Table S3. Age estimates of independently derived traits of biradial symmetry, coloniality and photosymbioses in class Anthozoa. Bold type indicates ancestral character state of each trait.

Trait/State	Clade	Mean Age (Range) MYA	Geologic Period (Range)
Symmetry			
bilateral	Anthozoa	771 (648–894)	Tonian (Cryogenian–Tonian)
biradial	Corallimorpharia+Scleractinia	446 (375-523)	Silurian (Devonian-Cambrian)
biradial	Actiniaria	429 (349–513)	Silurian (Devonian–Cambrian)
Coloniality			
solitary	Anthozoa	771 (648–894)	Tonian (Cryogenian–Tonian)
colonial	Octocorallia	578 (483–685)	Ediacaran (Ordovician–Cryogenian)
colonial	Zoantharia	436 (336–531)	Silurian (Carboniferous–Cambrian)
colonial	Scleractinia	383 (324–447)	Devonian (Carboniferous–Ordovician)
colonial	Antipatharia	321 (249–407)	Carboniferous (Triassic–Devonian)
Photosymbiosis			
absent	Anthozoa	771 (648–894)	Tonian (Cryogenian–Tonian)
present	Scleractinia	383 (323–447)	Devonian (Carboniferous–Ordovician)
present	Holaxonia–Alcyoniina (Xeniidae clade)	318 (245–393)	Carboniferous (Triassic–Devonian)
present	Corallimorpharia (Ricordea–Discosoma clade)	312 (234–394)	Carboniferous (Triassic–Devonian)
present	Zoantharia (Zoanthus–Palythoa clade)	273 (205–345)	Permian (Jurassic–Carboniferous)
present	Holaxonia–Alcyoniina (Plexauridae clade)	210 (168–253)	Triassic (Cretaceous–Permian)
present	Actiniaria (Exaiptasia clade)	199 (149–253)	Jurassic (Jurassic–Permian)
present	Holaxonia–Alcyoniina (Sarcophyton–Sinularia clade)	169 (113–227)	Jurassic (Cretaceous–Triassic)
present	Calcaxonia–Pennatulacea (Helioporacea clade)	156 (136–189)	Jurassic (Cretaceous–Jurassic)
present	Actiniaria (Actinoidea clade)	151 (108–195)	Jurassic (Cretaceous–Jurassic)
present	Antipatharia (Myriopathes)	~70*	Cretaceous
present	Holaxonia–Alcyoniina (Isis-Rumphella clade)	55 (28–87)	Paleogene (Paleogene–Cretaceous)

*evolves within single lineage