1. min. split (stem) Nautiloidea – Coleoidea (Bactritoidea, Ammonoidea): (step: sphaerical protoconch?)

*Bactrites*, Early Devonian (earliest Emsian): 410my

2. min. split (stem) Coleoidea – crown Coleoidea: (Hematitida, Donovaniconida) (step: internal shell)

*Hematites barbarae* – upper Lower Carboniferous (Serpukhovian) - 330my

3. min. split crown Coleoidea – stem Neocoleoidea (step: reduction of ventral shell wall= development of proostracum))

Permoteuthis (Phragmoteuthida) – Latest Permian (Changhsingian) - 254my

4. min. split stem Octobrachia – stem Decabrachia (step: development of octobrachian gladius, red. of 2nd armpair)

*Germanoteuthis donai* (stem Octobrachia) – middle Triassic (lower Ladinian) - 240my

*Tohokubelus*:(stem Decabrachia: Belemnitida) – late Early Triassic (Olenekian) - 250my

5. min. split Vampyromorpha – stem Octopoda

*Loligosepia bucklandi* (Vampyromorpha) – lower Jurassic (lower Sinemurian) - 195my

6A. min. split Cirrata - Incirrata

*Keuppia levante*- upper Cretaceous (Cenomanian) - 95my

6B. max. split Cirrata - Incirrata

*Patelloctopus ilgi* – upper Jurassic (upper Kimmeridgian) - 155my

7. min. split Argonauta

*Obinautilus pulchra* – Oligocene – 30my

8. min. oldest crown Decabrachia

*a) Ceratisepia* – upper Maastrichtian – 66my (oldest unambiguous sepiid)

b) *Conoteuthis* – Hauterivian – 133my (putative stem sepiid)

c) oegopsid/loliginid beaks – Albian - 100my (putative oldest (stem) Oegopsida/Loliginida)

d) *Groenlandibelus* - – upper Maastrichtian – 66my (oldest putative spirulid)