

## 51. OLIGOCENE AND QUATERNARY SILICOFLAGELLATES FROM THE KERGUELEN PLATEAU<sup>1</sup>

David Bukry<sup>2</sup>

The occurrence of Quaternary and Oligocene silicoflagellates at two Ocean Drilling Program (ODP) Leg 119 Holes (736A and 744A) on the Kerguelen Plateau in the Southern Ocean was investigated to compare species distributions to Northern Hemisphere floras. This abstract gives the data determined (Tables 1 and 2) for 24 samples and few preliminary remarks. Quaternary assemblages of Hole 736A are noteworthy for the absences of key North Pacific zonal guide species such as *Bachmannocena quadrangula*, *Dictyocha aculeata*, *Dictyocha subarctica*, and *Distephanus octangulatus* (Bukry and Monechi, 1985). Other species such as *Distephanus floridus*, *Distephanus speculum elongatus*, and *Mesocena octagona* show limited ranges in Hole 736A and may help to subdivide the Quaternary locally.

The late Oligocene assemblages of Hole 744A contain widely distributed species of *Distephanus* and *Naviculopsis*, which permit correlation to lower latitude assemblages. They also contain the high-latitude acme of *Distephanus raupii* which was first noted at Deep Sea Drilling Project (DSDP) Hole 278 (56°3.42'S, 160°04.29'E, water depth 3689 m) by Perch-Nielsen (1975) and Bukry (1975). Study of Hole 744A assemblages suggests that *D. raupii* developed from pentagonal *Dictyocha deflandrei deflandrei*. A final note on the Hole 744A assemblages is the brief late Oligocene acme (25%) of *Dictyocha* sp. aff. *D. spinosa* in Sample 119-744A-13H-4, 65-67 cm, which provides a direct correlation to the acme (16%) in DSDP Sample 29-278-31R-CC (Perch-Nielsen, 1975) in the Southern Ocean.

Most of the taxonomy used in the tables is documented in earlier publications of the DSDP *Initial Reports* (see Bukry in Volumes 16, 35, 37, 40, 44, 49, 54, 67, 68, 69, 81, and 95). Also, see Loeblich et al. (1968) and Perch-Nielsen (1985) for extensive taxonomy and illustrations.

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<sup>1</sup> Barron, J., Larsen, B., et al., 1991. *Proc. ODP, Sci. Results*, 119: College Station, TX (Ocean Drilling Program).

<sup>2</sup> Scripps Institution of Oceanography and U.S. Geological Survey (mailing address: Paleontology and Stratigraphy Branch, U.S. Geological Survey (MS-915), 345 Middlefield Road, Menlo Park, CA 94025, U.S.A.)

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**Table 1. Silicoflagellate occurrences as percents for Quaternary samples from ODP Hole 736A (49°24.12'S, 71°39.61'E, and water depth 629.0 m) and for a late Pliocene sample from Hole 119-736C-7R-CC.**

Age Depth (mbsf) Core-catcher sample	Quaternary														Plio 265 7C
	9	33	38	43	53	59	69	74	80	89	99	108	15	15	
<i>Dictyocha aspera</i>													11	1	
<i>D. spp. (fragments)</i>													1		
<i>Distephanus boliviensis</i>															64
<i>D. floridus</i>			30	56		2									
<i>D. frugalis</i>				<1											
<i>D. minutus</i>	38	8	3	5	2	46	1	1	1	4	1	1	1	1	1
<i>D. minutus (heptagonal)</i>		<1				3									
<i>D. octonarius</i>								17							
<i>D. pseudofibula</i>						1									
<i>D. quinquangellus</i>		1	2	1					1						
<i>D. speculum elongatus</i>	2				1	1	37	22	24	16	16	27	3		3
<i>D. speculum oblatum</i>		5	10	6			3	4	1						
<i>D. speculum septenarius</i>		1	2	1	7								1		
<i>D. speculum speculum</i>	54	81	40	24	66	41	39	36	45	66	61	65	9		9
<i>D. speculum speculum (large)</i>															11
<i>D. speculum speculum (rounded)</i>					17										
<i>D. aff. speculum speculum (small apical)</i>			8	3		1									
<i>D. aff. speculum speculum (heptagonal)</i>					3										
<i>D. varians</i>					1										1
<i>D. spp.</i>	6	4	7	4	6	5	13	9	9	11	10	6	10		10
<i>Mesocena octagona</i>						2	7	11	19	3					
Total specimens counted	100	300	200	300	200	200	100	100	100	100	100	200	70		

**Table 2. Silicoflagellate occurrences as percents with biostratigraphic zonal assignment (Bukry, 1981) for ODP Hole 744A (61°34.66'S, 80°35.46'E, and water depth 2307.3 m). *Macrora* (incertae sedis) occurrences shown.**

Age Zone/Subzone Depth (mbsf) Core, section Sample interval (cm)	late Oligocene										
	<i>N. biapiculata/D. speculum haliomma</i>										
	99.8	100	102	103	104	106	109	111	114	115	117
	12-1	12-1	12-2	12-3	12-4	12-5	13-1	13-2	13-4	13-5	13-6
	60	80	120	80	40	60	60	60	65	60	60
<i>Bachmannocena apiculata apiculata</i>	9	8	1	<1		1	2	4	2	4	12
<i>Corbisema archangelskiana</i>					2	4	1		1		5
<i>C. triacantha mediana</i>										1	
<i>C. triacantha triacantha</i>			<1								1
<i>Dictyocha deflandrei deflandrei</i>		1	<1				1	<1			
<i>D. d. deflandrei (pentagonal)</i>						<1					3
<i>D. fischeri</i>							3	2	2	7	1
<i>D. frenguelli</i>										1	
<i>D. sp. aff. D. spinosa</i>									25	17	
<i>D. sp. (asperoid)</i>						1					
<i>Distephanus crux crux s. ampl.</i>	1		6	4	1	24	39	30	5	11	5
<i>D. crux crux (robust, long spine)</i>								15	40	34	47
<i>D. crux darwinii</i>	33	6	<1			11	2	3			
<i>D. crux loeblichii</i>	<1										
<i>D. crux scutulatus</i>		1	4					2			
<i>D. minutus</i>		2		2							
<i>D. quinquangellus</i>		2	<1								
<i>D. quintus</i>								<1	3	7	1
<i>D. raupii</i>	6	14	73	36	12	26	4				
<i>D. raupii (hexagonal)</i>		1		1							
<i>D. sp. aff. D. raupii</i>			1		<1		5	4	5		
<i>D. speculum binoculus</i>								1	1	1	
<i>D. speculum haliomma</i>	1		1	2	3	2	3		3	4	6
<i>D. speculum hemisphaericus</i>	2	3	5	6	4	3		<1	2	1	5
<i>D. speculum patulus</i>	<1	1		1	3	2					
<i>D. speculum speculum</i>	16	24	3	21	10	8	1	9	3		6
<i>D. speculum triommata</i>	1		<1	1		<1	4	1	<1	3	8
<i>D. sp. cf. D. stradneri</i>	4	6									
<i>Macrora stella</i>	1	2				5			5		
<i>Naviculopsis biapiculata</i>	27	31	6	25	21	7	28	16			2
<i>N. cf. N. biapiculata (short spine)</i>				1			10	13		3	
<i>N. constricta</i>										1	
<i>N. eobiapiculata</i>					43	6					
<i>N. trispinosa</i>											1
Total specimens counted	100	300	200	300	200	200	100	100	100	100	100