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NEW PALYNOLOGY OF TRITON-1

OFFSHORE OTWAY BASIN, AUSTRALIA

BY

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for BHP PETROLEUM

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REF:OTW.TRITON1

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FIGURE 1 ZONATION USED HEREIN SHOWING THE NUMBERED HORIZONS AGAINST THE EXISTING FORMAL ZONATION.

I SUMMARY

New examination (including grain counts) of 52 preparations (29 existing Esso swc and cuttings preparations plus 23 new cuttings preparations) has produced a high resolution breakdown. It is expressed below in formal zones, but is also discussed in the text in terms of fifteen major horizons and twenty three minor horizons. These produced a much tighter correlation web to nearby wells when plotted on logs. Likely maximum flooding surfaces and sequence boundaries can also be located using the dinoflagellate content and diversity as a index of marine influence.

Data quality is good to fair at the top, but fair to poor below 3000m where the section is mostly postmature. The entire section is controlled from cuttings only : no good swc suites exist.

1740m(cutts) : lower longus - ?lillei Zones :
Campanian-Maastrichtian : marine

1750(cutts) - ?2200m(cutts) : upper-middle senectus Zone (upper australis dino Zone 1760-1900m, lower australis Zone 1945-2000m, aceras dino Zone 2050-2400m) : Campanian : nearshore to offshore marine with marine maxima at 2000m and 1800m

2250m(cutts)-2400m(cutts) : lower senectus Zone (aceras dino Zone) : Campanian : offshore at the base shallowing to nearshore at the top with a marine maximum just beneath at 2450m

2450m(cutts) - 2550(cutts) : upper apoxyexinus Zone (cretacea dino Zone) : Santonian : intermediate marine at the base passing to offshore at the top

2600m(cutts) - 2780m(cutts) : middle apoxyexinus Zone (cretacea dino Zone 2450-?2660m, porifera dino Zone ?2690-?3075m) : Santonian : nearshore to intermediate marine with marine maxima at 2630m and 2780m

2810m(cutts) - ?3280m(cutts) : lower apoxyexinus Zone (porifera dino Zone possibly down to 3075m) : Santonian : nearshore to intermediate marine with marine maxima at 2780m, 3075m and 3240m

3300m(cutts) - 3350m(cutts) : indeterminate - postmature

3380m(cutts) - 3545m(cutts) : apparently mawsonii Zone (?infusorioides Zone 3530-45m).

II INTRODUCTION

Paul Carroll and David Pickavance of BHP Petroleum initiated palynological review of several wells pertinent to their acreage. In Triton-1, they sought definitive age dating at the base of the well (where yields were poor) and improved resolution throughout the late Cretaceous to facilitate sequence stratigraphic analaysis. Restudy of the existing preparations to produce new data from a modern view point, including specimen counts, was clearly worthwhile. Some large sample gaps existed however, and new cuttings were selected to infill to around 30m spacing.

Extensive cuttings study has two main advantages but also two main disadvantages. The first advantage is that the data becomes semicontinuous and key horizons can be seen in the cavings and not missed because they occur between the point sampling of swcs or due to unfavourable facies at the swc depth. An example is the flood of X. australis (horizon 6 herein) which is quite thin but is clearly seen in cuttings and caves down to the next casing point. The second advantage is that a downhole or extinction based zonation can be developed which works in cuttings and therefore provides a powerful tool to monitor drilling and enable cost efficient drilling and engineering decisions especially early TD. Quite accurate predictions ahead of swcs, logs and the bit are possible.

The first major disadvantage is that potential caving renders all oldest occurrences (or inceptions in time) of doubtful value. Thus the established zonations which particularly in Australia are based on oldest occurrences from extensive swc suites, do not work well. Youngest occurrence or extinction events in close proximity to the established zone boundaries need to be established to continue to use the established zonation. Alternatively, the existing zonation can be abandoned and a new one erected based on extinction events.

I have tried to do both herein, working within the established zonaton of Helby, Morgan and Partridge (1987), but initiating a set of 38 numbered horizons. The most obvious (and therefore most reliable) bear the whole numbers 1 to 15 from youngest to oldest and are all extinction or major acme events reliably identifiable from cuttings. The other twenty three horizons bear a number and a lower case letter to show their lower level of confidence and their usual stratigraphic location. For example, horizons 7a, 7b, 7c and 7d occur from youngest to oldest, between major horizons 7 and 8, but are less reliable and therefore may crosscut the major horizons. They comprise mostly oldest occurrences in cuttings or youngest occurrences of rare species. The relationship of the two schemes are shown in figure 1 and the discussions herein is within the existing zonal framework.

The second major disadvantage to extensive cuttings study is that heavy caving can obscure subtle events due to dilution. Inspection of a caliper log can indicate the extent of caving, but even small quantities of a richly fossiliferous rock can obscure subtle horizons in a sparsely fossiliferous rock beneath. In Triton-1, heavy caving of the dinoflagellate rich Campanian and Santonian occurs downhole to a casing point and close to TD, where the in situ section may be virtually barren, most of the observed assemblages may be caved. Caving of this sort will clearly distort statistical counts. Identification of marine maxima and maximum flooding surfaces must therefore be tempered with caution.

The best of both alternatives can be achieved by a mix of swcs and cuttings. Downhole monitoring can be readily achieved by 50 to 100m cuttings, followed up by extensive swc suites to close sampling gaps to around 30m.

Detailed correlation is possible using the data herein and is the subject of a separate report. Raw data are presented in Appendix I.

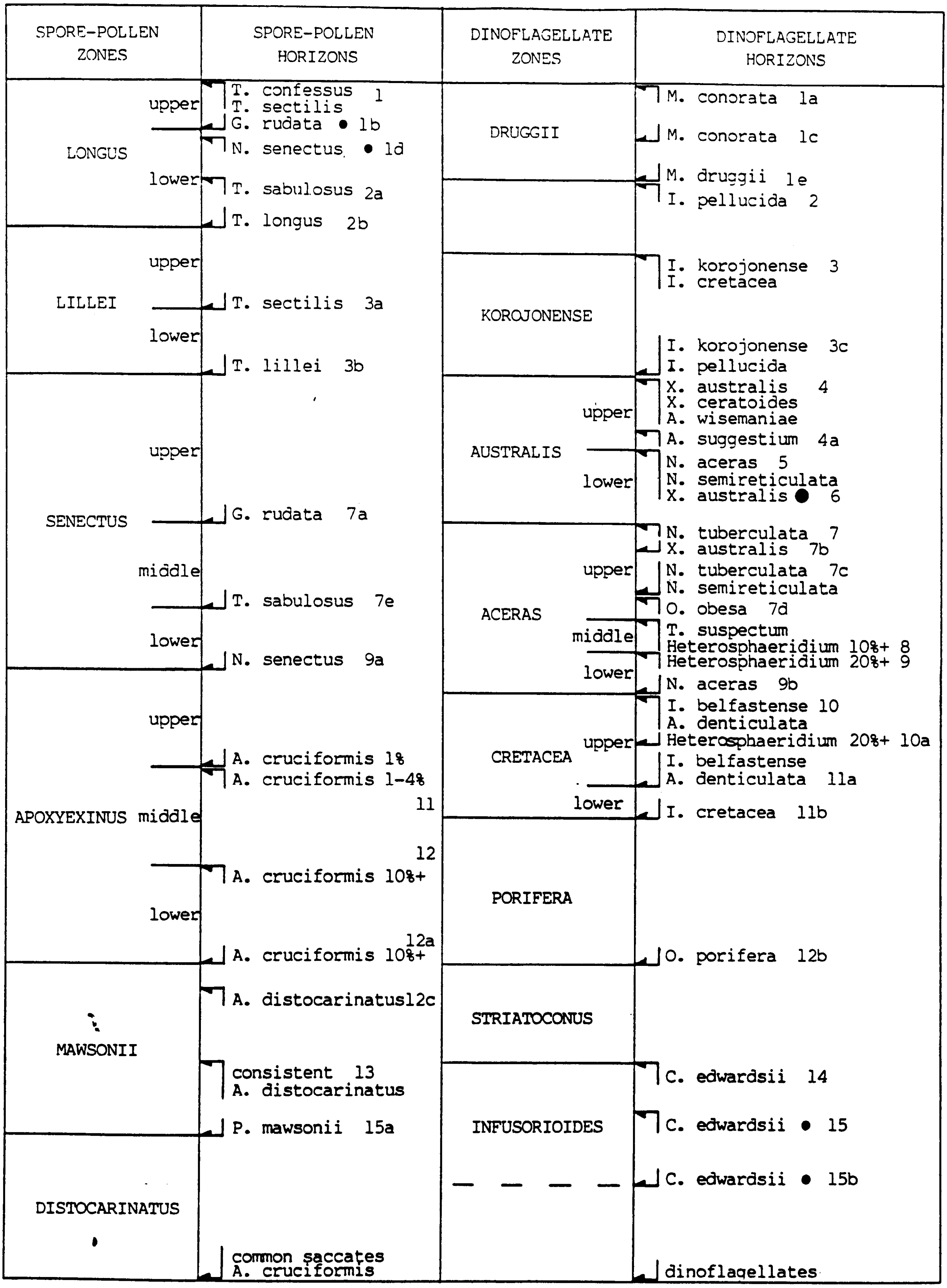

FIGURE 1 ZONATION USED HEREIN SHOWING THE NUMBERED HORIZONS AGAINST THE EXISTING FORMAL ZONATION.

● = frequent (4–10%) ⬤ = common (11–30%)

III PALYNOSTRATIGRAPHY

A 1740m(Esso cutts data) : lower longus - ?lillei Zones

Samples above this point are considered Tertiary as they lack any Cretaceous markers. In this cuttings sample only Esso data are available. No slides exist in the slide set. Youngest *Triporopollenites sectilis* and *Tricolpites confessus* indicate that horizon 1 and therefore top Cretaceous has been penetrated. The absence of *Manumiella* spp and common *Gambierina rudata* suggests that upper longus is absent, while the presence of *T. sectilis* (oldest *T. sectilis* is horizon 3a) indicates upper lillei or younger. Thus a lower longus to upper lillei assignment seems indicated. Although *Tricolpites longus* was not seen in this sample, it occurs in Esso cuttings data beneath, confirming that the longus Zone is definitely present, although the lillei Zone may be lost. Clearly the section is condensed and incomplete and a lower longus assignment seems most likely. The rare dinoflagellates are not definitively age diagnostic.

