

Figure S1. The phylogenetic distribution of plant feeding in the Crustacea. Figures S1a-i present a series of published phylogenies of higher level taxa in the Crustacea with families known to consume plant and macroalgal material marked in bold, and the hypothesised transitions to plant feeding marked with a green circle. The trees are drawn to display sister relationships only with branch lengths altered from the original publications. The families coloured grey were not found in our review to include plants or macroalgae in their diets but are included in the plant-feeding clade as the most parsimonious explanation for the transition to plant feeding from detritivorous or predatory ancestors.

In a) amphipods from Dogeilinotidae, Pallaseidae and Pontogeneidae contain plant-feeding genera but were not included in our sister contrasts as their sisters contained a mix of plant-feeding and other clades. Amphipods from the Biancolinidae are herbivorous, but the genus *Biancolina* was recently transferred to Ampithoidae (85). In c) the Idoteidae and Holognathidae were not allocated a sister clade due to uncertainties in the relationships between that clade, the Chaetilidae and the arcturoid families. In e) Munididae was not allocated a sister clade due to this family not having a monophyletic status in Bracken-Grissom et al (67).

Image credits: a) *Crangonyx abberans* (Crangonyctidae) afer Smith 1983, *Eogammarus* (*Anisogammaridae*) after Tomikawa et al., 2006, *Gammarus mucronatus* (*Gammaridae*) after Bousefield 1973, *Gammarellus* (*Gammarellidae*) after Barnard & Barnard, 1983, *Acanthogammarus grewingkii* (*Acanthogammaridae*) after Barnard & Barnard 1993, *Gammarella utwe* (*Nuuanidae*) after Myers 1995, *Elasmopus alalo* (*Maeridae*) after Lowry and Hughes 2009, *Calliopius laeviusculus* (*Calliopidae*) after Bousefield and Hendrycks 1997, *Biancolina mauhina* (*Biancolinidae*) after Barnard 1970, *Bircenna fulva* (*Eophliantidae*) after Barnard 1972, *Allorchestes compressa* (*Dogeilinotidae*) after Barnard 1974, *Hyale wakabarae* (*Hyalidae*) after Serejo 1998, *Cariononajna oculata* (*Najnidae*) after Bousefield and Marcoux 2004; b) *Aora typica* (*Aoridae*) after Myers and Moore 1983, *Cymadusa munnu* (*Ampithoidae*) after Poore and Lowry 1997; c) *Asellus aquaticus* (*Asellidae*) after Calman 1911, *Porcellio laevis* (*Porcellionidae*) after Webb and Sillem 1906, *Lynseia annae* (*Limnoriidae*) after Cookson and Poore 1994, *Paridotea ungulata* (*Idoteidae*) after Poore 1993, *Cleantis phyrgeana* (*Holognathiidae*) after Poore and Lew Ton 1990, *Sphaeroma* (*Sphaeromatidae*). M Schotte; d) Bracken-Grissom et al. 2014, e) *Paleomon serenus* (*Palaeomonidae*) K. Nolan, *Hippolyte australiensis* (*Hippolytidae*) K Nolan; f) *Aegla schmitti* (*Aeglidae*) after Hobbs 1979, *Diogenidae*, *Coenobitidae* and *Paguridae* after Alcock 1905; g) *Trichodactylidae* after Rodríguez 1992, *Libinia emarginata* (*Epialtidae*) after Brown 1884, *Mithrax hemphilli* (*Majidae*) after Wagener 1990, *Menippe* sp. (*Menippidae*) after Muller 2006, *Caphyra rotundifrons* (*Portunidae*) after Hay et al. 1989; h) *Eriphia laevimana* (*Eriphiidae*) University of South Florida, *Atergatis ocyroe* (*Xanthiidae*) after Herbst 1801, *Percnon gibbesi* (*Percnidae*) after Azzuro et al. 2011, *Macrophthalmus leptophthalmus* (*Macrophthalmidae*) after Mendoza and Ng 2007, *Cyclograpsus granulatus* (*Varunidae*), G. Milledge, (*Sesarmidae*) after Abele 1992, *Plagusia chabrus* (*Plagusidae*), G. Milledge, *Gecarcinus ruricola* (*Gecarcinidae*) Encyclopedia Britannica, *Pachygrapsus marinus* (*Grapsidae*) after Dell 1963; i) *Dactylopusoides fodiens* (*Dactylopusiidae*) after Shimono 1994, *Parathalestris infestus* (*Thalestridae*) after Ho & Hong 1988.

