

APPENDIX—Decapod families and genera demonstrating durophagy on Mollusca. Includes Holocene taxa known from the fossil record and extinct forms (†) exhibiting morphological features known in extant organisms to be adaptations to durophagy. Ma = mandibles; H = heterochelous first pereopods; MT = molariform teeth on occlusal surface of fingers; CT = curved, large tooth on proximal end of movable finger. For durophagous adaptations not known directly from fossil evidence, specialization listed as inferred. All others are based upon direct fossil evidence, for which images or specimens are listed.

Taxon	Reference to Predation Style	Geologic Range	Images or Specimens Examined	Specializations for Durophagy and Time of Appearance
Infraorder Glypheoidea Winkler, 1882				
Superfamily Erymoidea Van Straelen, 1924 [imprint 1925]				
† Erymidae Van Straelen 1924 [imprint 1925]	N/A	Permian–Late Cretaceous (Glaessner, 1969)		H (Late Triassic); MT (early Jurassic)
<i>Clytiella</i> Glaessner, 1931		Late Triassic (Förster, 1966)	Glaessner (1969, fig. 261.1)	H (Late Triassic)
<i>Enoploclytia</i> McCoy, 1849		Cretaceous (Förster, 1966)	Förster (1966, pl. 19, fig. 5)	H (Late Cretaceous)
<i>Eryma</i> Von Meyer, 1840		Early Jurassic	(Förster, 1966, pl. 16, fig. 8.)	H (Early Jurassic)
<i>Palaeastacus</i> Bell, 1850		Early Jurassic	(Förster, 1966, pl. 17, fig. 6)	MT (Early Jurassic)
Infraorder Astacidea Latreille, 1802				
Superfamily Palaeopalaemonidae Brooks, 1962				
† Palaeopalaemonidae Brooks, 1962	N/A	Devonian (Schram et al., 1978)		Taxon is known only from one genus.
<i>Palaeopalaemon</i>	N/A	Devonian (Schram et al., 1978)	Schram et al. (1978, text-fig. 4)	Taxon is poorly known; chela with blunt termination.
Superfamily Nephroidea Dana, 1852				
Nephropidae Dana, 1852	Wassenberg and Hill (1989)	Cretaceous–Holocene (Glaessner, 1969; Feldmann et al., 2007)		H, MT (Early Cretaceous)
† <i>Hoploparia</i> McCoy, 1849		Early Cretaceous–Miocene (Feldmann et al., 2007)	Fig. 6A; Feldmann et al (1993, fig. 7.1–4); Schweitzer and Feldmann (2001, fig. 5.1)	H, MT (Early Cretaceous)
<i>Metanephrops</i> Jenkins, 1972		Late Cretaceous–Holocene (Feldmann et al., 1993)	Feldmann (1989, fig. 3.2); Feldmann et al. (1993, fig. 10)	H, MT (Late Cretaceous)
Infraorder Palinura Latreille, 1802				
Superfamily Eryonoidea de Haan, 1841				
† Eryonidae de Haan, 1841	N/A	Late Triassic–Cretaceous (Garassino et al., 1996)		Ma inferred

† Coleiidae Van Straelen, 1924 [imprint 1925]	N/A	Late Triassic–Cretaceous (Van Straelen, 1924, [imprint 1925])		Ma inferred
† Tetrachelidae Beurlen, 1930	N/A	Upper Triassic (Glaessner, 1969)		Ma inferred
Palinuroidea Latreille, 1802				
Palinuridae Latreille, 1802	Robles et al. (1990)	Late Jurassic–Holocene	Glaessner (1969)	Ma (Late Cretaceous)
† <i>Archaeocarabus</i> McCoy, 1849		Eocene	BMNH 46358	CT, Ma (Eocene)
† <i>Astacodes</i> Bell, 1863		Late Jurassic–Cretaceous	Stenzel (1945, pl. 35, fig. 5)	Ma (Late Cretaceous)
<i>Linuparus</i> White, 1847		Early Cretaceous–Holocene (Feldmann et al., 2007)	Fig. 3C; numerous uncataloged specimens in SDSMT; Rathbun (1926, pl. 35, fig. 2; 1935, pl. 8, fig. 1) Stenzel (1945, pl. 45, fig. 2)	Ma (Late Cretaceous)
Scyllaridae Latreille, 1825	Lau (1987)	Early Cretaceous (Albian–Holocene)	Glaessner (1969)	Ma inferred
Infraorder Anomura MacLeay, 1838				
Superfamily Lithodoidea Samouelle, 1819				
Lithodidae Samouelle, 1819		Middle-late Miocene–Holocene (Feldmann, 1998)		Extant forms eat mollusks; method unknown
Superfamily Paguroidea Latreille, 1802				
Paguridae sensu lato		Middle Jurassic–Holocene (Schweitzer and Feldmann, 2001)		MT (Late Jurassic), H (Eocene)
† <i>Orhomalus</i> Étallon, 1861		Middle Jurassic–Late Cretaceous (Schweitzer et al., 2009)	Glaessner (1969, fig. 288.5)	MT (Late Jurassic)
<i>Paguristes</i> Dana, 1851		Cretaceous–Holocene (Glaessner, 1969)	Schweitzer and Feldmann (2001, pl. 13)	H (Eocene)
Infraorder Brachyura Latreille, 1802				
Podotrematous crabs				
Superfamily Dakoticancroidea Rathbun, 1917				
† Dakoticancriidae Rathbun, 1917	N/A	Late Cretaceous (Bishop et al., 1998)		MT (Late Cretaceous)