B 1750m(cutts)-?2200m(cutts) : upper-middle senectus Zone (upper australis dino Zone 1760-1900m, lower australis dino zone 1945-2000m, aceras dino Zone 2050-2400m)

Assignment to the upper-middle *Nothofagidites senectus* Zone of Campanian age is indicated at the top by the absence of younger indicators considered in place and by the dinoflagellate events youngest *Anthosphaeridium wisemaniae* and *Xenascus* spp at 1750m (usually associated with youngest *Xenikoon australis* (horizon 4), closely followed at 1760m (Esso data) by youngest *X. australis* (horizon 4). At the base, oldest consistent *Tricolpites sabulosus* (horizon 7e) is diagnostic, but is imprecise due to possible caving in these cuttings. Its proximity to more reliable dinoflagellate datums supports this choice. At the top, Tricolpites waipawaensis and Triporopollenites sectilis (horizon 3a) occur, but are considered caved. Tricolporites lillei and the large Isabelidinium spp were not seen even as caving in this well, suggesting that the lillei Zone is totally absent, or extremely condensed. Within the zone, Gambierina rudata is more consistent to 2100m (?horizon 7a) but occurs deeper as rare caving. Nothofagidites senectus is extremely inconsistent below 2250m (?horizon 9a) with the usually associated N. endurus also inconsistent below 2200m, but both occur deeper probably partly as caving. Amongst the spore pollen, Proteacidites is common throughout, with Cyathidites, Dilwynites, N. endurus, P. mawsonii intermittently common. N. endurus is frequent down to 1900m and rare beneath.

Amongst the dinoflagellates many more reliable horizons occur, including youngest Chatangiella app at 1750m, youngest Areosphaeridium suggestium (very rare at 1750m, more consistent below 1950m horizon 4a), youngest X. australis at 1760m Esso data 1800m herein (horizon 4), youngest Nelsoniella aceras at 1945m Esso data, 1950m herein (horizon 5), youngest common X. australis at 1950m (horizon 6), youngest Nelsoniella tabulata at 2050m (horizon 7) and possible O. obesa at 2150m (horizon 7d) although this may be slightly reworked. These horizons indicate assignment to the upper australis, lower australis and aeras Zones, as above. Youngest Trithyrodinium punctata occurs at 2150m and may have future correlative value (=1850m in Mussel-1). Amongst the dinoflagellates, no taxa dominate at the top (1750-1900m), X. australis is the most frequent form (10-30%) in the middle (1950-2100m) and Heterosphaeridium is the most frequent form (around 5%) at the bottom (2150-2200m) although X. australis continues to be a significant element.

Environments are nearshore at the base (13% dinos at 2200m) becoming progressively more marine to offshore marine (63% dino at 2000m) then progressively becoming more nearshore to marginal marine towards the top. Marine maxima are at 2000m and 1800m (? maximum flooding surfaces) with minima at 2200m, 1900m and 1750m, suggesting two cycles of transgression and regression.

C 2250m(cutts) - 2400m(cutts) : lower senectus Zone (?aceras dino Zone)

This interval cannot be assigned on spore-pollen criteria, but relies on the more reliable dinoflagellate horizons. The top is taken at the sample beneath consistent T. sabulosus (horizon 7e) in cuttings and the base at the sample above youngest Isabelidinium belfastense and Amphidiadema denticulata (horizon 10). Within the interval, spore-pollen horizons are not useful, with oldest consistent Nothofagidites at 2250m as already discussed, but caving deeper. The more reliable dinoflagellate datums include oldest Nelsoniella semireticulata and N. tuberculata (horizon 7c) at 2250m in cutts, youngest Odontochitina obesa (horizon 7d) at 2350m (assuming younger occurrences to 2150m are reworked), youngest Heterosphaeridium 10%+ (horizon 8) at 2300m, youngest Heterosphaeridium 20%+ (horizon 9) at 2350m and youngest Trithyrodinium suspectum at 2400m. Nelsoniella spp are inconsistent below 2450m (horizon 9b) but this may be caved slightly in these cuttings samples. The most reliable datum is probably horizon 9.

Amongst the dominant spore-pollen, Proteacidites are consistently common with frequent Cyathidites, Dilwynites, Falcisporites and Gleicheniidites. Amongst the subordinate dinoflagellates, Heterosphaeridium are consistently common with Odontochitina spp and X. australis persistent but perhaps partly caved.

Environments are intermediate marine to offshore (30-44% dinoflagellates) at the base (2350-2400m) shallowing to nearshore (18-20% dinoflagellates) at the top. The sample at 2350m is the marine maximum within the interval, but a larger maximum occurs beneath (2450m) and a lower minimum above (2200m), so this section may simply comprise the shallowing section between.

D 2450m(cutts) - 2550m(cutts) : upper apoxyexinus Zone (cretacea dino Zone 2450-2660m)

Assignment to the upper Tricolporites apoxyexinus Zone (= former Tricolpites pachyexinus Zone) of Santonian age is indicated by youngest I. belfastense and A. denticulata at the top (horizon 10) and at the base by oldest rare Amosopollis cruciformis (sample above horizon 11 A. cruciformis 4-10%). Within the interval, oldest Heterosphaeridium 20%+ (horizon 10a) occurs at 2500m (cutts and therefore possibly caved) and oldest I. belfastense/A. denticulata (horizon 11a) occurs at 2500m (cutts).

Amongst the spore-pollen, Proteacidites are common, with Dilwynites granulatus and Microcachyidites antarcticus intermittently common. Amongst the dinoflagellates, Heterosphaeridium spp are missing from 2450m (where X. australis is abundant but presumed caved) but common below (where they may be caved from an acme near 2380m). Odontochitina obesa and thick walled Trithyrodinium spp are consistent to frequent, but may also be partly caved.

Environments appear to pass from intermediate marine (29% dinoflagellates) at the base (2550m) to offshore at the top (89% dinoflagellates at 2450m). These environments may be too marine if richly marine shales above are caving into them. Clearly the interval appears to be transgressive with a marine maximum (?maximum flooding surface) at 2450m.

E 2600m(cutts) - 2780m(cutts) : middle apoxyexinus Zone (cretacea dino Zone 2450-?2660m, porifera dino Zone 2690-?3075m)

Assignment to the middle T. apoxyexinus Zone of Santonian age is indicated at the top by youngest consistent to frequent A. cruciformis (1-10%) =horizon 11 and at the base in the sample above youngest common (10%+) A. cruciformis (horizon 12). Both these boundaries appear to be fairly sharp step increases. At the top, A. cruciformis goes from being consistently outside the specimen count to being consistently within it (usually 4-8%). At the base, A. cruciformis contents jump again to usually 17-18%. Amongst the spore-pollen in this interval, Falcisporites, Dilwynites and Cyathidites are consistently common with Proteacidites common only in the topmost sample (where it may be partly caved). Intermittently frequent are M. antarcticus, Gleicheniidites and Osmundacidites with A. cruciformis consistently frequent.

Amongst the subordinate dinoflagellates, Heterosphaeridium spp (especially H. solida) continue to be frequent, but may be partly caved. Consistent distinctive elements are the thick walled Trithyrodinium spp and Odontochitina spp, but these may also be partly caved. Oldest consistent I. cretacea (horizon 11b) occurs at 2660m indicating the cretacea dino Zone based but clearly could also be partly caved. Other datum of possible significance in the future include a short consistent range of Chatangiella tripartita 2600-2660m cutts, youngest consistent Circulodinium deflandrei (2630m) and oldest consistent T. suspectum (2710m cutts, possibly caved). A single Conosphaeridium striatoconus occurs at 2690m but is too rare to be biostratigraphically precise. In addition recent data suggests that its range on the southern margin is different to that elsewhere. O. porifera occurs consistently to the interval base suggesting the porifera Zone, but could be partly caved.

Environments appear nearshore to intermediate marine with dinoflagellate contents in the range 15% to 42% of palynomorphs. Marine maxima appear to be at 2780m and 2630m (potential maximum flooding surfaces) with marine minima at 2750m and 2600m (potential sequence boundaries), but obvious caving from above reduces confidence in these values from cuttings.

F 2810m(cutts) - 3280m(cutts) : lower apoxyexinus Zone (porifera dino Zone 2690-?3075m)

Confidence below this point is low. The Esso swcs are uniformly barren and maturity is high, suggesting that most of the observed assemblage in these cuttings may be caved. In addition, a major palynological change at 2810m coincides with a casing point, so it is unclear how many of these changes are real. At the top, a clear influx of A. cruciformis (to 11%) occurs at 2810m (horizon 12) and is more obvious (18%) in the next cuttings sample at 2850m, which is presumably new section drilled below the casing point. This interval top is picked fairly confidently. Other features at this point include youngest Stiphrosphaeridium sp and youngest Apteodinium spongy. In the sample below (2850m), youngest Aptea sp occurs and these all have correlative potential. Also at 2810m, oldest consistent Odontochitina porifera, O. obesa and Trithyrodinium suspectum occur, but are proably more related to the casing point than stratigraphy. Conosphaeridium striatoconus is represented as a single specimen at 2810m only.

Picking the base of common A. cruciformis 10% (horizon 12a) is even more problematic in mature cuttings. A. cruciformis is consistently near 20% down to 3050m, is consistently 11-13% 3075-3240m then 18% in a single sample at 3280m. Below this, it continues at 5-10% to the bottom of the well. Horizon 12a is picked at 3280m, but could be too low due to caving in these cuttings. Confidence is therefore low, especially as rare specimens of Appendicisporites distocarinatus occur at 2975m, possibly at 3075m and 3200m and definitely at 3240, suggesting penetration of horizon 12c and therefore the mawsonii spore-pollen zone. These are however so rare and inconsistent, and A. distocarinatus is totally absent below 3240m, that I consider them anomolous or reworked, and favour the apoxyexinus Zone.