a) Amphipoda: Senticaudata (excluding Corophiida)

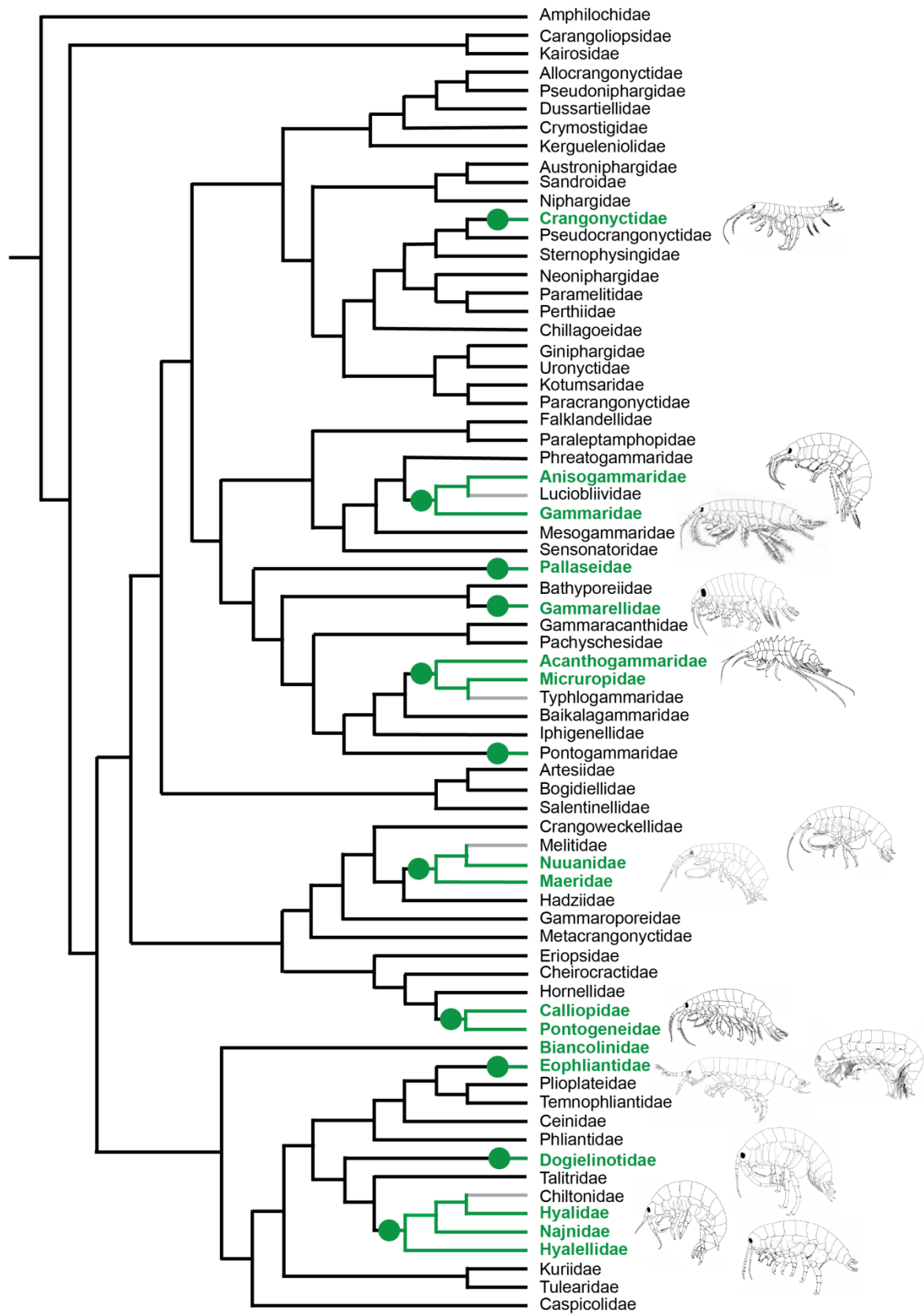


Fig. S1a. a) Phylogeny of the Amphipoda: Senticaudata (excluding Corophiida) from Lowry and Myers (63).

