

G.S.C. O.F. 1882 PALYNOLOGICAL BIOSTRATIGRAPHY OF THE INTERVAL
780-3745M, VOYAGER J-18, GRAND BANKS

This document was produced
by scanning the original publication.

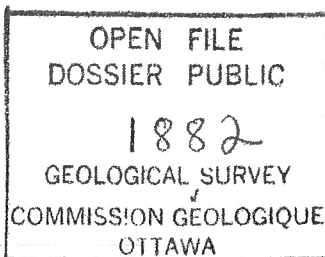
Ce document est le produit d'une
numérisation par balayage
de la publication originale.

BUJAK DAVIES GROUP

PALYNOLOGICAL BIOSTRATIGRAPHY
OF THE INTERVAL 780-3745M,
VOYAGER J-18, GRAND BANKS

REPORT #87-0066

CALGARY, ALBERTA



BIOSTRATIGRAPHIC SUMMARY: VOYAGER J-18

- 780-790m probable Areosphaeridium arcuatum Zone (probable early
Oligocene)
- 810-940m Areosphaeridium arcuatum Zone (early Oligocene)
- 960-1240m Diphyes colligerum Zone (late Eocene)
- 1260-1270m possible Areoligera senonensis Zone (possible early
Eocene)
- 1290-1330m Areoligera senonensis Zone (early Eocene)
- 1350-1420m Palaeoperidinium pyrophorum Zone (early Paleocene)
- 1440-1510m possible Chichaouadinium sp. A Zone: Subzones 12A-C
(possible Albian)
- 1525-1565m: Parvisaccites amplius Zone: Subzone 10B ("mid" Aptian)
- 1665-1765m: Pseudoceratium pelliferum Zone: Subzone 7A (early
Valanginian)
- 1785-1915m: Cerebropollenites macroverrucosus Zone: Subzone 6A (late
Berriasian)
- 1935-2035m: Subtilisphaera paeminosa Zone: Subzone 3C (late
Kimmeridgian)

- 2055-2245m: Pilosporites sp. A Zone: Subzone 2C (middle
Kimmeridgian)
- 2265-2365m: Pilosporites sp. A Zone: Subzone 2B (early to middle
Kimmeridgian)
- 2505-2725m: Scriniodinium crystallinum Zone: Subzones 1A-B (early
Kimmeridgian)
- 2745-2845m: Gonyaulacysta jurassica Zone: Subzone 0B (late Oxfordian)
- 2865-3145m: Undifferentiated Jurassic
- 3165-3415m: Hystriogonyaulax #EA Zone: Subzone 0A (early Oxfordian)
- 3435-3535m: Ctenidodinium sellwoodii Zone (early Callovian)
- 3570-3745m: Diacanthum filapicatum Zone (late Bathonian)
-

SELECTED PALYNOMORPHS780-790m: probable Areosphaeridium arcuatum Zone (probable early Oligocene)

780-790m Alnipollenites verus
 Lycopodiumsporites annotinioides
 Uperculodinium centrocarpum
 Usmundacidites claytonites

810-940m: Areosphaeridium arcuatum Zone (early Oligocene)

810-820m Cordosphaeridium cantharellum
 Corylus #LA
 Glaphyrocysta intricata (large form)
 Impagidinium patulum
 Quercoidites #LA
 Rouseisporites #LA
 Selaginellaites selaginoides
 Spiniferites pseudofurcatus
 Systematophora ancyrea

840-850m Hystriochokolpoma rigaudiae

930-940m Pterocaryapollenites stellatus

960-1240m: Diphyes colligerum Zone (late Eocene)

960-970m Cribroperidinium giuseppi
 Lingulodinium machaerophorum
 Phthanoperidinium alectrolophum

Phthanoperidinium echinatumPhthanoperidinium levimurum

990-1000m

Chiropteridinium mespilatumDinopterygium cladoidesGlaphyrocysta semitectaImpagidinium californiense (questionable
identification)Membranophoridium aspinatumPentadinium laticinctum granulosumPhthanoperidinium geminatumTectatodinium pellitum

1020-1030m

Lentinia serrataNyssapollenites krutzschiiGlaphyrocysta laciniiforme

1050-1060m

Achomosphaera ramuliferaParalecaniella indentataSystematophora placacantha

1080-1090m

Phthanoperidinium #LG

1110-1120m

Spiniferites crassipellis

1230-1240m

Hystriosphæridium patulum1260-1270m: possible Areoligera senonensis Zone (possible early
Eocene)