Within the interval spore-pollen are dominant and include common A. cruciformis, Cyathidites spp, Falcisporites, M. antarcticus and Dilwynites. Consistent throughout is P. mawsonii and Tricolpites gillii occurs rarely to 3110m. Clavifera triplex occurs down to 3225m and is fairly consistent but T. apoxyexinus does not occur anywhere in its zone. The possible top range of A. distocarinatus, discussed above, is a possible conflicting factor which cannot be resolved.

Amongst the subordinate dinoflagellates, Heterosphaeridium probably continue to be the most frequent but are only rare (1-3%) or frequent (4-10%) and never common. Below 2900m, C. deflandrei is consistently 2-6% of the assemblage. Potentially useful events for the future include youngest Stiphrosphaeridium sp (2810m), youngest Aptea sp (2850m), youngest frequent C. deflandrei (2900m), youngest Cleistosphaeridium huguonioti (2975m), youngest Trithyrodionium granulata, Membranilarnacia leptoderma, Cyclonephelium laciniiforme and consistent Chlamydophorella nyei (all at 3075m) and top frequent Aptea sp (7%) at 3240m. Oldest occurrences (approximate in these cuttings) include oldest Stiphrosphaeridium sp (3100m), oldest Chatangiella spp (3225m) and oldest Isabelidinium spp including I. glabrum (3255m with a total range of 3225-3255m) and these may prove useful local correlative datums.

Environments are nearshore to intermediate marine (8 to 36% dinoflagellates) but caving may contaminate these assemblages. Marine maxima (possible maximum flooding surfaces may be near 3240m (36% dinos) 3075m (37% dinos) and above the interval top at 2780m (42% dinos). Marine minima (possible sequence boundaries) may be near 3110m (18% dinos) and 2975m (8% dinos).

G 3300m(cutts) - 3350m(cutts) : intermediate

These two samples are extremely lean, apparently post mature, and cannot be meaningfully assigned on the lean and fragmentary palynomorphs seen. Their nature casts further doubt on how much of the assemblages seen above and below this point is in place, and how much is caved from younger horizons.

H 3380m(cutts) - 3545m(cutts) : apparently mawsonii Zone (?infusorioides Zone 3530-45m)

Assignment is tenuously based in these lean and possibly largely caved assemblages. All specimens are very darkbrown to black. The top is taken in the sample beneath common A. cruciformis, as discussed, and the base is taken in the deepest sample in the absence of older indicators. A. distocarinatus was not seen, suggesting that horizon 13 was not penetrated. Oldest P. mawsonii (horizon 15a) occurs at 3380m cutts herein and at 3375m cutts in the Esso data. Youngest Cribroperidinium edwardsii at 3500m (horizon 14) however, suggests a point close to the base of the mawsonii Zone and also suggests the infusorioides dinoflagellate Zone. It is possible that the well penetrated the distocarinatus Zone, but in the absence of good assemblages especially from swcs, it is not possible to be pedantic either way.

Within the interval the spore-pollen dominate in uniformly poor yielding and fragmentary assemblages. Of these, Falcisporites, Osmundacidites, A. cruciformis, Cyathidites and Dilwynites are frerquent, but could all be caved. Of the dinoflagellates, C. deflandrei is the most common, with Chlamydophorella nyei frequent. Youngest consistent Cyclonephelium compactum at 3530m and a major dinoflagellate influx at 3425m may have future correlative potential. At 3425m, a major influx of C. nyei with common C. deflandrei and increased Palaeohystrichophora infusorioides occurs.

Environments appear to be nearshore to intermediate marine with dinoflagellate contents in the 11% to 38% range, but caving may make these artificial. Marine maxima occur at 3545m and 3425m with minima at 3500 and 3380m, but again may be artificial and caused by selective caving.

IV CONCLUSIONS

A The new cuttings based palynostratigraphy has vastly increased resolution and confidence in this section, providing tighter correlation and proving its potential as a fast turnaround downhole exploration tool. Below 3000m however, organic maturity is high to very high and it is unclear how much of the observed assemblage is in place, and how much is caved into barren thermally post mature section.

B Grain counts have helped locate likely sequence boundaries and maximum flooding surfaces. Although clearly interpretive, major sequence boundaries might be 68my at 1738m, 71my at 1738m, 75my at 1744m, 80my at 1757m, 85my at around 2515m, 87.5my at 3267m. Below this, confidence is too low to speculate. Maximim flooding surfaces might be 73.5my at 1739m, 79.5my at 1756m, 83.75my at 2437m and 86my at 2770m or possibly 3080m.

C Deposition above base Campanian senectus Zone is rapid and even, while deposition below this horizon (especially in the apoxyexinus Zone) appears to be extremely rapid. This change in depositional style may be related to Tasman Sea rifting as described by Lowry and Longley (1991).

V REFERENCES

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TRITON #1

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W E L L: TRITON #1
F I E L D / A R E A: OTWAY BASIN, VICTORIA, AUSTRALIA

A N A L Y S T: R. MORGAN   D A T E : JANUARY 1992
N O T E S: ALL DEPTHS IN METRES
FIGURES ARE PERCENTAGES.

RANGE CHART OF OCCURRENCES BY HIGHEST APPEARANCE IN GROUPS

	TOTAL DINOFLAGELLATE CONTENT	ACHOMOSPHAERA NEPTUNI	APTEODINIUM GRANULATUM	AREOSPHAERIDIUM SUGGESTIUM	CHATANGIELLA SP	CHATANGIELLA SVERDAPIANA	CHATANGIELLA TRIPARTITA	DICONODINIUM PUSILLUM	HETEROSPHAERIDIUM HETEROCANTHUM	HETEROSPHAERIDIUM SOLIDA	HYSTRICHOSPHAERIDIUM TUBIFERUM	ISABELIDINIUM CRETACEUM	ODONTOCHITINA INDISTINCTA	OLIGOSPHAERIDIUM PULCHERRIMUM	OLIGOSPHAERIDIUM STRIATA	PALAEOHYSTRICHOSPHORA INFUSORIOIDES	SCHIZOSPORIS RETICULATUS	SPINIDINIUM ECHINOIDEA	SPINIFERITES FURCATUS/RAMOSUS	TRICHODINIUM	XENASCUS (SQUARE)	ANTHOSPHAERIDIUM WISEMANIAE
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1750 CUTTS	6	X	1	X	1	X	X	X	X	X	X	X	X	1	X	X	X	X	2	X	X	.
1800 CUTTS	12	.	.	.	.	X			2							2			.	.	.	X

1850 CUTTS	5	.	.	.	.	X	.	.	.	.	.	X	.	X	.	X	.	.	1	2	R	.
1900 CUTTS	3	.	.	.	.	.	.	.	X	.	.	.	X	.	.	X	.	.	.	.	X	.
1950 CUTTS	34	.	X	X	.	X	.	.	X	.	.	.	.	X	.	X	.	.	.	.	.	.
2000 CUTTS	63	.	.	.	.	.	.	.	.	.	.	X	.	X	.	X	.	.	1	.	.	.
2050 CUTTS	24	.	1	X	.	.	.	.	1	.	.	.	.	X	.	X	.	.	X	2	.	.
2100 CUTTS	24	.	.	.	.	.	.	.	1	X	.	.	.	1	.	X	.	.	X	.	.	.
2150 CUTTS	20	.	1	X	.	.	.	.	.	3	.	2	.	.	.	2	.	.	1	1	.	.
2200 CUTTS	13	.	.	X	.	.	X	.	2	2	.	.	.	.	.	.	.	.	X	X	X	X
2250 CUTTS	20	.	1	.	.	2	.	.	1	3	.	.	.	.	.	.	.	X	.	.	.	.
2300 CUTTS	18	.	.	.	.	X	.	.	3	9	.	.	.	.	.	.	.	.	.	.	.	.
2350 CUTTS	44	.	.	.	.	1	.	1	4	18	.	X	.	1	.	X	.	.	.	X	.	.
2400 CUTTS	30	.	.	.	.	.	.	.	3	13	.	X	.	.	.	1	.	.	.	.	.	.
2450 CUTTS	89	.	.	.	.	1	.	.	.	.	.	X	.	.	.	X	.	.	.	.	.	.
2500 CUTTS	54	.	.	.	.	.	.	.	2	17	.	3	.	.	.	2	.	.	1	.	.	.
2550 CUTTS	29	.	.	.	.	.	.	.	.	8	.	X	X	.	.	.	.	1	.	.	.	.
2600 CUTTS	15	.	.	.	.	.	2	.	2	2	.	1	.	.	.	.	.	.	1	.	.	.
2630 CUTTS	34	.	.	.	.	.	X	.	3	5	.	1	X	.	.	1	.	.	2	.	.	.
2660 CUTTS	25	.	.	.	.	.	X	.	4	6	.	X	X	.	.	2	.	.	.	.	.	.
2690 CUTTS	28	.	.	.	.	.	.	.	1	7	.	.	.	.	.	2	.	.	4	.	.	.
2710 CUTTS	24	.	.	.	.	.	.	.	2	3	.	.	.	1	.	3	.	.	.	.	.	.
2720 CUTTS	13	.	.	.	.	.	.	.	6	1	.	.	.	.	.	.	.	.	2	.	.	.
2750 CUTTS	19	.	.	.	.	.	.	.	3	3	.	X	.	X	.	2	.	.	1	.	.	.
2780 CUTTS	42	.	.	.	.	.	.	.	8	10	.	.	.	.	.	2	1	.	.	.	.	.
810 CUTTS	28	.	F	.	.	.	.	.	4	10	.	.	.	X	.	3	.	.	2	.	.	.
2850 CUTTS	21	.	.	.	.	.	.	.	4	3	.	.	.	.	.	.	.	.	1	.	.	.
2900 CUTTS	19	.	.	.	.	.	.	.	6	X	.	.	.	.	.	.	.	.	1	.	.	.
2910 CUTTS	13	.	X	.	.	.	.	.	X	2	.	.	.	.	.	.	.	.	1	.	.	.
2950 CUTTS	10	.	.	.	.	.	.	.	3	.	.	.	.	.	.	X	.	.	1	.	.	.
2975 CUTTS	8	.	X	.	.	.	.	X	2	.	.	.	.	.	.	1	.	.	1	.	.	.
3000 CUTTS	11	.	.	.	.	.	.	.	1	.	.	.	.	.	.	1	.	.	1	.	.	.
3050 CUTTS	13	.	.	.	.	.	.	.	3	1	.	.	.	.	.	1	.	.	2	.	.	.
3075 CUTTS	37	.	4	.	.	.	.	.	2	10	.	X	.	.	.	1	.	.	4	.	.	.
3100 CUTTS	21	.	.	.	.	.	.	.	4	.	.	.	.	.	.	1	.	.	2	.	.	.
3110 CUTTS	18	.	2	.	X	.	.	.	.	3	.	.	.	.	.	1	.	.	2	.	.	.
3150 CUTTS	22	.	.	.	.	.	.	.	3	1	.	.	.	.	.	.	.	.	3	1	.	.
3200 CUTTS	19	.	2	.	1	.	.	.	.	1	.	.	.	.	.	3	.	.	2	.	.	.
3225 CUTTS	18	.	1	.	1	.	.	.	2	.	.	.	.	.	.	1	.	.	.	.	.	.
3240 CUTTS	36	.	1	.	.	.	.	.	1	.	.	.	.	.	.	6	.	.	4	.	.	.
3255 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.
3280 CUTTS	31	.	.	.	.	.	.	.	1	1	.	.	.	.	.	1	.	.	3	.	.	.
3300 CUTTS	32	.	.	.	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.
3350 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3380 CUTTS	20	.	X	.	.	.	.	.	2	.	.	.	.	.	.	3	.	.	2	.	.	.
3400 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3425 CUTTS	38	.	.	.	.	.	.	.	1	.	.	.	.	.	.	3	.	.	2	.	.	.
3450 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3500 CUTTS	16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3530 CUTTS	30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	.	.	.
3533.5 SWC	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3545 CUTTS	32	.	2	.	.	.	.	.	3	.	.	.	.	.	.	.	.	.	2	.	.	.