b) Amphipoda: Senticaudata: Corophiida

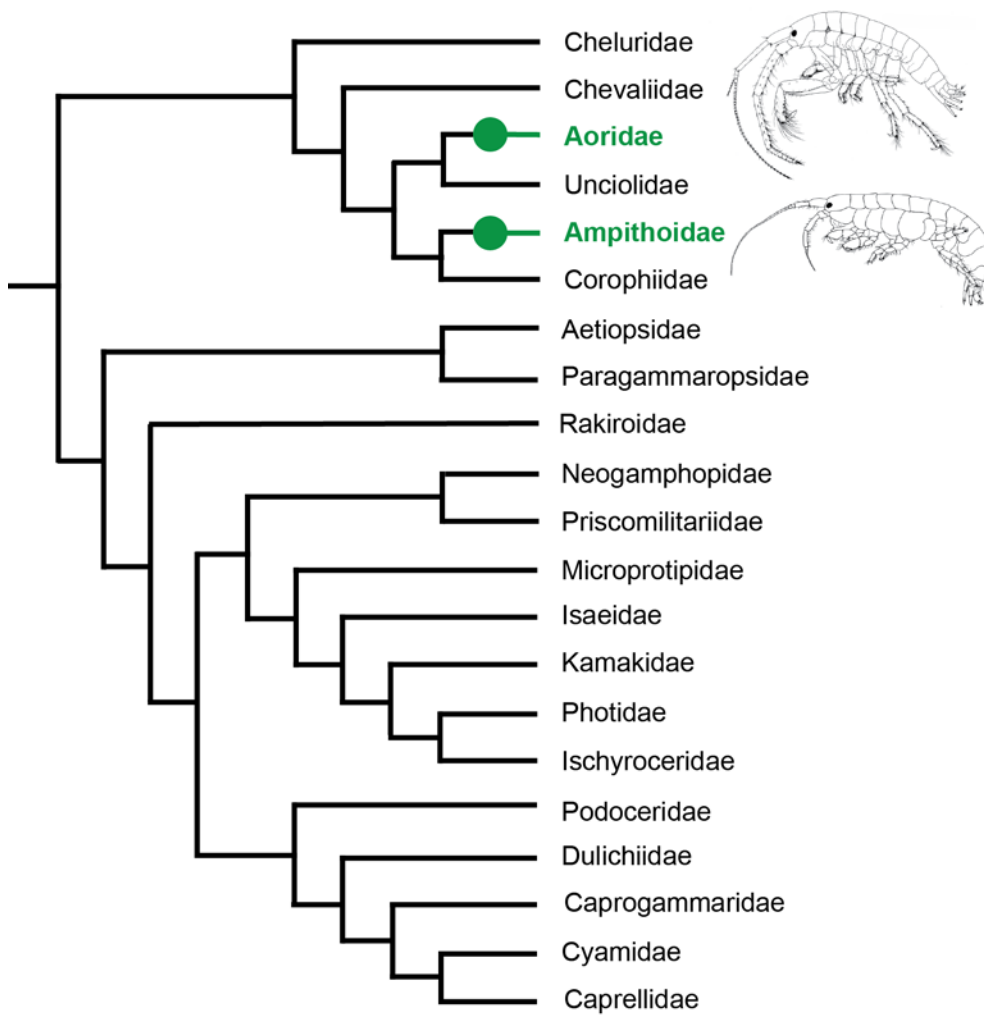


Fig. S1b. Phylogeny of the Amphipoda: Corophiida from Myers and Lowry (64).

