

# Pigments in Prasinophyceae

tory:

et al (1970): Four types: Type I. Same as Chlorophyceae  
Type II. Prasinolaxanthin (xanthophyll K) + MgDVP  
Type III. " + siphonaxanthin  
Type IV. Siphonaxanthin + MgDVP

et al (1984): Prasinolaxanthin is named

et al (1986): Uriolide is named

et al (1988): Type IIA: high Prasinolaxanthin / Chl a  
Type IIB: low Prasinolaxanthin / Chl a

et al (1996): Type IIA = IIB (also Fawley 1992), but  
Type 2: high Chl b / Chl a  
Type 3: low Chl b / Chl a

et al (1991): Prasinolaxanthin + MgDVP = Mamiellales (then *Pycnococcus provasoli* = Mam)

et al (1995a): Prasinolaxanthin + MgDVP  $\neq$  Mamiellales (e.g. *Pseudoscourfieldia marina*...)

et al and Jeffrey (1992): Presence of Chl c3-like pigment in one strain of *Micromonas pusilla*

et al (1992): Unknown 1, lately described as Dihydrolutein by Egeland and Liaaen-Jensen (1992)  
Unknown A, lately described as Micromonal by Egeland et al (1995a)

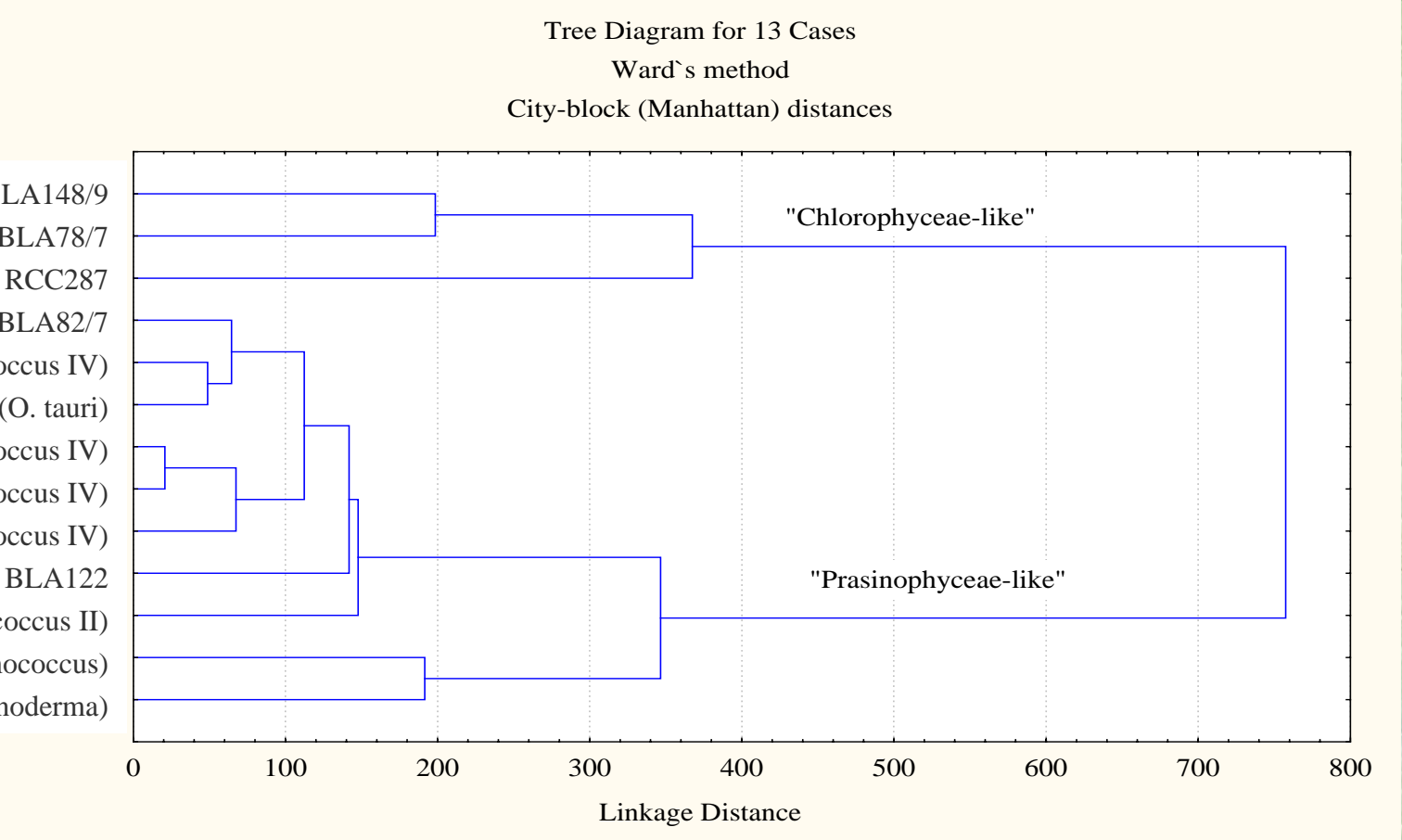
et al and Jeffrey (1992): Presence of Chl c3-like pigment in one culture of *Micromonas pusilla*