	23 EXOCHOSPHAERIDIUM PHRAGMITES	24 NUMMUS	25 ODONTOCHITINA PORIFERA	26 PALAMBAGES	27 SUBTILISPHAERA FOLIACEA	28 TRITHYRODINIUM THIN PSILATE	29 XENIKOON AUSTRALIS	30 HETEROSPHAERIDIUM ROBUSTA	31 OLIGOSPHAERIDIUM COMPLEX	32 XIPHOPHORIDIUM ALATUM	33 CIRCULDINIUM COLLIVERI	34 EUCLADINIUM MADURENSE	35 XENASCUS CERATOIDES	36 ANTHOSPHAERIDIUM CONVOLVULOIDES	37 CHLAMYDOPHORELLA NYEI	38 COMPOSITOSPHAERIDIUM PARACOSTATUM	39 MADURADINIUM PENTAGONUM	40 NELSONIELLA ACERAS	41 NELSONIELLA SEMIRETICULATA	42 ODONTOCHITINA CRIBROPODA	43 ODONTOCHITINA PROTOPORIFERA	44 SENONIASPHAERA LORDII
1750 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
1800 CUTTS	1	1	X	X	X	3	R	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
1850 CUTTS	1	.	X	.	X	.	1	X	X	X	.	.	.	.	.	.	.	.	.	.	.	.
1900 CUTTS	X	.	X	.	.	.	3	.	.	.	X	X	X	.	.	.	.	.	.	.	.	.
1950 CUTTS	1	.	X	.	.	.	32	.	X	.	.	X	.	X	X	X	?	X	X	1	X	X
2000 CUTTS	.	.	X	X	.	.	40	.	X	.	.	X	.	.	.	.	6	3	11	.	.	2
2050 CUTTS	.	.	X	.	.	.	16	.	X	.	1	.	X	.	.	.	X	.	2	X	.	.
2100 CUTTS	X	.	1	.	.	.	6	.	.	.	.	1	.	.	.	.	X	X	X	.	.	X
2150 CUTTS	X	.	X	.	.	.	4	.	X	2	.	X	X	X	.	.	X	2	1	.	.	.
2200 CUTTS	1	.	X	.	.	.	6	1	1	X	.	.	X	.	.	X	X	X	X	.	.	X
2250 CUTTS	1	.	.	.	.	.	5	2	.	.	.	.	.	.	1	.	.	1	1	.	.	1
300 CUTTS	.	.	.	.	.	1	X	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.
2350 CUTTS	X	.	1	.	.	.	1	.	X	.	.	.	.	.	.	.	.	2	.	1	.	1
2400 CUTTS	.	.	2	.	X	X	1	.	1	.	.	.	X	.	.	.	.	1	.	1	.	X
450 CUTTS	.	.	.	.	.	1	33	.	.	.	.	1	.	.	.	.	1	21	.	.	.	.
500 CUTTS	1	.	1	.	.	1	9	1	.	.	.	.	.	.	.	.	1	2	.	1	.	.
2550 CUTTS	.	.	2	.	.	1	3	1	.	.	.	.	.	.	.	.	1	X	.	X	.	.
2600 CUTTS	X																					

2630	CUTTS	1	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	X	.	3	.	.
2660	CUTTS	1	.	.	.	.	.	1	.	1	.	.	.	.	.	.	.	.	.	X	.	.	.
2690	CUTTS	.	3	1	.	.	1	.	.	1	.	.	.	.	1	.	.	.	X	.	X	.	.
2710	CUTTS	.	.	.	.	.	1	4	.	.	.	.	.	X	.	.	.	.	1	.	X	.	.
2720	CUTTS	X	.	.	.	.	.	X	.	2	.	.	.	.	.	.	.	.	.	.	.	.	.
2750	CUTTS	1	.	X	.	1	1	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2780	CUTTS	.	.	3	.	.	1	1	.	.	.	.	.	.	.	.	.	.	1	.	.	.	X
2810	CUTTS	1	.	X	.	.	2	1	.	1	.	.	.	.	.	.	.	X	X	.	X	.	X
2850	CUTTS	2	X	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.
2900	CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2910	CUTTS	1	.	.	.	.	1	.	.	1	.	.	.	?	.	.	.	.	.	.	.	.	.
2950	CUTTS	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2975	CUTTS	X	.	.	.	.	.	.	.	2	.	.	.	X	.	X	.	.	.	.	.	.	.
3000	CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3050	CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3075	CUTTS	5	.	X	.	.	.	X	.	.	.	.	.	X	.	X	.	.	.	.	X	.	.
3100	CUTTS	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3110	CUTTS	1	.	.	.	.	.	.	.	X	.	.	.	.	.	X	.	.	.	.	.	.	.
3150	CUTTS	.	.	.	.	.	.	.	.	2	.	.	.	.	.	2	.	.	.	.	.	.	.
3200	CUTTS	1	2	.	1	.	.	.	.	X	1	.	.	.	.	1	.	.	.	.	.	.	.
3225	CUTTS	.	.	.	X	.	.	.	.	.	.	.	.	.	.	3	.	.	.	.	.	.	.
3240	CUTTS	4	.	.	.	.	.	.	.	2	.	1	.	.	.	2	.	.	.	.	.	.	.
255	CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
280	CUTTS	.	.	.	.	.	2	.	.	.	.	1	.	.	.	1	.	.	.	.	.	.	.
3300	CUTTS	.	.	.	.	.	.	.	.	1	.	.	.	.	.	2	.	.	.	.	.	.	.
3350	CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3380	CUTTS	.	.	.	1	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.	1
3400	CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3425	CUTTS	2	1	.	.	.	.	.	.	4	.	.	.	.	.	3	.	.	.	.	.	.	.
3450	CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.
3500	CUTTS	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.
3530	CUTTS	1	1	.	.	.	.	.	.	2	.	.	.	.	.	1	.	.	.	.	.	.	.
3533.5	SWC	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3545	CUTTS	.	2	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.

	TRITHYRODINIUM	NELSONIELLA PSILATA	CANNINGIA GIANT	HETEROSPHAERIDIUM CONJUNCTUM	NELSONIELLA TUBERCULATA	BATIACASPHAERA SP "THRITHYRA"	HETEROSPHAERIDIUM LATEROBRACHIUS	NELSONIELLA MINI	ODONTOCHITINA COSTATA	ODONTOCHITINA OBESOPERIFERA	TRITHYRODINIUM PUNCTATE	AREOLIGERA SENONENSIS	ASCODINIUM SP	FROMEA FRAGILIS	ISABELIDINIUM ELONGATA	ODONTOCHITINA OBESOPERCULATA	OLIGOSPHAERIDIUM ANTHOPHORUM	PTEROSPERMELLA AUREOLATA	TRITHYRODINIUM THICK PSILATE	EXOCHOSPHAERIDIUM ARNACE	SENONIASPHAERA ABSCONDIATA	AUSTRALISPHAERA VERRUCOSA
	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66
750 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
1800 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
1850 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
900 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
950 CUTTS	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2000 CUTTS	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
050 CUTTS	.	1	X	X	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
100 CUTTS	X	X	X	.	X	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2150 CUTTS	.	.	X	.	2	.	X	X	X	X	X	.	.	.	.	.	.	.	.	.	.	.
2200 CUTTS	X	.	X	.	X	.	X	.	.	X	.	X	X	X	X	X	X	X	.	.	.	.
250 CUTTS	.	.	1	.	1	.	1	1	.	.	X	.	.	.	.	.	.	.	X	.	.	.
300 CUTTS	.	.	2	.	.	.	X	2	.	.	.	.	.	.	.	.	.	.	X	X	X	.
2350 CUTTS	.	.	X	.	1	.	X	.	.	2	.	.	.	.	.	5	.	.	.	.	.	X
400 CUTTS	.	.	X	.	.	.	X	X	.	3	X	.	.	.	.	3	.	.	.	.	.	.
450 CUTTS	.	3	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2500 CUTTS	.	.	.	.	.	.	.	.	2	X	.	.	.	.	X	X	.	.	2	.	.	.
550 CUTTS	.	X	X	.	.	.	.	1	1	X	.	.	.	.	.	1	.	.	1	.	.	.
600 CUTTS	.	.	.	.	.	.	.	X	1	.	.	.	.	.	.	.	.	.	.	.	.	.
630 CUTTS	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2660 CUTTS	.	?	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.
590 CUTTS	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	X	.	.	.	.	.	.
710 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.
2720 CUTTS	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	X	.	.	.	.	.	.
750 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	X	.	.	.	.	.	.
780 CUTTS	.	.	.	.	.	.	.	.	X	.	.	.	.	.	.	6	.	.	.	.	.	.
2810 CUTTS	.	.	1	.	.	.	.	.	1	.	.	.	.	.	.	X	.	.	X	.	.	X
2850 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3	.	.
900 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.
910 CUTTS	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2950 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
975 CUTTS	.	.	.	.	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.
000 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3050 CUTTS	.		X																			