<i>Avitelmessus</i> Rathbun, 1923		Late Cretaceous (Bishop et al., 1998)	Kesling and Reimann (1957)	MT (Late Cretaceous)
Superfamily Homoloidea de Haan, 1839				
Homolidae de Haan, 1839		Late Jurassic – Holocene (Feldmann and Schweitzer, 2009)		Extant forms eat mollusks; method unknown
Superfamily Raninoidea De Haan, 1839				
Raninidae de Haan, 1839		Cretaceous–Holocene (Glaessner, 1969)		MT (Early Cretaceous)
<i>Eucorystes</i> Bell, 1863		Cretaceous (Schweitzer and Feldmann, 2001)	BMNH B30654, B30646	MT (Early Cretaceous)
Heterotrematous crabs				
Superfamily Calappoidea de Haan, 1833				
Aethridae Dana, 1851	Mantelatto and Petracco (1997)	Cretaceous–Holocene (Schweitzer et al., 2006)		H, MT, CT? (Early Cretaceous)
<i>Prehepatus</i> spp. Rathbun, 1935		Albian-Eocene (Schweitzer et al., 2006)	Rathbun (1935, pl. 11, figs. 26-30)	H, MT, CT? (Early Cretaceous)
Calappidae de Haan, 1833	Shoup (1968); Ng and Tan (1984)	Eocene–Holocene (Schweitzer and Feldmann, 2000a)		MT, CT (Eocene)
<i>Calappa</i> spp.	Shoup (1968); Ng and Tan (1984)	Eocene–Holocene (Schweitzer and Feldmann, 2000a)	Fig. 2C, D; Feldmann and Wilson (1988, fig. 13)	MT, CT (Eocene)
Superfamily Majoidea Samouelle, 1819				
Majidae Samouelle, 1819 <i>sensu lato</i>	Woods (1993)	Eocene–Holocene (McLay et al., 1995)		Extant forms chip, crush with mandibles, wedge
Superfamily Parthenopoidea MacLeay, 1838				
Parthenopidae MacLeay, 1838	Zipser and Vermeij (1978); Seed and Hughes (1995)	Eocene–Holocene (Glaessner, 1969; Schweitzer et al., 2006)		H, MT (in some taxa only) (Miocene)
<i>Daldorfia</i> Rathbun, 1904		Eocene–Holocene (Schweitzer, 2001a)	Karasawa and Kato (1996, fig. 4)	
Superfamily Cancroidea Latreille, 1802				
Cancridae Latreille, 1802	Seed and Hughes (1995)	Eocene–Holocene (Schweitzer and Feldmann, 2000b)		MT (Eocene)