## Summary:

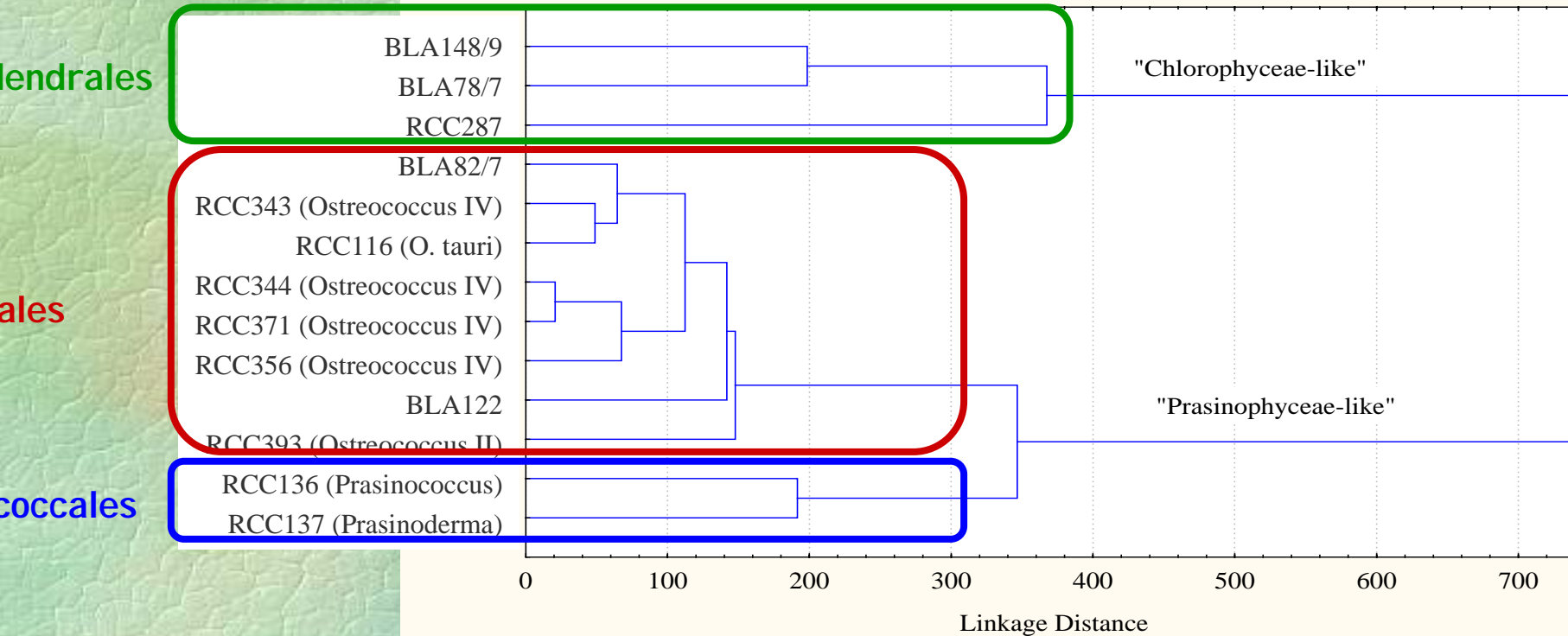
land et al (1995): Two types: Prasinolaxanthin-less (similar to Chlorophyceae, e.g. *Tetraselmis*)  
Prasinolaxanthin (+ Uriolide + Micromonal {+Dihydrolutein})

# Results

Cultures were grouped according to their pigment composition, pigments normalized to chlorophyll a (Chlorophyll a = 100) (Manderson et al (1995): Two types: Prasinoxanthin-less (similar to Chlorophyceae, e.g. Tetraselmis) and Prasinoxanthin (+ Uriolide + Micromonal {+Dihydrolutein})