[illegible] CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3100 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3110 CUTTS	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3150 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3200 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3225 CUTTS	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3240 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3255 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3280 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3300 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3350 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3380 CUTTS	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3400 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3425 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3450 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3500 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3530 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3533.5 SWC	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3545 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Sample	MEMBRANILARNACIA PARTICATA 67	ODONTOCHITINA OPERCULATA 68	TRITHYRODINIUM SUSPECTUM 69	AMPHIDIADEMA DENTICULATA 70	AMPHIDIADEMA NUCULA 71	APTEODINIUM SP 72	CHATANGIELLA VICTORIENSIS 73	ISABELIDINIUM COOKSONIAE 74	ISABELIDINIUM ROTUNDUM 75	TRITHYRODINIUM THIN VERRUCAT 76	AUSTRALISPHAERA SMOOTH 77	ISABELIDINIUM BELFASTENSE 78	OCCISUCYSTA SEPTATA 79	ODONTOCHITINA STUBBY 80	GILLINIA HYMENOPHORA 81	ISABELIDINIUM THOMASII 82	ODONTOCHITINA SOLIDA 83	APTEOINIUM THICK 84	CASSICULOSPHAERIDIA MEGAFINE 85	CIRCULODINIUM DEFLANDREI 86	CIRCULODINIUM SOLIDA 87	CRIBROPERIDINIUM SP 88
1750 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
1800 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
850 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
900 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
1950 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
000 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
050 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2100 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2150 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
200 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
250 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2300 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
350 CUTTS	?	4	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
400 CUTTS	.	1	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2450 CUTTS	.	.	13	2	2	X	1	X	9	1	.	.	.	.	.	.	.	.	.	.	.	.
500 CUTTS	.	1	2	X	X	.	.	.	1	.	X	X	X	X	.	.	.	.	.	.	.	.
550 CUTTS	.	2	6	.	.	.	X	.	.	.	.	.	.	X	X	X	X	.	.	.	.	.
600 CUTTS	.	.	1	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2630 CUTTS	.	3	.	.	.	.	.	.	.	.	.	X	.	2	.	.	.	3	X	2	1	1
660 CUTTS	.	2	5	X	.	.	X	.	X	.	.	1	.	1	.	.	.	.	.	X	.	X
690 CUTTS	.	X	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	2	.	.
2710 CUTTS	.	4	3	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	X	.	.
720 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.
750 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	X	.	.	.	.	.	4	X	1
2780 CUTTS	.	2	5	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	2	.	.
810 CUTTS	.	X	X	.	.	.	X	.	.	.	.	X	.	.	.	.	.	.	.	2	.	.
850 CUTTS	.	X	.	.	.	4	.	.	.	.	.	.	.	.	.	.	.	.	.	1	R	.
900 CUTTS	.	1	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	5	.	.
2910 CUTTS	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	6	.	.
950 CUTTS	.	X	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.	2	.	.
975 CUTTS	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.
3000 CUTTS	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	2	.	.
050 CUTTS	.	X	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	2	.	.
075 CUTTS	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	4	.	.
100 CUTTS	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	4	.	.
3110 CUTTS	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	.	.
150 CUTTS	.	1	.	.	.	3	.	.	.	.	.	.	.	.	.	.	.	.	.	3	.	.
200 CUTTS	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	3	.
3225 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.
240 CUTTS	.	X	.	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.	3	5	.
255 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3280 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	6	.	.
300 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1	.
350 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
380 CUTTS	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	.	.
3400 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
425 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	12	5	.
450 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	X	.	.
3500 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	X

3530 CUTTS	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	4	1	1
3533.5 SWC	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3545 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	7	.	.

YCLONEPHELIUM CF LACINIIFORME

EMBRANILARNACIA LEPTODERMA

ALAEOPERIDINIUM CRETACEUM

RITHYRIDINIUM GRANULATA

RITHYRODINIUM GLABRUM

ONOSPHAERIDIUM STRIATOCONUS

YCLONEPHELIUM COMPACTUM

YSTRICHODINIUM PULCHRUM

ANYOSPHAERIDIUM SALPINX

ATIACASPHAERA SUSPECTUM

LEISTOSPHAERIDIUM SPP

TIPHROSPHAERIDIUM SP

ENASCUS AUSTRALIENSE

TEA SP

ILLAOISPHAERIDIUM ASYMMETRICUM

IMMUS MONOCULATUS

PENDICISPORITES DISTOCARINATUS

EISTOSPHAERIDIUM HUGUONIOTI

LLIOUDODINIUM SP

ITHYRODINIUM THICK VERRUCATE

ABELIDINIUM GLABRUM

RYHACHIUM

	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110
1750 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
1800 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
1850 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
1900 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
1950 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2000 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2050 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2100 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2150 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2200 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2250 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2300 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2350 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2400 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2450 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2500 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2550 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2600 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2630 CUTTS	3	X	1	1	3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2660 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2690 CUTTS	.	.	.	.	1	X	X	X	X	.	.	.	.	.	.	.	.	.	.	.	.	.
2710 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2720 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2750 CUTTS	.	.	.	.	.	.	.	X	.	1	1	.	.	.	.	.	.	.	.	.	.	.
2780 CUTTS	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2810 CUTTS	.	.	.	.	.	X	.	.	.	X	.	X	X	.	.	.	.	.	.	.	.	.
2850 CUTTS	.	.	.	.	.	.	.	.	.	.	1	.	.	X	1	.	.	.	.	.	.	.
2900 CUTTS	.	.	.	.	.	.	1	.	.	.	.	X	.	1	.	.	.	.	.	.	.	.
2910 CUTTS	.	.	.	.	.	.	.	X	.	.	.	X	.	.	.	X	.	.	.	.	.	.
2950 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.
2975 CUTTS	.	.	.	.	.	.	.	.	.	.	.	X	.	.	.	.	X	X	.	.	.	.
3000 CUTTS	.	.	.	.	.	.	1	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.
3050 CUTTS	.	.	.	.	.	.	X	X	.	.	.	X	.	1	.	.	.	2	.	.	.	.
3075 CUTTS	2	X	.	.	.	.	.	.	.	.	.	X	.	.	.	.	?	.	X	X	.	.
3100 CUTTS	.	.	.	.	.	.	X	X	.	.	.	X	.	5	.	.	.	.	.	.	.	.
3110 CUTTS	.	X	.	.	.	.	.	.	.	.	.	.	.	5	.	.	.	.	X	.	.	.
3150 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.
3200 CUTTS	X	.	.	.	.	.	.	.	.	.	.	.	.	2	.	.	?	.	.	.	.	.
3225 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	4	.	.	.	.	.	.	X	1
3240 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	7	.	.	.	.	.	.	.	.
3255 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	X	.
3280 CUTTS	.	X	.	.	.	.	1	.	.	.	.	X	.	7	.	.	.	.	.	.	.	.
3300 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	7	.	.	.	.	.	.	.	.
3350 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3380 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	5	.	.	.	.	.	.	.	.
3400 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3425 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.
3450 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3500 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.
3530 CUTTS	.	.	.	.	.	.	X	.	.	.	.	.	.	3	.	.	.	.	.	.	.	.
3533.5 SWC	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3545 CUTTS	.	.	.	.	.	.	2	.	.	.	1	.	.	5	.	.	.	.	.	.	.	.

	111 CIRCULODINIUM HIRTELLUM	112 CRIBROPERIDINIUM EDWARDSII	113 AMOSOPOLLIS CRUCIFORMIS	114 ARAUCARIACITES AUSTRALIS	115 AUSTRALOPOLLIS OBSCURUS	116 CICATRICOSISPORITES AUSTRALIENSIS	117 CINGUTRILETES CLAVUS	118 CLAVIFERA TRIPLEX	119 COROLLINA TOROSUS	120 CYATHIDITES AUSTRALIS	121 CYATHIDITES MINOR	122 CYCADOPITES FOLLICULARIS	123 DICTYOTOSPORITES SPECIOSUS	124 DILWYNITES GRANULATUS	125 FALCISPORITES GRANDIS	126 FALCISPORITES SIMILIS	127 GAMBIERINA RUDATA	128 GLEICHENIIDITES	129 KUYLISPORITES ZIPPERI	130 LYGISTEPOLLENITES BALMEI	131 LYGISTEPOLLENITES FLORINII	132 MICROCACHRYIDITES ANTARCTICUS
1750 CUTTS	.	.	1	1	2	X	1	X	2	5	10	3	X	20	2	5	X	6	X	X	X	3
800 CUTTS	.	.	X	8	X	.	.	X	X	1	7	1	X	5	1	3	1	5	.	X	.	1
850 CUTTS	.	.	1	3	.	.	1	1	1	3	5	X	X	2	1	5	1	8	.	1	1	9
1900 CUTTS	.	.	1	2	1	X	.	1	.	8	10	.	.	7	.	8	.	6	.	1	.	5
1950 CUTTS	.	.	X	X	X	.	.	1	X	2	3	X	.	8	.	10	.	.	.	1	.	4
000 CUTTS	.	.	.	3	.	.	.	X	.	1	3	.	.	7	5	5	.	3	.	.	.	3
2050 CUTTS	.	.	1	4	.	X	X	2	1	2	3	1	X	7	1	6	1	4	.	.	.	6
2100 CUTTS	.	.	X	1	X	1	.	1	.	4	5	1	X	7	.	6	1	9	.	X	X	6
150 CUTTS	.	.	.	.	1	.	.	.	.	5	.	1	.	10	.	6	.	3	.	.	.	4
200 CUTTS	.	.	X	1	1	X	.	X	.	2	8	4	.	10	.	10	X	3	.	.	.	.
2250 CUTTS	.	.	.	6	1	3	.	1	.	3	8	2	1	5	.	6	.	5	.	X	.	5