1260-1270m

Araneosphaera araneosaAreoligera senonensis (questionable identification)

Hystrichosphaeridium patulum (common)
Wetzeliiella articulata
Wetzeliiella meckelfeldensis (questionable
identification)

1290-1330m: Areoligera senonensis Zone (early Eocene)

1290-1300m Apectodinium homomorphum (common)
 Apectodinium hyperacanthum (common)
 Areoligera senonensis (dominant)
 Cordosphaeridium gracile
 Cordosphaeridium inodes inodes
 Cordosphaeridium inodes longipes
 Deflandrea oebisfeldensis
 Diphyes colligerum
 Glaphyrocysta intricata (small form)
 Hystrichokolpoma salacium
 Hafniasphaera septata
 Melitasphaeridium pseudorecurvatum
 Thalassiphora patula

1320-1330m Achomoshaera alcicornu
 Apectodinium homomorphum (abundant)
 Cicatricosisporites dorogensis
 Kisselovia crassiramosa
 Lentinia wetzelii
 Polysphaeridium subtile

1350-1420m: Palaeoperidinium pyrophorum Zone (early Paleocene)

1350-1360m Palaeoperidinium pyrophorum

1905-1915m Callialasporites infrapunctatus
Cerebropollenites macroverrucosus
Dingodinium jurassicum

1935-2035m: Subtilisphaera paeminosa Zone: Subzone 3C (late
Kimmeridgian)

1935-1945m Reticulatisporites #EA
Pityosporites dividius
Coronatispora valdensis
Lanterna sportula
Lanterna bulgaria

1965-1975m Alisporites thomasi

2010-2020m Epiplosphaera reticulospinosa
Muderongia simplex perforata

2025-2035m Breodoxiella #EA (common)
Breodoxiella #EB
Breodoxiella #ER
Endoscrinium pharo
Cantulodinium #EA
Meiourogoniaulax deflandrei
Occisucysta evittii
Senoniasphaera jurassica

2055-2245m: Pilosporites sp. A Zone: Subzone 2C (middle
Kimmeridgian)

2055-2065m Callialasporites monoalasperus
Corollina itunensis
Escharisphaeridia rudis
Gochteodinia villosa cf.

Imbatodinium kondratjevii
Varirugosisporites planirugulatus

2085-2095m Corollina vignollensis

2115-2125m Cicatricosisporites #EP
Corollina echinata
Exesipollenites scabratus
Glossodinium dimorphum

2145-2155m Amphorula metaelliptica
Callialasporites trilobatus cf.
Cribroperidinium globatum
Imbatodinium pomum

2205-2215m Corollina itunensis (common)
Muderongia #EA

2235-2245m Amphorula #ED (questionable identification)
Breodoxiella #EA (common)
Cicatricosisporites purbeckensis (base in cuttings)
Ctenidodinium chondrum (questionable identification)
Mendicodinium groenlandicum
Muderongia #EG

2265-2365m: Pilosisporites sp. A Zone: Subzone 2B (early to middle
Kimmeridgian

2265-2275m Ctenidodinium schizoblatum (depressed top)
Plicatella #EO
Subtilisphaera paeminosa
Systematophora #EA
Tubotuberella irregularis

- 2295-2305m Inaperturopollenites #EA
 Scriniodinium dictyotus
- 2335-2345m Meiourogoniaulax callomonii
- 2355-2365m Corollina #EV
- 2385-2395m Amphorula #EE (depressed top)
 Cicatricosisporites #EX
 Ctenidodinium chondrum
 Fromea irregulare
 Gonyaulacysta serrata cf.
 Varirugosisporites spp.
- 2415-2425m Imbatodinium attenuatum (depressed top)
 Tuberositriletes minutus
- 2445-2455m Acanthaulax spp.
 Atopodinium #EA
 Cicatricosisporites mohrioides
 Klukisporites variegatus
 Meiourogoniaulax dicrypta
 Pareodinia sp. C
 Varirugosisporites #EA
- 2475-2485m Varirugosisporites #EM

2505-2725m: Scriniodinium crystallinum Zone: Subzones 1A-B (early
Kimmeridgian)

- 2505-2515m Corollina martonotii
 Meiourogoniaulax pila
- 2535-2545m Cribroperidinium longicornis
 Ctenidodinium #EK

Ctenidodinium pachydermum
Egmontodinium polyplacophorum
Fromea warlinghamensis
Leptodinium aceras
Leptodinium clathratum
Uccisucysta dalios

2565-2575m Cerebropollenites #EC

2625-2635m Ischyosporites amplireticus

2685-2695m Chytroeisphaeridia mantellii
Energlynia sp. indet.