Tree Diagram for 13 Cases  
Ward's method  
City-block (Manhattan) distances



	Prasinoxanthin	MgDVP	Uriolide	Micromonal	Dihydrolutein	Lutein	Zeaxanthin	Violaxanthin	Carotene ester	Chlorophyll c3	Unknown A+A'	Unknown B	$\alpha$ -carotene
BLA148/9	-	-	-	-	-	+++	+	++	++	-	-/?	-	-
BLA78/7	-	+	-	-	-	++	++	++	+	-	++	-	++
RCC287	-	-	-	-	-	+++	+	+	-	-	-	+	+
BLA82/7	++	++	++	+	++	-	+	++	+	-	-	-	-
RCC343 (Ostreococcus IV)	++	++	++	+	++	-	+	++	+	-	-	-	-
RCC116 (O. tauri)	++	++	++	+	++	-	++	++	+	-	-	-	+
RCC344 (Ostreococcus IV)	++	++	++	+	++	-	+	++	+	-	-	-	-
RCC371 (Ostreococcus IV)	++	++	++	+	++	-	+	++	+	-	-	-	-
RCC356 (Ostreococcus IV)	++	++	++	+	++	-	++	++	+	-	-	-	-
BLA122	++	++	++	+	+/?	-	++	++	+	-	-	+	-
RCC393 (Ostreococcus II)	+	?	++	+	++	-	+	++	+	+	-	++	-
RCC136 (Prasinococcus)	++	++	++	-	+	++	+	++	-	+	-	+	+
RCC137 (Prasinoderma)	++	++	++	-	+/?	+	+	-	-	-	-	?	+

# I Summary

two types of pigmentation in Prasinophyceae according to Egeland et al (1995) were clearly confirmed by the cluster analysis

In addition, the 13 cultures could be grouped into the three established orders. However, the present data also point to a large discrepancy within the order Chlorodendrales (new order?)

There were important non-common features within each of these two groups. Perhaps the most remarkable were the following:

- Presence of Chl c3 in two cultures (BLA122, RCC393)

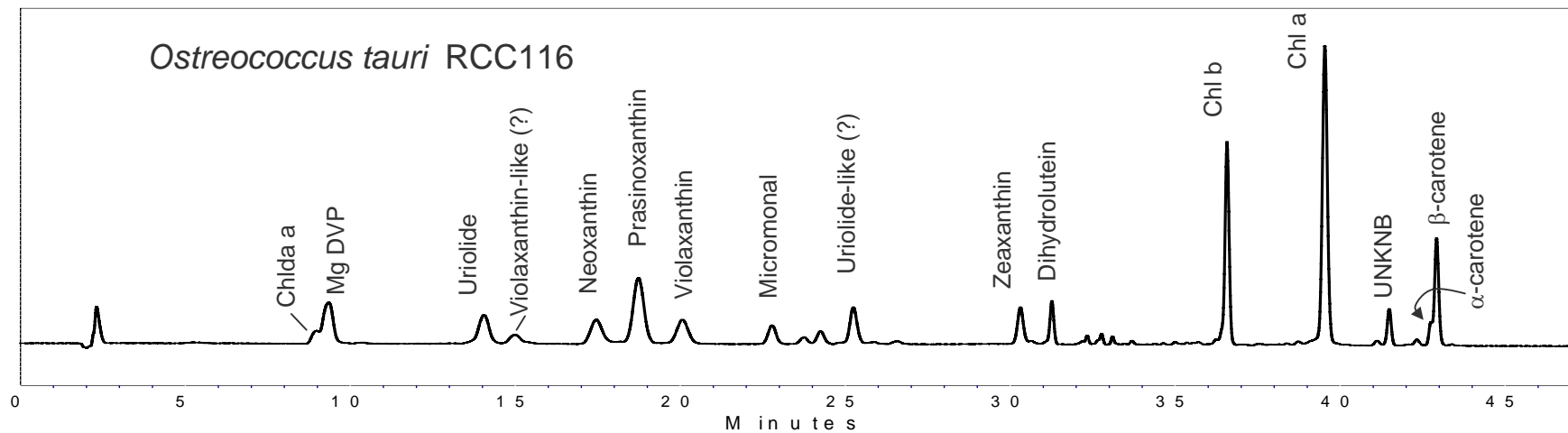
- Simultaneous presence of Prasinoxanthin and Lutein in two cultures (RCC136, RCC137)

- Presence of MgDVP in a Chlorophyceae-type Prasinophyceae (BLA78/7)