2300	CUTTS	.	.	1	2	1	.	.	.	.	5	10	.	1	4	.	5	.	4	.	1	.	7
2350	CUTTS	.	.	.	1	X	1	.	.	1	7	9	.	.	4	.	8	.	3	.	1	.	8
2400	CUTTS	.	.	1	.	1	1	.	1	1	5	8	.	.	7	.	8	X	7	.	.	.	3
2450	CUTTS	.	.	.	1	.	.	.	.	.	.	2	.	.	2	.	1	.	.	.	.	.	1
2500	CUTTS	.	.	X	1	.	1	.	1	.	1	1	.	.	9	.	5	.	6	.	.	.	2
2550	CUTTS	.	.	X	1	1	.	.	.	.	3	8	.	.	4	.	6	.	4	.	.	.	9
2600	CUTTS	.	.	4	2	.	X	.	.	X	2	12	1	.	12	1	9	X	5	.	.	.	8
2630	CUTTS	.	.	10	7	.	2	.	1	.	3	9	.	.	1	.	15	.	1	.	.	.	.
2660	CUTTS	.	.	4	1	.	.	.	.	1	4	7	1	.	10	.	13	.	2	.	.	.	5
2690	CUTTS	.	.	10	3	.	X	.	1	.	.	.	.	.	1	.	22	.	3	.	.	.	10
2710	CUTTS	.	.	8	4	.	X	.	.	1	5	10	.	.	14	.	5	.	3	.	.	.	4
2720	CUTTS	.	.	8	6	.	X	.	.	X	5	10	X	.	16	.	21	.	X	.	.	.	10
2750	CUTTS	.	.	8	1	.	1	.	.	2	9	5	.	X	7	2	17	.	.	.	.	.	5
2780	CUTTS	.	.	5	4	.	.	.	1	.	7	9	1	.	1	.	8	.	6	.	.	.	4
2810	CUTTS	.	.	11	3	.	2	.	1	X	1	5	1	.	10	.	5	.	4	.	.	.	6
2850	CUTTS	.	.	18	3	1	X	.	.	1	6	8	.	.	5	.	18	.	.	.	.	.	6
2900	CUTTS	.	.	7	9	.	.	.	2	1	3	2	.	1	10	2	21	.	2	.	.	.	15
2910	CUTTS	.	.	18	10	.	4	.	.	.	5	8	2	.	12	1	14	.	1	.	.	.	2
2950	CUTTS	.	.	18	7	.	.	.	.	1	5	3	.	.	3	.	25	.	2	.	.	.	5
2975	CUTTS	.	.	28	5	.	X	1	.	1	3	8	.	X	15	1	18	.	1	.	.	.	4
3000	CUTTS	.	.	13	9	3	.	.	X	1	5	3	1	.	9	1	23	.	.	.	.	.	7
3050	CUTTS	.	.	17	6	.	.	1	.	.	5	7	.	.	3	.	14	.	3	.	.	.	8
3075	CUTTS	.	.	11	3	.	X	.	X	.	1	4	.	.	9	.	10	.	4	.	.	.	13
3100	CUTTS	.	.	16	5	.	.	1	.	.	4	6	2	.	7	.	16	.	2	.	.	.	6
3110	CUTTS	.	.	11	8	.	X	.	X	.	8	9	5	.	9	.	10	.	1	.	.	.	11
3150	CUTTS	.	.	11	3	.	.	.	1	X	7	3	.	.	8	1	20	.	1	.	.	.	9
3200	CUTTS	.	.	6	7	1	X	.	.	1	4	4	.	.	4	.	19	.	1	.	.	.	5
3225	CUTTS	.	.	13	5	X	X	.	1	.	6	9	1	.	12	.	12	.	2	.	.	.	13
3240	CUTTS	.	.	13	2	1	1	.	.	.	4	1	.	.	1	.	9	.	1	.	.	.	3
3255	CUTTS	.	.	1	1	.	.	.	.	.	1	.	.	.	.	.	5	.	.	.	.	.	.
3280	CUTTS	.	.	18	2	.	.	.	.	.	7	3	.	.	5	.	13	.	1	.	.	.	9
3300	CUTTS	.	.	2	4	.	1	.	.	.	.	2	.	.	.	.	1	.	1	.	.	.	1
3350	CUTTS	.	.	.	.	.	.	.	.	.	1	1	.	.	.	.	2	.	.	.	.	.	1
3380	CUTTS	.	.	9	.	.	X	.	.	2	6	9	1	.	10	.	11	.	6	.	.	.	7
3400	CUTTS	.	.	.	.	.	.	.	.	.	X	X	.	.	.	.	X	.	X	.	.	.	X
3425	CUTTS	X	.	4	3	.	X	.	.	.	2	9	2	.	2	.	18	.	.	.	.	.	3
3450	CUTTS	X	.	.	.	.	.	.	.	1	.	.	.	.	.	.	2	.	1	.	.	.	.
3500	CUTTS	.	X	2	3	.	.	.	.	.	1	.	.	.	.	.	3	.	.	.	.	.	2
3530	CUTTS	.	X	5	2	.	.	.	.	1	1	1	.	.	3	.	2	.	.	.	.	.	2
3533.5	SWC	.	.	.	1	.	.	.	.	.	.	.	.	.	2	.	1	.	.	.	.	.	.
3545	CUTTS	.	.	7	4	.	.	.	.	.	4	1	.	.	1	.	10	.	1	.	.	.	2

		NEVESISPORITES STELLATA	NOTHOFAGIDITES ENDURUS	NOTHOFAGIDITES SENECTUS	OSMUDACIDITES WELLMANII	PEROTRILETES JUBATUS/MORGANII	PHYLLOCLADIDITES MAWSONII	PROTEACIDITES LARGE	PROTEACIDITES RETICULOCONCAVUS	PROTEACIDITES SP	PROTEACIDITES TUBERCULIFORMIS	RETITRILETES AUSTROCLAVATIDITES	RETITRILETES NODOSUS	STEREISPORITES ANTIQUISPORITES	TRICOLPITES CONFESSUS	TRICOLPITES GILLII	TRICOLPITES SABULOSUS	TRICOLPITES WAIPARAENSIS	TRICOLPORITES APOXYEXINUS	TRICOLPORITES RETICULATUS	TRIPOROPOLLENITES SECTILIS	CERATOSPORITES EQUALIS	DENSOISPORITES VELATUS
		133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154
750	CUTTS	X	2	X	1	X	3	1	1	21	X	2	X	X	1	1	2	1	X	X	X	.	.
800	CUTTS	.	11	X	1	.	X	2	X	28	.	X	.	X	5	.	3	.	X	.	.	X	X
1850	CUTTS	.	3	1	1	X	8	3	.	20	.	1	X	2	2	1	2	.	2	.	.	1	.
900	CUTTS	.	7	1	.	X	9	.	.	17	.	6	.	X	1	1	2	.	1	.	X	1	.
950	CUTTS	.	1	1	1	.	7	.	.	21	.	.	.	X	1	X	X	.	.	.	.	1	1
2000	CUTTS	.	1	.	3	.	1	.	.	3	.	.	.	.	1	.	2	.	.	.	.	1	.
2050	CUTTS	.	2	X	2	X	3	X	.	15	.	3	X	1	1	1	5	.	.	.	1	1	.
100	CUTTS	.	4	2	1	.	3	4	.	15	.	1	.	2	3	3	5	1	1	.	.	.	.
2150	CUTTS	.	X	1	.	.	5	1	.	17	.	1	.	1	3	2	1	.	.	.	.	4	.
2200	CUTTS	.	3	.	X	X	5	.	.	18	.	5	.	2	3	.	1	.	1	.	.	1	X
250	CUTTS	.	.	?	.	.	5	.	.	13	.	3	.	2	1	.	.	.	.	.	.	2	X
300	CUTTS	.	.	.	.	.	7	1	.	15	.	1	.	5	.	.	X	.	.	.	1	2	1
2350	CUTTS	.	.	.	1	X	.	.	.	4	.	2	.	3	1	.	X	.	.	.	.	X	X
2400	CUTTS	.	1	.	1	1	6	.	.	14	.	X	.	.	.	.	X	.	.	.	.	2	.
450	CUTTS	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2500	CUTTS	.	.	.	.	.	1	.	.	10	.	1	.	2	.	.	.	.	.	.	.	1	.
2550	CUTTS	.	1	.	.	.	2	.	.	13	.	1	.	2	3	.	X	.	.	.	.	1	.
600	CUTTS	.	.	3	1	X	7	.	.	12	.	1	.	2	X	.	.	.	.	.	.	.	.
630	CUTTS	.	.	.	6	.	2	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	.
2660	CUTTS	.	1	.	.	1	1	.	.	7	.	3	.	X	X	.	.	.	.	.	.	2	.
690	CUTTS	.	.	.	18	.	1	.	.	1	.	1	.	.	.	.	.	.	.	.	.	.	.
710	CUTTS	.	2	.	1	.	5	.	.	5	.	3	.	.	1	.	.	.	.	.	.	.	.
2720	CUTTS	.	.	.	6	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	.
2750	CUTTS	.	.	.	8	.	3	.	.	1	.	4	.	3	.	.	.	.	.	.	.	2	.
780	CUTTS	.	.	.	4	.	2	.	.	3	.	1	.	.	.	.	.	.	.	.	.	.	.
2810	CUTTS	.	.	.	3	X	7	.	.	3	.	1	.	.	1	1	1	.	.	.	X	1	.
2850	CUTTS	.	.	.	8	1	1					3											