2715-2725m Systematophora #EE
Tuberositriletes #EK

2745-2845m: Gonyaulacysta jurassica Zone: Subzone OB (late Oxfordian)

2745-2755m Uccisucysta aculeata
Vastisporites vastiformis

2805-2815m Meiourugonyaulax caytonense

2865-3145m: undifferentiated Jurassic

Remarks: low recovery throughout this interval.

3165-3415m: Hystrichogonyaulax #EA Zone: Subzone OA (early Oxfordian)

3165-3195m Hystrichogonyaulax #EA (questionable identification)
Hystrichogonyaulax #EB

3195-4005m Energlyna acollaris (questionable identification)
Gonyaulacysta jurassica
Hystrichogonyaulax #EA

3225-3235m Occisucysta thulia
Stephanellytron redcliffense

3255-3265m Acanthaulax senta
Aldorpha scarburgense
Hystrichodinium #EA

3435-3535m: Ctenidodinium sellwoodii Zone (early Callovian)

3435-3445m Ctenidodinium sellwoodii
Systematophora #EE

3465-3475m Ctenidodinium sellwoodii
Valensiella ovula
Valensiella vermiculata (questionable identification)

3525-3535m Saxosporis variabilis

3570-3745m: Diacanthum filapicatum Zone (late Bathonian)

3570-3580m Ctenidodinium combazii
Diacanthum filapicatum
Susadinium scrofoides cf.

3630-3640m Eyachia prisca

3690-3700m Ctenidodinium #EE
Lithodinia jurassica

3720-3730m Kylindracysta spp. (questionable identification)

APPENDIX A

Alphabetical Listing of Species Shown on Occurrence Chart:

Marine Dinoflagellates

Index number	Taxon names
173	Acanthaulax senta
140	Acanthaulax spp.
48	Achomosphæra alicicornu
27	Achomosphæra ramulifera
93	Adnatosphæridium paucispinum
174	Aldorpha scarburgense
137	Amphorula NEA
114	Amphorula NEB
133	Amphorula NEB
70	Amphorula metaelliptica
36	Apectodinium homomorphum
37	Apectodinium hyperacanthum
126	Apteodinium nuciforme
32	Aranosphæra araneosa
33	Araoligera senonensis
141	Atopodinium NEA
71	Breodoxiella NEA
72	Breodoxiella NEB
73	Breodoxiella NEB
184	Caddasphaera halosa
64	Canningia ringnesiorum
74	Cantulodinium NEA
54	Ceratiopsis pannucea
58	Chichaeodinium vestitum
14	Chiropteridium mespilum
147	Chytrosphaeridia mantellii
73	Cleistosphæridium ehrenbergii
89	Cleistosphæridium huguotianii
2	Cordosphæridium cantharellum
52	Cordosphæridium fibrospinosum
38	Cordosphæridium gracile
39	Cordosphæridium inodes inodes
40	Cordosphæridium inodes longipes
142	Cribroperidinium NEZ
62	Cribroperidinium edwardsii
119	Cribroperidinium ehrenbergii
9	Cribroperidinium giuseppi
111	Cribroperidinium globatum
96	Cribroperidinium granuliferum
148	Cribroperidinium longicornis
149	Cribroperidinium sp. F
190	Ctenidodinium NEB
150	Ctenidodinium NEB
76	Ctenidodinium NEZ
113	Ctenidodinium chondrum
185	Ctenidodinium combazii
138	Ctenidodinium pachydermum
166	Ctenidodinium rotundum i ky
120	Ctenidodinium schizoblatum
179	Ctenidodinium sellwoodii
129	Ctenidodinium spp.
63	Cyclonaphellium distinctum
41	Deflandrea ombisfeldensis
186	Diacanthum filipicatum
66	Dingodinium jurassicum
177	Dinoflagellata indeterminata
15	Dinopteridium cladoides
42	Diphyes colligerum
151	Egeonodinium polygalacporum
180	Ellipsoidictyum cinctum
132	Ellipsoidictyum reticulatum
90	Endoscrinium pharo
167	Energetina acollaris
157	Energetina spp.
77	Epiliosphaera reticulospinosa
121	Epiliosphaera spp.
91	Escharisphaeridia pocockii
78	Escharisphaeridia rudis
189	Eyachia prisca
134	Fromea irregulare
153	Fromea warlinghamensis
3	Glaephyrocysta intricata (large form)
43	Glaephyrocysta intricata (small form)
26	Glaephyrocysta laciniformis
16	Glaephyrocysta senilecta
17	Glaephyrocysta sp. indet.
109	Gloeoedinium dimorphum
79	Gochtsodinia villosa cf.
87	Gonyaulacysta exangula
112	Gonyaulacysta helicoides
168	Gonyaulacysta jurassica
135	Gonyaulacysta serrata cf.
73	Granulatisporites spp.
45	Hafniaasphaera septata
92	Hebertonia pellicula
188	Hebertonia spp.
98	Histiophora ornata
97	Horioginella spinosigibberosa
99	Hystriochodinium NEA
176	Hystriochodinium NEA
100	Hystriochodinium lanceatum
164	Hystriochogonyaulax NEA
163	Hystriochogonyaulax NEB
101	Hystriochogonyaulax cladophora
67	Hystriochogonyaulax cladophora cf.
102	Hystriochogonyaulax spp.
11	Hystriochokolpoma rigaudies
44	Hystriochokolpoma salacium
31	Hystriochosphæridium patulum
139	Imbatodinium attenuatum
103	Imbatodinium kondratjevii
80	Imbatodinium pomum
143	Imbatodinium spp.
18	Impagidinium californiense
4	Impagidinium patulum
19	Impagidinium sp. indet.
104	Isabelidinium cooksoniae
59	Isabelidinium cooksoniae
49	Klaseklovia crassiramosa
69	Lanterna bulgarica
60	Lanterna sportula
25	Lentinia serrata
50	Lentinia vetzellii
132	Leptodinium aceras
154	Leptodinium clathratum
136	Leptodinium perforans
10	Lingulodinium machaerophorum
191	Lithothia jurassica
130	Meiourongonyaulax callomonii
161	Meiourongonyaulax caytonense
93	Meiourongonyaulax dnlindrei
127	Meiourongonyaulax dicrypta
144	Meiourongonyaulax pila
145	Meiourongonyaulax spp.
169	Meiourongonyaulax spp.
46	Melitasphaeridium pseudorecurvatum
20	Membranophoriolum aspinatum
116	Mendicodinium groenlandicum
105	Miliolodinium jubaris
113	Muderongia NEA
117	Muderongia NEB
81	Muderongia simplex perforata
110	Muderongia sp. A
160	Occisucysta aculeata
135	Occisucysta ballios
122	Occisucysta distincta
82	Occisucysta evittii
88	Occisucysta spp.
171	Occisucysta thulia
65	Odontochitina operculata
110	Oligosphaeridium alburtnae
55	Oligosphaeridium complex
83	Oligosphaeridium pulcherrimum cf.
1	Operculodinium centrocarpum
163	Ovoidinium scabrosum
57	Palaeocystodinium australinum
53	Palaeoperidinium pyrophorum
101	Parodinia coratophora
84	Parodinia sp. C
158	Parvocavatus tuberosus
21	Pentadinium laticinctum granulatum
85	Periasphaeridium spp.
28	Phthanoperidinium BLG
11	Phthanoperidinium electrolophum
22	Phthanoperidinium comatum
12	Phthanoperidinium echinatum
23	Phthanoperidinium geminatum
13	Phthanoperidinium levimurum
51	Polyasphaeridium subtilis
156	Polyasphaeridium narjeantii
178	Polyasphaeridium spp.
86	Pterospermula helios
128	Pterinocassia dictyotus
94	Senoniasphaera jurassica
131	Sentusidinium cuculliforme
123	Sentusidinium erythrocomum
170	Sentusidinium rioulitii
192	Sentusidinium spp.
61	Spiniferites cornutus
30	Spiniferites crassipellis
5	Spiniferites pseudofurcatus
6	Spiniferites ramosus
172	Strophanelytron redcliffense
162	Subtilisphaera inaeffecta
106	Subtilisphaera paucinosia
187	Susadinium scrofolides cf.
124	Sytematophora NEA
159	Sytematophora NEB
7	Sytematophora ancyrea
107	Sytematophora areolata
108	Sytematophora fasciculigera
29	Sytematophora placacantha
146	Sytematophora spp.
24	Tectatodinium pellitum
47	Thalassiphora patula
60	Trigonopyxidia ginnia
125	Tubotuberella irregularis
56	Turbiosphaera filosa
182	Valensella ovula
183	Valensella variculata
34	Wetzelinella articulata
35	Wetzelinella meckelfeldensis