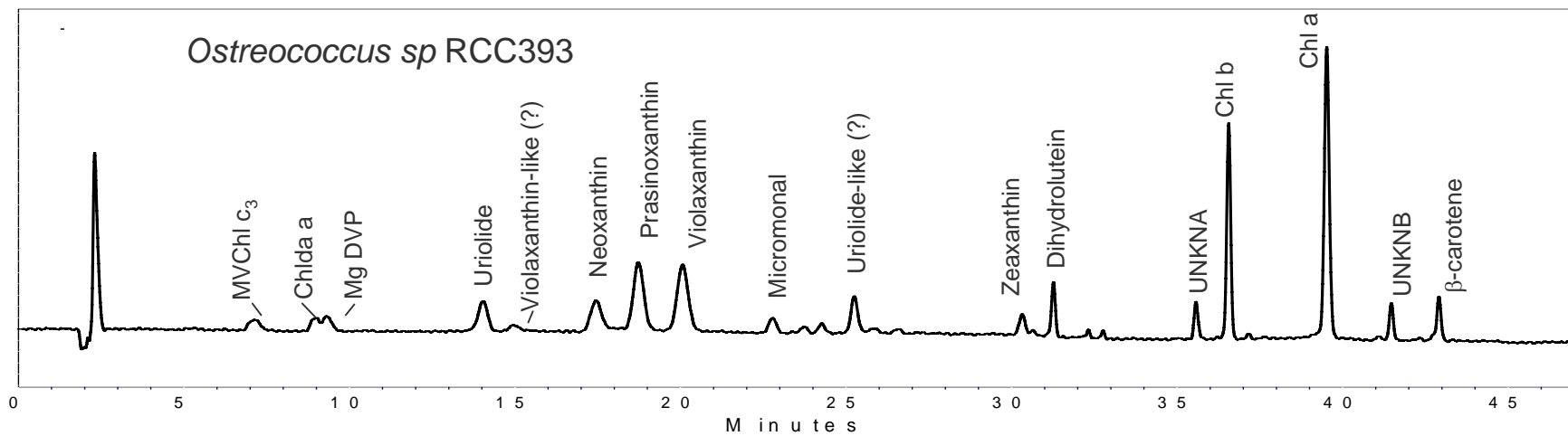
- Absence of Violaxanthin in one culture (RCC137)



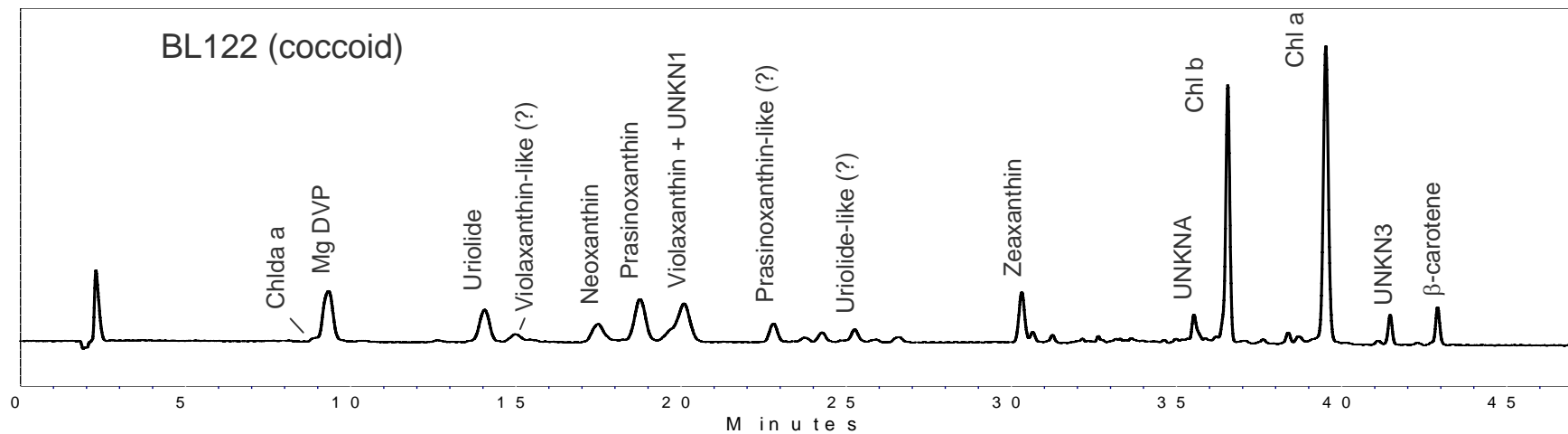
*Ostreococcus tauri* RCC116



*Ostreococcus* sp RCC393



### BL122 (coccooid)



### RCC446