2900 CUTTS	.	.	.	3	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.
2910 CUTTS	.	.	.	1	.	1	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	.
2950 CUTTS	.	.	.	10	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	.
2975 CUTTS	.	.	.	1	.	X	.	.	X	.	4	.	.	.	.	.	.	.	.	.	.	.
3000 CUTTS	.	.	.	3	X	.	.	.	.	.	8	.	.	.	.	.	.	.	.	.	.	.
3050 CUTTS	.	.	.	5	.	.	.	.	.	.	3	.	.	.	.	.	.	.	.	.	1	.
3075 CUTTS	.	.	.	3	X	X	.	.	1	.	1	.	.	.	.	.	.	.	.	.	3	.
3100 CUTTS	.	.	.	12	.	1	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	.
3110 CUTTS	.	X	.	1	.	X	.	.	X	.	1	.	1	.	1	.	.	.	.	.	.	.
3150 CUTTS	.	.	.	5	.	.	.	.	.	.	3	.	.	.	.	.	.	.	.	.	.	.
3200 CUTTS	.	.	.	14	.	.	.	.	.	.	8	.	.	.	.	.	.	.	.	.	.	.
3225 CUTTS	.	.	.	1	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	.
3240 CUTTS	.	.	.	9	.	4	.	.	.	.	4	.	1	.	.	.	.	.	.	.	.	.
3255 CUTTS	.	.	.	4	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.
3280 CUTTS	.	.	.	5	.	1	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.
3300 CUTTS	.	.	.	3	.	.	.	.	.	.	3	.	.	.	.	.	.	.	.	.	2	.
3350 CUTTS	.	.	.	2	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.
3380 CUTTS	.	.	.	8	.	2	.	.	.	.	1	.	3	.	.	.	.	.	.	.	.	.
3400 CUTTS	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3425 CUTTS	.	.	.	8	.	.	.	.	.	.	7	.	.	.	.	.	.	.	.	.	.	.
3450 CUTTS	.	.	.	2	.	.	.	.	.	.	1	.	1	.	.	.	.	.	.	.	.	.
3500 CUTTS	.	.	.	2	.	.	.	.	.	.	4	.	.	.	.	.	.	.	.	.	.	.
3530 CUTTS	.	.	.	5	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.
3533.5 SWC	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3545 CUTTS	.	.	.	11	.	.	.	.	.	.	3	.	.	.	.	.	.	.	.	.	.	.

	FORAMINISPORS WONTHAGGIENSIS	GRANULATISPORITES	KUYLISPORITES LUNARIS	LEPTOLEPIDITES MAJOR	LILIACIDITES	ORNAMENTIFERA SENTOSA	PERIPOROPOLLENITES POLYORATUS	PODOSPORITES MICROSACCATUS	TRICOLPITES SP	AEQUITRIRADITES SPINULOSUS	CAMEROZONOSPORITES BULLATUS	CAMEROZONOSPORITES OHAIENSIS	CICATRICOSISPORITES LUDBROOKIAE	CRYBELOSPORITES STRIATUS	LAEVIGATOSPORITES OVATUS	RETITRILETES FACETUS	SESTROSPORITES PSEUDOALVEOLATUS	STEREISPORITES REGIUM	TRIPOROLETES RETICULATUS	CAMEROZONOSPORITES LATROBENSIS	FORAMINISPORIS DAILYI	KLUKISPORITES SCABERIS
	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176
1750 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
1800 CUTTS	1	1	X	X	1	X	X	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.
1850 CUTTS	.	.	.	.	.	X	X	2	.	X	X	1	X	X	1	X	X	1	X	.	.	.
1900 CUTTS	.	.	.	.	.	.	.	.	.	.	.	X	.	X	.	.	X	X	.	X	X	X
1950 CUTTS	1	.	.	.	.	1	.	1	.	.	X	X	.	.	.	.	.	.	.	.	.	.
2000 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	X	.
2050 CUTTS	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.
2100 CUTTS	.	.	.	.	.	.	.	.	.	.	X	1	.	.	.	X	.	.	.	.	.	.
2150 CUTTS	X	.	.	.	.	1	.	1	.	X	X	.	.	.	1	.	.	.	.	.	1	.
2200 CUTTS	.	.	.	.	.	X	.	6	.	.	X	X	.	.	.	.	.	.	.	.	X	.
2250 CUTTS	.	.	.	.	.	.	.	3	.	.	.	.	.	.	.	.	1	.	1	.	.	.
2300 CUTTS	1	.	.	.	.	.	.	5	.	X	.	?	.	.	2	.	.	.	.	.	.	.
2350 CUTTS	.	.	.	.	.	X	.	1	.	.	X	.	.	.	2	.	.	.	.	.	.	.
2400 CUTTS	.	.	.	.	.	.	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.
2450 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2500 CUTTS	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	1	.	.	.
2550 CUTTS	.	.	.	.	.	.	.	10	.	.	.	1	.	.	2	.	.	.	.	.	.	.
2600 CUTTS	.	.	.	.	.	1	.	1	.	.	.	X	.	.	1	.	.	.	.	.	.	.
2630 CUTTS	.	.	.	.	.	X	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.
2660 CUTTS	.	.	.	.	.	.	.	1	.	.	.	.	.	.	10	.	.	.	.	.	.	.
2690 CUTTS	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	1
2710 CUTTS	.	.	.	.	.	.	.	1	.	.	.	.	.	.	1	.	.	.	.	.	.	.
2720 CUTTS	.	.	.	.	.	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.
2750 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2780 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2810 CUTTS	.	.	.	.	.	.	.	3	.	.	.	X	.	.	1	.	.	.	.	.	.	.
2850 CUTTS	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2900 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2910 CUTTS	.	.	.	.	.	.	.	6	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2950 CUTTS	.	.	.	.	.	.	.	3	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2975 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3000 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	X	.	.	.	.	.	.	.	.	.
3050 CUTTS	.	.	.	.	.	.	.	5	.	.	.	.	1	.	.	.	.	.	.	.	.	.
3075 CUTTS	.	.	.	.	.	.	.	4	.	.	.	.	X	.	.	.	.	.	.	.	.	.
3100 CUTTS	.	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	.	.	.	1
3110 CUTTS	.	.	.	.	.	.	.	5	.	.	.	.	X	.	.	.	.	.	.	.	.	X
3150 CUTTS	.	.	.	.	.	.	.	5	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3200 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3225 CUTTS	.	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	1	.	.	.
3240 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3255 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3280 CUTTS	.	.	.	.	.	.	.	2	.	.	.	.	1	.	.	.	.	.	.	.	.	.

3350 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3380 CUTTS	.	.	.	.	.	.	.	5	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3400 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3425 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3450 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3500 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3530 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3533.5 SWC	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3545 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

ES VERRUCATUS

CIRCOLUMENUS

TES RETICULATUS

ES PALLIDUS

ES TECTIFERA

DWARDSII

S AUSTRALIENSIS

RITES BELFORDI

ITES ASPERATUS

ITES VERRUCOSUS

S

TES BERBEROIDES

ITES DAMPIERI

DITES

ITES COOKSONIAE

JBERCULATUS

TES GLEBULENTUS

IIIDITES

S PARVIRETUS

RADIATUS

ES TRIORETICULOSUS

TES TURBATUS

	LEPTOLEPIDI 177	RETITRILETE 178	TETRACOLPOR 179	VITREISPORI 180	CYATHEACIDI 181	GAMBIERINA 182	DACRYCARPITE 183	LAEVIGATOSP 184	LYCOPODIACI 185	PHYLLOCLADI 186	TRICOLPORITE 187	CRYBELOSPOR 188	CALLIALASPOR 189	DICTYOPHYLL 190	CONTIGNISPOR 191	DILWYNITES 192	CONTIGNISPOR 193	FOVEOGLEICH 194	FOVEOTRILETE 195	TRIPOROLETE 196	TRILOBOSPOR 197	CALLIALASPOI 198
1750 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
1800 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
1850 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
1900 CUTTS	1	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
1950 CUTTS	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2000 CUTTS	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2050 CUTTS	.	.	.	.	1	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2100 CUTTS	X	1	.	.	.	.	1	X	1	X	.	.	.	.	.	.	.	.	.	.	.	.
2150 CUTTS	.	.	.	.	5	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.
2200 CUTTS	.	.	.	.	.	.	.	.	4	.	.	X	.	.	.	.	.	.	.	.	.	.
2250 CUTTS	X	X	.	.	.	.	.	.	.	.	.	.	1	1	.	.	.	.	.	.	.	.
2300 CUTTS	.	.	.	.	.	.	1	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.
2350 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	X	1	.	.	.	.	.	.
2400 CUTTS	.	.	.	.	.	.	.	.	.	1	.	.	.	1	.	.	.	.	.	.	.	.
2450 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.
2500 CUTTS	X	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	X	X	.	.	.	.
2550 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	X	1	.	.
2600 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	X	.
2630 CUTTS	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	1	.	.	.	1
2660 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2690 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	1	.	1	.	.	.	.	.	.	.
2710 CUTTS	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	1	.	.	.	.	.	.
2720 CUTTS	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1
2750 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	1
2780 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.
2810 CUTTS	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	X	.
2850 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.
2900 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.
2910 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2950 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	5	.	.	.	.	.	.	.	.	.
2975 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.
3000 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.
3050 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.	1
3075 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	X	.
3100 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	3	.	.	.	.	.	.	.	.	2
3110 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3150 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1
3200 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.	1
3225 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	X
3240 CUTTS	.	1	.	.	.	.	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.	1
3255 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1
3280 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1
3300 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	3	.	.	.	.	.	.	.	.	.
3350 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.
3380 CUTTS	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3400 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3425 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.	1
3450 CUTTS	1	.	.	.	.	.	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.
3500 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	6	.	.	.	.	.	.	.	.	.
3530 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	3	.	.	.	.	.	.	.	.	.
3533.5 SWC	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3545 CUTTS	.	.	.	.	.	.	.	.	.	.	.	.	6	.	.	.	.	.	.	.	.	.