c) Flabelliferan and related Isopoda

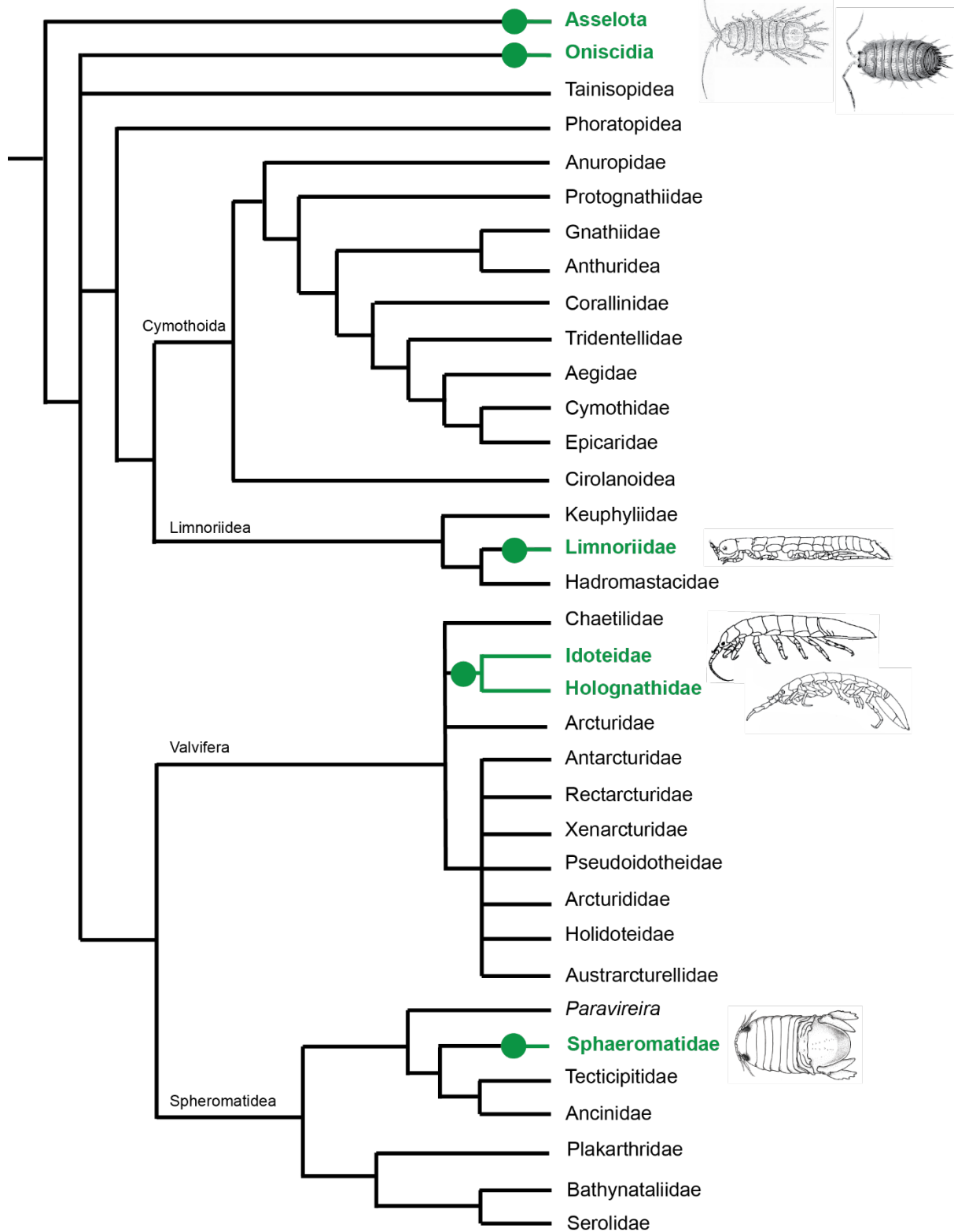
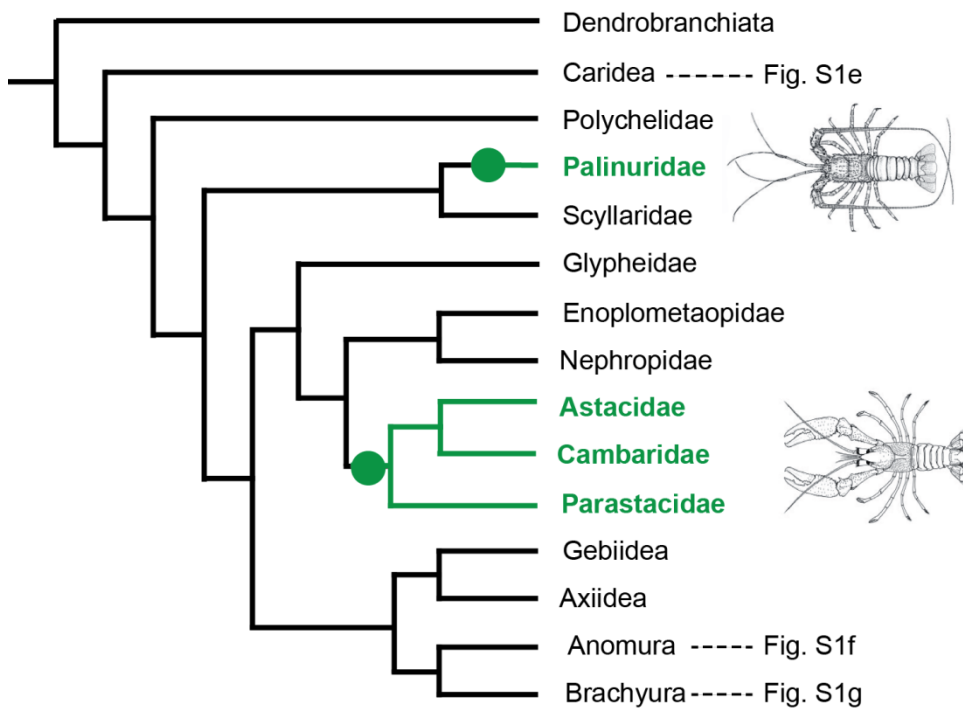