APPENDIX A (cont'd)

Alphabetical Listing of Species Shown on Occurrence Chart:

Pollen and Spores

Index number	Taxon names		
50	Abiespollenites reticulatus	64	Foveotriletes subtriangularis
67	Aequitriradites subverrucosus	125	Gleicheniidites senonicus
68	Aequitriradites verrucosus	90	Impardecispora sp. A, Dorhofer 1977
80	Alisporites #EG	102	Inaperturopollenites #EA
21	Alisporites bilateralis	111	Inaperturopollenites #EVL
81	Alisporites grandis	54	Ischyosporites #EC
75	Alisporites thomasi	127	Ischyosporites amplireticus
1	Alnipollenites verus	137	Klukisporites areolatus
39	Araucariacites australis	32	Klukisporites foveolatus
103	Araucariacites punctatus	112	Klukisporites variegatus
56	Auritulinasporites deltaformis	144	Kraeuselisporites spp.
76	Baculatisporites comauensis	143	Kyllindracysta spp.
15	Betulaceipollenites betuloides	8	Laevigatosporites ovatus
143	Callialasporites crassixinus	94	Leiotriletes equixinus
35	Callialasporites dampieri	65	Leiotriletes meckelfeldensis
71	Callialasporites infrapunctatus	3	Lycopodiumsporites annotinioides
58	Callialasporites monoalaspurus	66	Lycopodiumsporites austroclavitudites
141	Callialasporites obrutus	70	Monosulcites scabratus
46	Callialasporites trilobatus	17	Nyssapollenites krutzschii
91	Callialasporites trilobatus cf.	4	Osmundacidites claytonites
82	Callialasporites turbatus	23	Osmundacidites wellmannii
18	Caryapollenites simplex	38	Parvisaccites amplius
72	Cedripites canadensis	40	Parvisaccites radiatus
123	Cerebropollenites #EC	55	Perinopollenites elatoides
59	Cerebropollenites macroverrucosus	5	Piceapollenites spp.
36	Cerebropollenites mesozoicus	95	Pilososporites crassangularis
51	Cicatricosisporites #ECG	85	Pilososporites ericus
24	Cicatricosisporites #EE	33	Pilososporites trichopapillosus
88	Cicatricosisporites #EP	6	Pinuspollenites spp.
106	Cicatricosisporites #EX	97	Pityosporites #ER
99	Cicatricosisporites abacus	74	Pityosporites dividius
47	Cicatricosisporites annulatus	120	Platysaccus lapiensis
40	Cicatricosisporites australiensis	108	Platysaccus magasaccus
25	Cicatricosisporites cocononiensis	43	Plicatella #EAB
19	Cicatricosisporites doregensis	101	Plicatella #EG
28	Cicatricosisporites exilioides Singh '71	45	Plicatella bilateralis
60	Cicatricosisporites magnus	49	Plicatella problematica
29	Cicatricosisporites mohrioides	117	Podocarpidites canadensis
52	Cicatricosisporites potomacensis	96	Podocarpidites epistriatus
69	Cicatricosisporites purbeckensis	34	Podocarpidites granulatus
30	Cicatricosisporites sp. indet.	44	Podocarpidites potomacensis
53	Cicatricosisporites undatus	79	Podocarpidites tricocca
61	Concavissimisporites punctatus	16	Pterocaryapollenites stellatus
83	Contignisporites cooksoniae	9	Quercoidites #LA
129	Contignisporites dorsostriatus	73	Reticulatisporites #EA
139	Contignisporites dorsostriatus	10	Rouseisporites #LA
126	Contignisporites glebuiensis	116	Rubinella major
134	Contignisporites major	142	Saxosporis variabilis
135	Contignisporites triletus	11	Selaginellaites selaginoides
104	Corollina #EV	139	Spheripollenites psilatus
128	Corollina chataniensis	121	Spheripollenites scabratus
89	Corollina echinata	122	Staplinisporites parvus
41	Corollina itunensis	12	Stereisporites antiquasporites
118	Corollina martonotii	13	Taxodiaceapollenites hiatus
31	Corollina torosa	119	Todisporites major
87	Corollina vignollensis	138	Triangulopsis discoidalis
62	Coronatipora valdensis	98	Trilobosporites aequiverrucatus
7	Corylus #LA	77	Trilobosporites acornatus
92	Costatoperforosporites #EF	57	Trilobosporites granulatus
22	Couperisporites complexus	20	Trudopollis #LA
27	Cyathidites australis	14	Tsugapollenites igniculus
26	Cyathidites minor	130	Tuberositriletes #EK
2	Cyathidites spp.	113	Tuberositriletes grossstuberulatus
84	Deltoidospora diaphana	109	Tuberositriletes minutus
37	Deltoidospora hallii	131	Uvaesporites glomeratus
42	Densosporites microcrugulatus	78	Uvaesporites subequatorialis
93	Dictyophyllidites harrisii	114	Varirugosporites #EA
110	Ericipites compactipolleniatus	115	Varirugosporites #EM
140	Eucommiidites minor	86	Varirugosporites planirugulatus
100	Exesipollenites scabratus	107	Varirugosporites spp.
63	Exesipollenites tumulus	132	Vastisporites vastiformis
136	Foraminisporis jurassica	105	Vitreisporites pallidus
124	Foraminisporis paucispinosus		

