8.00	10.00
USNM 328315	28.50	9.00	18.50	0.50	1.00	13.00	9.50	12.00
USNM 328315	28.8	9.30	20.00	0.20	1.50	13.00	10.00	11.00
USNM 364172	25.50	9.00	17.00	0.50	1.50	10.00	8.00	10.00
USNM 364173	31.50	8.50	20.00	0.50	2.00	15.00	8.00	11.00
USNM 364175	30.00	9.00	18.00	1.00	2.00	13.80	9.00	11.00
USNM 364176	28.00	8.50	18.00	1.00	1.50	14.00	8.00	11.00
USNM 364177	29.00	8.80	18.00	1.00	2.00	13.00	9.50	11.50
USNM 364179	28.00	9.00	18.00	0.50	1.50	11.00	7.50	11.00
USNM 457197	29.00	9.00	18.00	0.50	1.30	12.30	9.00	12.00
USNM 457198	28.50	9.80	18.00	0.20	1.30	13.00	9.00	12.00

Abbreviations: **DCP**, diameter of cochlear portion; **DFE**, least distance between margin of fundus of internal auditory meatus and aperture for endolymphatic duct; **DFP**, least distance between margin of fundus of internal auditory meatus and aperture for perilymphatic duct; **LPP**, length of articular surface of posterior process; **MLP**, maximum length of periotic; **MWP**, maximum width of periotic; **PTA**, proximal thickness of anterior process; **WPP**, width of articular surface of posterior process.

FIGURE 1S. Measurements of periotics used in this work (Modified from Kasuya, 1973).
Abbreviations: **DCP**, diameter of cochlear portion; **DFE**, least distance between margin of fundus of internal auditory meatus and aperture for endolymphatic duct; **DFP**, least distance between margin of fundus of internal auditory meatus and aperture for perilymphatic duct; **LPP**, length of articular surface of posterior process; **MLP**, maximum length of periotic; **MWP**, maximum width of periotic; **PTA**, proximal thickness of anterior process (excluding accessory ossicle); **WPP**, width of articular surface of posterior process.

LITERATURE CITED

Kasuya, T. 1973. Systematic consideration of recent toothed whales based on morphology of tympano-periotic bone. Scientific Reports of the Whale Research Institute (Tokyo) 25:1–103.