Fig. S1c. Phylogeny of flabelliferan and related Isopoda from Brandt and Poore (65) and the Isopoda: Valvifera from Poore (66).

d) Decapoda



e) Decapoda: Caridea

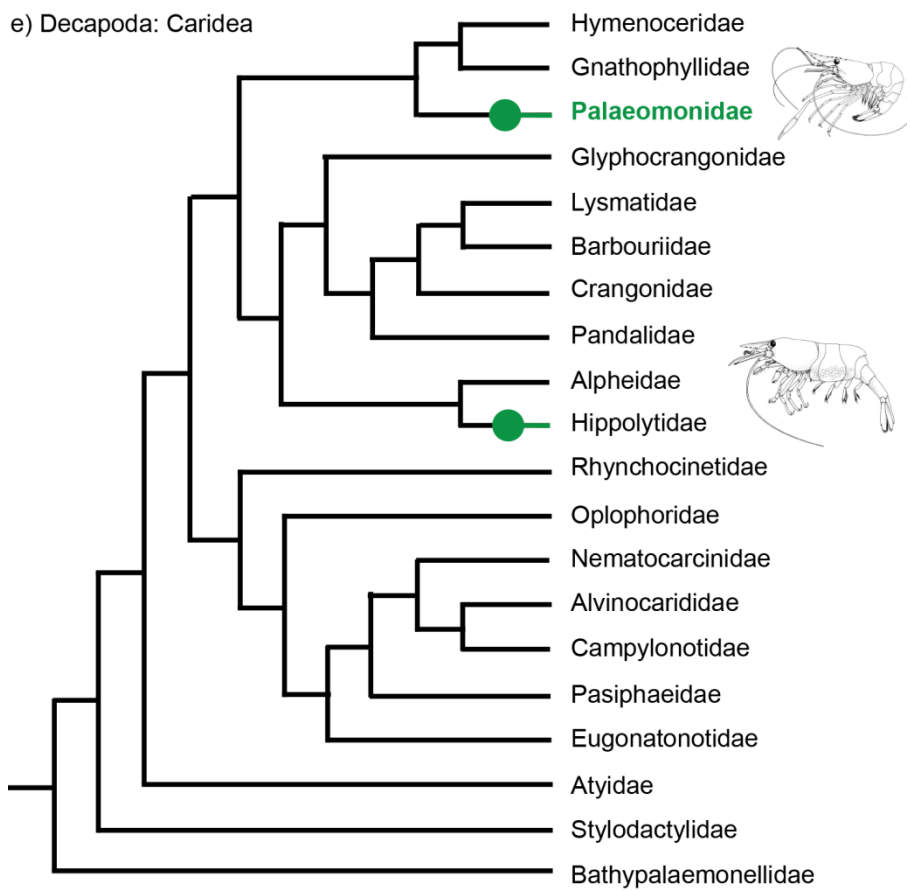


Fig. S1d) Phylogenies of the Decapoda from Bracken-Grissom et al. (42) and **e)** Caridea from Li et al. (86).