1950 CUTTS	1900 CUTTS	1850 CUTTS	1800 CUTTS	1750 CUTTS	No.	Taxon
	.	.	.	.	199	COPTOSPORA PILEOSA
	.	.	.	.	200	FORCIPITES STIPPLATUS
	.	.	.	.	201	INTERULOBITES INTRAVERRUCATUS
	.	.	.	.	202	TRILOBOSPORITES PURVERULENTUS
	.	.	.	.	203	NEORAISTRICKIA

1950 CUTTS 1900 CUTTS 1850 CUTTS 1800 CUTTS 1750 CUTTS

2000 CUTTS	.	.	.	.	.	2000 CUTTS
2050 CUTTS	.	.	.	.	.	2050 CUTTS
2100 CUTTS	.	.	.	.	.	2100 CUTTS
2150 CUTTS	.	.	.	.	.	2150 CUTTS
2200 CUTTS	.	.	.	.	.	2200 CUTTS
2250 CUTTS	.	.	.	.	.	2250 CUTTS
2300 CUTTS	.	.	.	.	.	2300 CUTTS
2350 CUTTS	.	.	.	.	.	2350 CUTTS
2400 CUTTS	.	.	.	.	.	2400 CUTTS
2450 CUTTS	.	.	.	.	.	2450 CUTTS
2500 CUTTS	.	.	.	.	.	2500 CUTTS
2550 CUTTS	.	.	.	.	.	2550 CUTTS
2600 CUTTS	.	.	.	.	.	2600 CUTTS
2630 CUTTS	.	.	.	.	.	2630 CUTTS
2660 CUTTS	.	.	.	.	.	2660 CUTTS
2690 CUTTS	.	.	.	.	.	2690 CUTTS
2710 CUTTS	X	1	.	.	.	2710 CUTTS
2720 CUTTS	.	.	.	.	.	2720 CUTTS
2750 CUTTS	.	.	.	.	.	2750 CUTTS
2780 CUTTS	.	.	.	.	.	2780 CUTTS
2810 CUTTS	.	.	X	.	.	2810 CUTTS
2850 CUTTS	.	.	.	.	.	2850 CUTTS
2900 CUTTS	.	.	.	.	.	2900 CUTTS
2910 CUTTS	.	.	.	.	.	2910 CUTTS
2950 CUTTS	.	.	.	.	.	2950 CUTTS
2975 CUTTS	.	.	.	X	.	2975 CUTTS
3000 CUTTS	.	.	.	.	.	3000 CUTTS
3050 CUTTS	.	.	.	.	.	3050 CUTTS
3075 CUTTS	.	.	.	.	1	3075 CUTTS
3100 CUTTS	.	.	.	.	.	3100 CUTTS
3110 CUTTS	.	.	.	.	.	3110 CUTTS
3150 CUTTS	.	.	.	.	.	3150 CUTTS
3200 CUTTS	.	.	.	.	.	3200 CUTTS
3225 CUTTS	.	.	.	.	.	3225 CUTTS
3240 CUTTS	.	.	.	.	.	3240 CUTTS
3255 CUTTS	.	.	.	.	.	3255 CUTTS
3280 CUTTS	.	.	.	.	.	3280 CUTTS
3300 CUTTS	.	.	.	.	.	3300 CUTTS
3350 CUTTS	.	.	.	.	.	3350 CUTTS
3380 CUTTS	.	.	.	.	.	3380 CUTTS
3400 CUTTS	.	.	.	.	.	3400 CUTTS
3425 CUTTS	.	.	.	.	.	3425 CUTTS
3450 CUTTS	.	.	.	.	.	3450 CUTTS
3500 CUTTS	.	.	.	.	.	3500 CUTTS
3530 CUTTS	.	.	.	.	.	3530 CUTTS
3533.5 SWC	.	.	.	.	.	3533.5 SWC
3545 CUTTS	.	.	.	.	.	3545 CUTTS

SPECIES LOCATION INDEX

ndex numbers are the columns in which species appear.

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113 AMOSOPOLLIS CRUCIFORMIS
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71 AMPHIDIADEMA NUCULA
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22 ANTHOSPHAERIDIUM WISEMANIAE
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72 APTEODINIUM SP
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194	FOVEOGLEICHENIIDITES
195	FOVEOTRILETES PARVIRETUS
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49	NELSONIELLA TUBERCULATA
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135	NOTHOFAGIDITES SENECTUS
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13	ODONTOCHITINA INDISTINCTA
60	ODONTOCHITINA OBESOPERCULATA
54	ODONTOCHITINA OBESOPERIFERA
68	ODONTOCHITINA OPERCULATA
25	ODONTOCHITINA PORIFERA
43	ODONTOCHITINA PROTOPORIFERA
83	ODONTOCHITINA SOLIDA
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138	PHYLLOCLADIDITES MAWSONII
186	PHYLLOCLADIDITES VERRUCOSUS
162	PODOSPORITES MICROSACCATUS
139	PROTEACIDITES LARGE
140	PROTEACIDITES RETICULOCONCAVUS
141	PROTEACIDITES SP
142	PROTEACIDITES TUBERCULIFORMIS
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143	RETITRILETES AUSTROCLAVATIDITES
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170	RETITRILETES FACETUS
144	RETITRILETES NODOSUS
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18	SPINIDINIUM ECHINOIDEA
19	SPINIFERITES FURCATUS/RAMOSUS
145	STEREISPORITES ANTIQUISPORITES
172	STEREISPORITES REGIUM
100	STIPHROSPHAERIDIUM SP
27	SUBTILISPHAERA FOLIACEA
97	TANYOSPHAERIDIUM SALPINX
179	TETRACOLPORITES RETICULATUS
1	TOTAL DINOFLAGELLATE CONTENT
20	TRICHODINIUM
146	TRICOLPITES CONFESSUS
147	TRICOLPITES GILLII
148	TRICOLPITES SABULOSUS
163	TRICOLPITES SP
149	TRICOLPITES WAIPARAENSIS
187	TRICOLPORITES
150	TRICOLPORITES APOXYEXINUS
151	TRICOLPORITES RETICULATUS
202	TRILOBOSPORITES PURVERULENTUS
197	TRILOBOSPORITES TRIORETICULOSUS
196	TRIPOROLETES RADIATUS
173	TRIPOROLETES RETICULATUS
152	TRIPOROPOLLENITES SECTILIS
92	TRITHYRIDINIUM GRANULATA
45	TRITHYRODINIUM
93	TRITHYRODINIUM GLABRUM
55	TRITHYRODINIUM PUNCTATE
69	TRITHYRODINIUM SUSPECTUM
63	TRITHYRODINIUM THICK PSILATE
108	TRITHYRODINIUM THICK VERRUCATE
28	TRITHYRODINIUM THIN PSILATE
76	TRITHYRODINIUM THIN VERRUCATE
110	VERYHACHIUM
180	VITREISPORITES PALLIDUS
21	XENASCUS (SQUARE)
101	XENASCUS AUSTRALIENSE
35	XENASCUS CERATOIDES
29	XENIKOON AUSTRALIS
32	XIPHOPHORIDIUM ALATUM

PALYNOLOGICAL DATA SHEET

BASIN: OTWAY DINOFLAGELLATE ZONES ELEVATION: KB: GL:

WELL NAME: TRITON-1 TOTAL DEPTH:

AGE		PALYNOLOGICAL ZONES	HIGHEST DATA Preferred Depth	Rtg	Alternate Depth	Rtg	LOWEST DATA Preferred Depth	Rtg	Alternate Depth	Rtg
LATE CRETACEOUS	Maas	M. druggii								
	Camp	I. korojonense								
		upper X. australis	1760	3			1900	5		
		lower X. australis	1945	3			2000	5		
	Sant	N. aceras	2050	3			2400	5		
		I. cretaceum	2450	3			2660	4		
	Con	O. porifera								
	Turo	C. striatoconus								
	Ceno	P. infusorioides	3500	3			3545	4		

Environments :

lacustrine (algal acritarchs).
non-marine (no or very few 5% algal acritarchs).
brackish (spiny acritarch, no or very few dinoflagellates 1%).
marginal marine (1-5% very low diversity dinoflagellates).
nearshore marine (6-30% low to medium diversity dinoflagellates).
intermediate marine (31-60% medium diversity dinoflagellates).
offshore marine (61%-80% medium to high diversity dinoflagellates).
far offshore marine/oceanic (81%-100% high diversity dinoflagellates and/or planktonic forams).

Confidence Ratings :

0 : good to excellent with numerous zone fossils in core/swc.
1 : fair with rare zone fossils in core/swc.
2 : poor with non-diagnostic assemblage in core/swc. Often occurs next to a distinctive 0 to 1 rating, lacking the zone fossil seen adjacent.
3 : good with extinction event (top range) in cuttings.
4 : poor to fair with inception event (base range) in cuttings and therefore may be picked too low if caved or too high if swamped by cavings.
5 : poor with non-diagnostic assemblage in cuttings. Usually seen adjacent to a higher rating and picked on the absence of key zone fossil.
? : no confidence. Picked as a best guess in very poor data.

Data recorded by : Roger Morgan Feb 1992

Data revised by : Roger Morgan Feb 1992

PALYNOLOGICAL DATA SHEET

BASIN: OTWAY SPORE-POLLEN ZONES　　　ELEVATION: KB: ________ GL: ________

WELL NAME: TRITON-1　　　TOTAL DEPTH: ________

AGE		PALYNOLOGICAL ZONES	HIGHEST DATA Preferred Depth	Rtg	Alternate Depth	Rtg	LOWEST DATA Preferred Depth	Rtg	Alternate Depth	Rtg
NEOGENE	Plei	T. pleistocenicus								
	Plio	M. lipsus								
	Mio	C. bifurcatus								
		T. bellus								
	Olig	P. tuberculatus								
		upper N. asperus								
PALEOGENE	L.Eo	mid N. asperus								
	Mid Eo	lower N. asperus								
		P. asperopolus								
	Earl Eo	upper M. diversus								
		mid M. diversus								
		lower M. diversus								
	Pale	upper L. balmei								
		lower L. balmei								
LATE CRETACEOUS	Maas	upper T. longus	1740	?						
		lower T. longus								
	Camp	T. lillei					1740	?		
		N. senectus	1750	3			2400	4		
	Sant	up T. apoxyexinus	2450	3			2550	4		
		mid T. apoxyexinus	2600	3			2780	4		
	Con	low T. apoxyexinus	2810	3			3280	?		
	Tur	P. mawsonii	3380	?			3545	?		
	Ceno	A. distocarinatus								
EARLY CRETACEOUS	Alb	P. pannosus								
		upper C. paradoxa								
		lower C. paradoxa								
		C. striatus								
	Apt	upper C. hughesi								
		lower C. hughesi								
	l.Ne	F. wonthaggiensis								
	e.Ne	up C. australiensis								

Environments :

lacustrine (algal acritarchs).
non-marine (no or very few 5% algal acritarchs).
brackish (spiny acritarch, no or very few dinoflagellates 1%).
marginal marine (1-5% very low diversity dinoflagellates).
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Data recorded by : Roger Morgan Feb 1992

Data revised by : Roger Morgan Feb 1992