APPENDIX A (cont'd)Alphabetical Listing of Species Shown on Occurrence Chart:Algae and Foraminiferal liners

Index number	Taxon names
4	Cyclopsiella spp.
3	foraminiferal liners
2	Paralecaniella indentata
1	Pediastrum boryanum

Reworked Palynomorphs

Index number	Taxon names
10	*Anulispora anulatus
3	*Chatangiella spp.
2	*Cicatricosisporites spp.
4	*Cyclonephelium distinctum
1	*Densosporites spp.
8	*Gonyaulacysta jurassica
7	*Isabelidinium spp.
11	*Lanterna bulgaria
9	*Pareodinia ceratophora
6	*Spongodinium delitiense
5	*Surculosphaeridium longifurcatum

APPENDIX BExamined Samples: Voyager J-18

780.00 : cuttings	2395.00 : cuttings
810.00 : cuttings	2625.00 : cuttings
840.00 : cuttings	2655.00 : cuttings
870.00 : cuttings	2685.00 : cuttings
900.00 : cuttings	2695.00 : cuttings
930.00 : cuttings	2715.00 : cuttings
960.00 : cuttings	2745.00 : cuttings
990.00 : cuttings	2775.00 : cuttings
1020.00 : cuttings	2805.00 : cuttings
1050.00 : cuttings	2835.00 : cuttings
1080.00 : cuttings	2865.00 : cuttings
1110.00 : cuttings	2925.00 : cuttings
1140.00 : cuttings	2955.00 : cuttings
1170.00 : cuttings	2985.00 : cuttings
1200.00 : cuttings	3015.00 : cuttings
1230.00 : cuttings	3045.00 : cuttings
1260.00 : cuttings	3075.00 : cuttings
1290.00 : cuttings	3105.00 : cuttings
1320.00 : cuttings	3135.00 : cuttings
1350.00 : cuttings	3165.00 : cuttings
1380.00 : cuttings	3195.00 : cuttings
1410.00 : cuttings	3225.00 : cuttings
1440.00 : cuttings	3255.00 : cuttings
1470.00 : cuttings	3270.00 : cuttings
1500.00 : cuttings	3380.00 : cuttings
1525.00 : cuttings	3405.00 : cuttings
1555.00 : cuttings	3435.00 : cuttings
1665.00 : cuttings	3465.00 : cuttings
1695.00 : cuttings	3495.00 : cuttings
1725.00 : cuttings	3525.00 : cuttings
1755.00 : cuttings	3570.00 : cuttings
1785.00 : cuttings	3600.00 : cuttings
1825.00 : cuttings	3630.00 : cuttings
1850.00 : cuttings	3660.00 : cuttings
1880.00 : cuttings	3690.00 : cuttings
1905.00 : cuttings	3720.00 : cuttings
1935.00 : cuttings	3735.00 : cuttings
1965.00 : cuttings	
2010.00 : cuttings	
2025.00 : cuttings	
2055.00 : cuttings	
2085.00 : cuttings	
2115.00 : cuttings	
2145.00 : cuttings	
2205.00 : cuttings	
2235.00 : cuttings	
2265.00 : cuttings	
2295.00 : cuttings	
2335.00 : cuttings	
2355.00 : cuttings	
2385.00 : cuttings	
2415.00 : cuttings	
2445.00 : cuttings	
2475.00 : cuttings	
2505.00 : cuttings	
2535.00 : cuttings	
2565.00 : cuttings	