<i>Anisospinos</i> Schweitzer and Feldmann, 2000b		Eocene (Schweitzer and Feldmann, 2000b)	Schweitzer and Feldmann (2000b, fig. 2)	MT (Eocene)
Superfamily Portunoidea Rafinesque, 1815				
† Carcineretidae Beurlen, 1930	N/A	Late Cretaceous (Karasawa et al., 2008)		H (Late Cretaceous)
<i>Carcineretes</i> Withers, 1922		Late Cretaceous (Vega et al., 1997; 2001)	Fig. 6C	H (Late Cretaceous)
Carcinidae MacLeay, 1838	Seed and Hughes (1995)	Eocene–Holocene (Karasawa et al., 2008)		H, MT (Miocene)
Geryonidae Colosi, 1923	None	Late Oligocene–Holocene (Karasawa et al., 2008)		Extant forms eats mollusks; method unknown
† Longusorbiidae Karasawa et al., 2008	N/A	Late Cretaceous–Eocene (Karasawa et al., 2008)		H (Late Cretaceous)
<i>Longusorbis</i> Richards, 1975		Campanian (Richards, 1975)	Fig. 6B	H (Late Cretaceous)
Macropipidae Stephenson and Campbell, 1960	None	Cretaceous–Holocene (Karasawa et al., 2008)		H, MT (Late Cretaceous)
† <i>Ophthalmoplax</i> Rathbun, 1935		Turonian–Maastrichtian (Schweitzer, Feldmann et al., 2007)	Rathbun (1935, fig. 15; Schweitzer et al., 2007, fig. 1C, D)	H, MT CT? (Late Cretaceous)
? <i>Ophthalmoplax</i> sp.		Maastrichtian	Rathbun (1935, pl. 13, fig. 18)	H, MT, CT? (Late Cretaceous)
Portunidae Rafinesque, 1815	Seed and Hughes (1995)	Eocene–Holocene (Karasawa et al., 2008)		H, MT (Eocene)
Superfamily Carpilioidea Ortmann, 1893				
† Tumidocarcinidae Schweitzer, 2005b	N/A	Cretaceous–Miocene (Schweitzer, Artal et al., 2007)	Schweitzer et al. (2007, figs. 3B, C)	H, MT (Eocene)
† Zanthopsidae Via, 1959	N/A	Paleocene–Miocene (Schweitzer, 2003)	Fig. 6D; Schweitzer (2003, fig. 4)	H, MT, CT (Eocene)
Superfamily Xanthoidea MacLeay, 1838				
Panopeidae Ortmann, 1893	Milke and Kennedy (2001)	Paleocene–Holocene (Karasawa and Schweitzer, 2006)		H, MT (Eocene)
† <i>Glyphithyreus</i> Reuss, 1859		Paleocene–Holocene (Karasawa and Schweitzer, 2006)	Bell (1858, pl. II, fig. 8)	H, MT (Eocene)

Xanthidae MacLeay, 1838 <i>sensu stricto</i>	Mori et al. (1995)	Paleocene–Holocene (Karasawa and Schweitzer, 2006)	Müller (1984, pl. 99)	H, MT (Miocene)
Xanthidae <i>sensu lato</i>	Dietl and Vega (2008)	Late Cretaceous		H, MT, CT (Late Cretaceous)
<i>Megaxantho</i> Vega et al., 2001		Late Cretaceous (Vega et al., 2001)	Dietl and Vega (2008, fig. 1)	H, MT, CT (Late Cretaceous)
Superfamily Eriphioidea MacLeay, 1838				
Eriphiidae MacLeay, 1838	Vermeij (1977); Seed and Hughes (1995)	Eocene–Holocene (Schweitzer et al., 2007)		H, MT (Eocene)
<i>Lathhyposia</i> Schweitzer et al., 2007		Eocene (Busulini et al., 1984)	Busulini et al. (1984, fig. 1, pls. 1-3)	H, MT (Eocene)
Oziidae Dana, 1851a	Hughes (1989)	Eocene–Holocene (Karasawa and Schweitzer, 2006)		MT (Miocene)
<i>Ozius</i> H. Milne Edwards, 1834		Miocene–Holocene (Karasawa, 1992)	Karasawa (1992, pl. 1b)	MT (Miocene)
Superfamily Goneplacoidea MacLeay, 1838				
Goneplacidae MacLeay, 1838	none	Cretaceous–Holocene (Karasawa and Schweitzer, 2006)		H, MT (Late Cretaceous)
<i>Icriocarcinus</i> Bishop, 1988		Cretaceous (Bishop, 1988)	Schweitzer et al. (2007, fig. 3A, fig. 4A)	H, MT (Late Cretaceous)
Mathildellidae Karasawa and Kato, 2003	None	Palaeocene–Holocene (Karasawa et al., 2008)		H, MT in extinct members (Eocene)
† <i>Branchioplax</i> Rathbun, 1916		Eocene (Rathbun, 1916; Schweitzer, 2000)	Schweitzer (2000, fig. 3)	H, MT (Eocene)
Superfamily Grapsoidea MacLeay, 1838				
Varunidae H. Milne Edwards, 1853	Yamada and Boulding (1998)	Eocene–Holocene	Personal data	H