f) Decapoda: Anomura

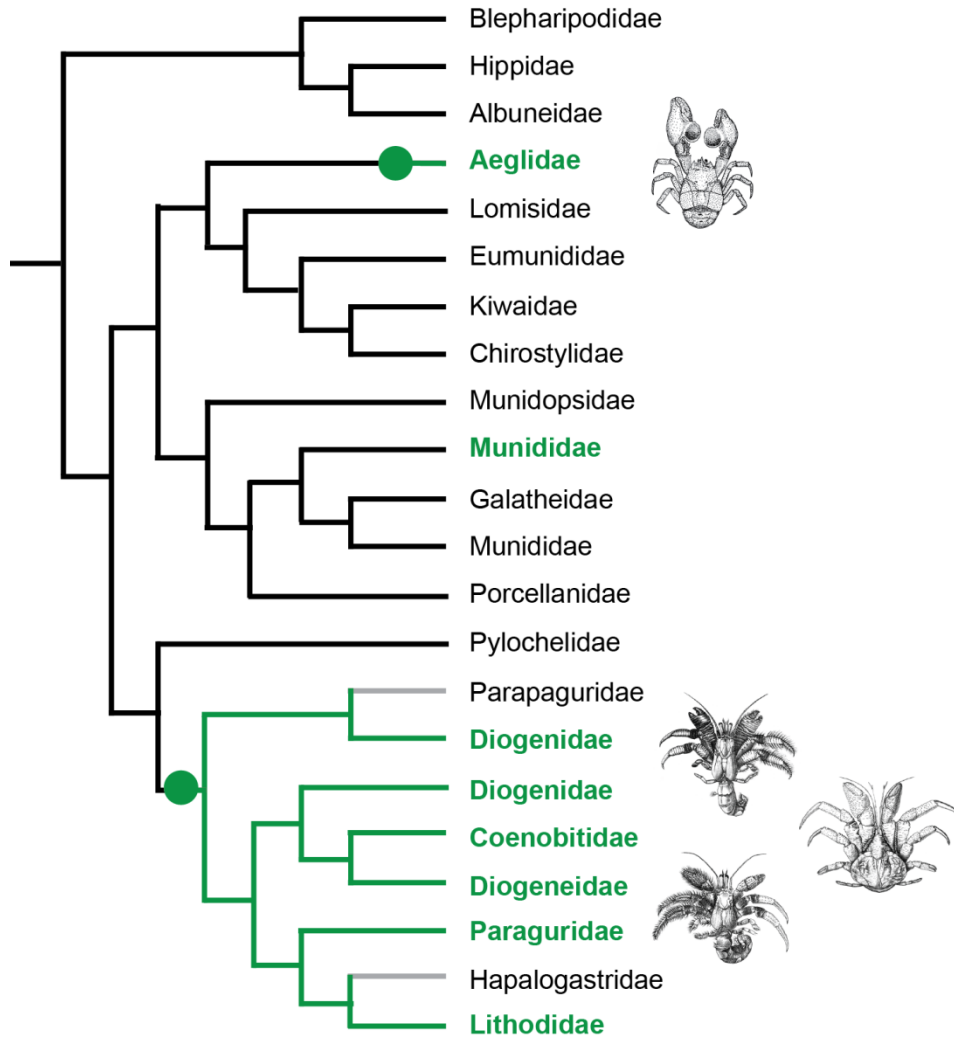


Fig. S1f) Phylogeny of the Anomura from Bracken-Grissom et al. (67)

g) Decapoda: Brachyura 1

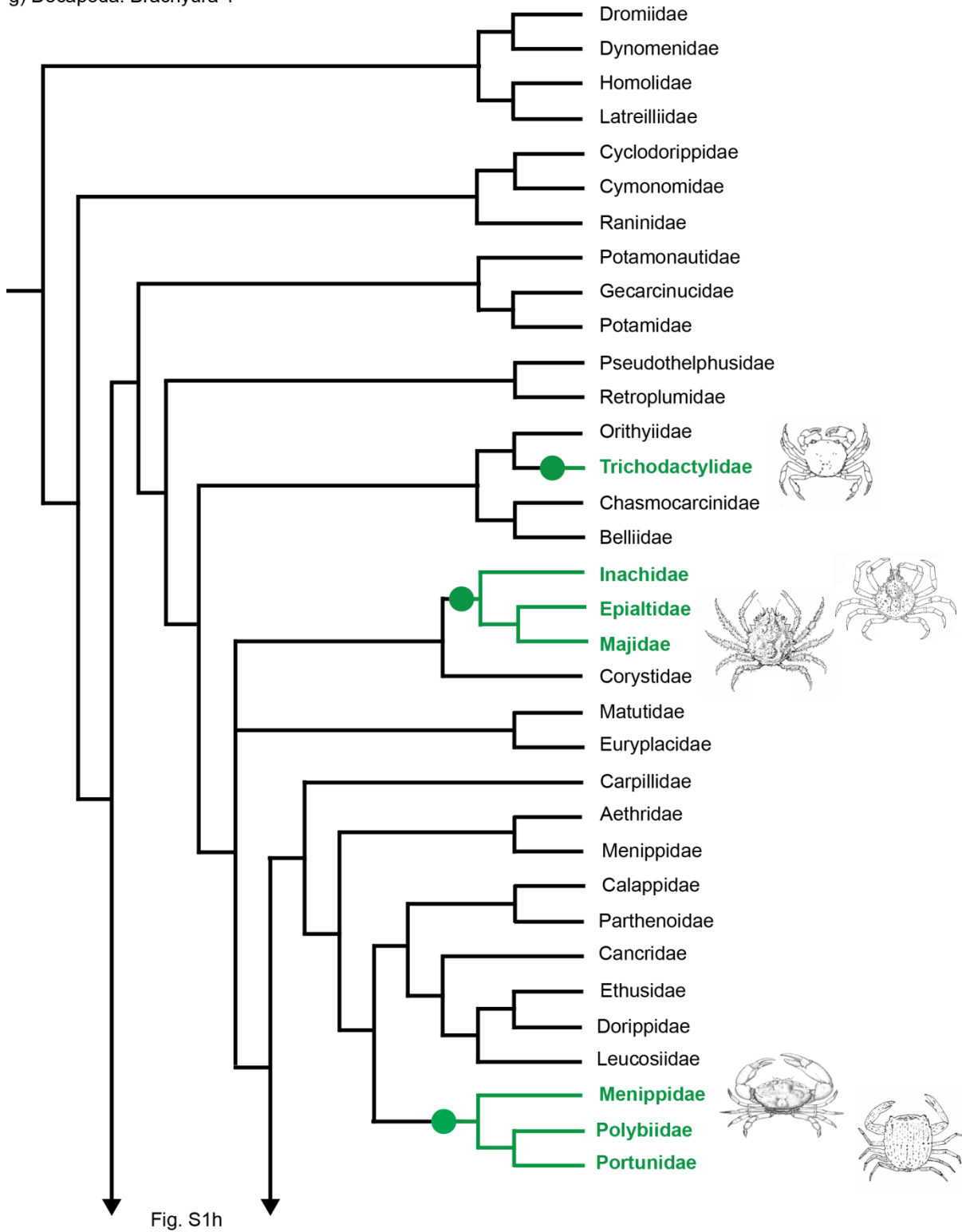


Fig. S1g) Phylogeny of the Brachyura from Tsang et al. (68)

h) Decapoda: Brachyura 2

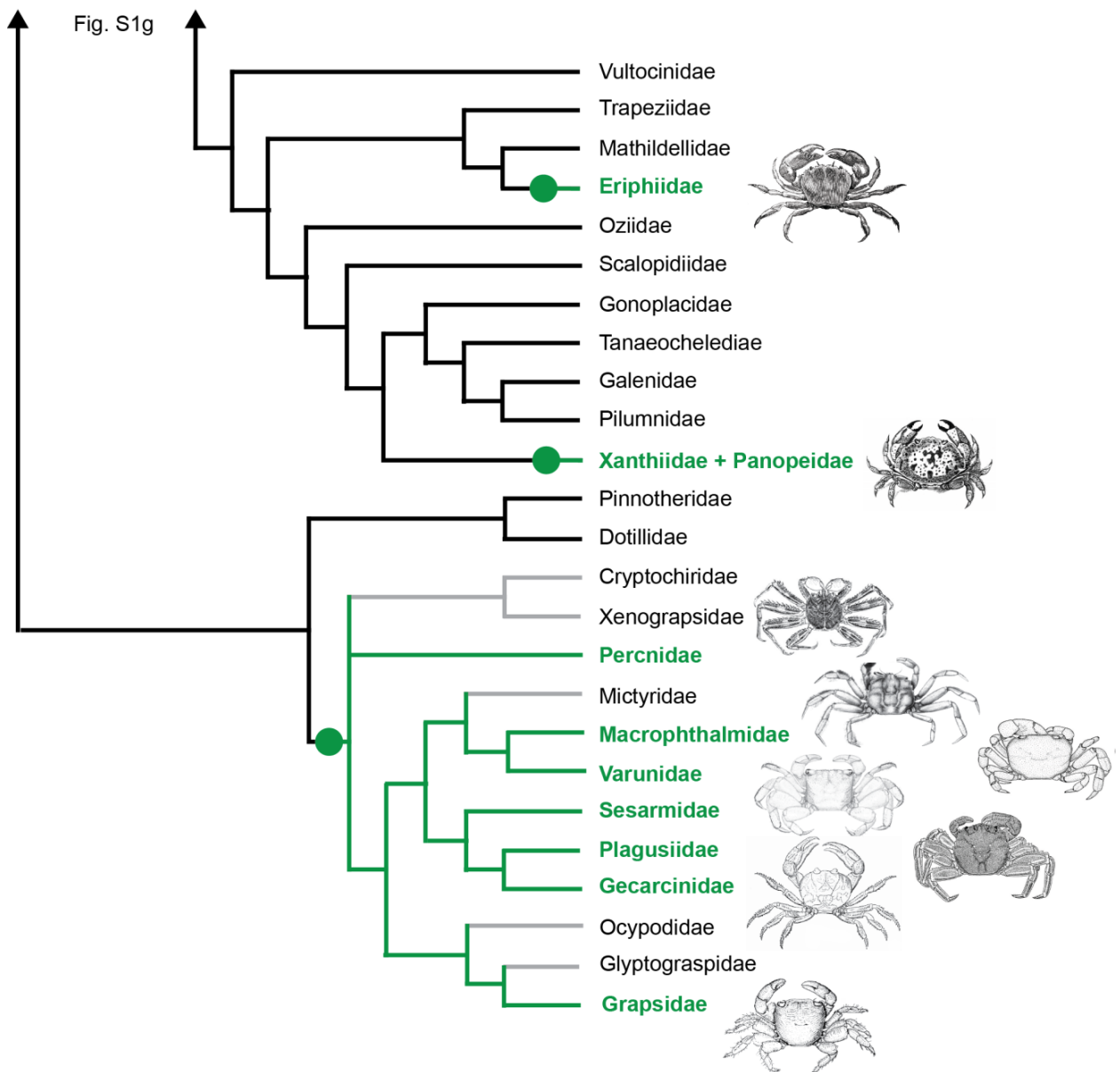


Fig. S1h) Phylogeny of the Brachyura from Tsang et al. (68)

i) Harpacticoida: Thalestridomorpha

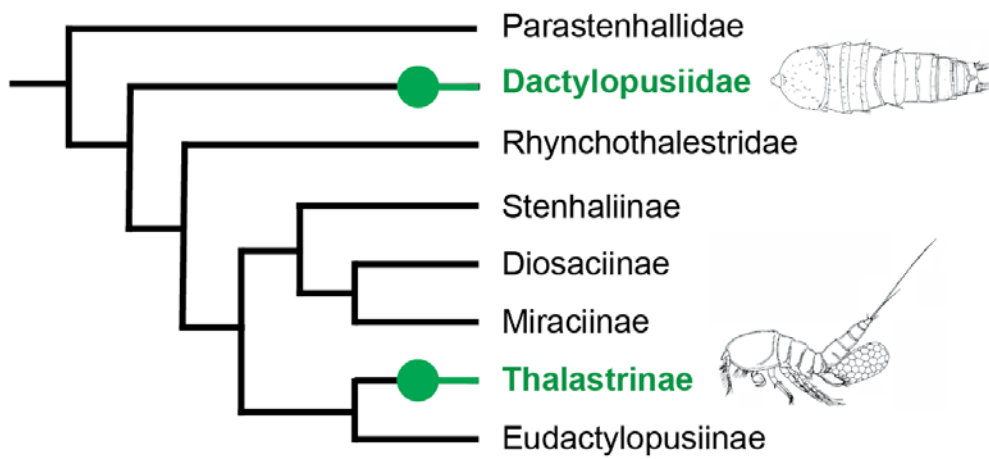


Fig. S1i) Phylogeny of the Harpacticoida: Thalestridomorpha from Sieg (83)