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Keys and bibliography for the identification of zoeal stages of brachyuran crabs from the Western Indian Ocean

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Abstract

Approximately 430 brachyuran species have been identified as inhabiting the Western Indian Ocean (WIO), of which only 125 species have full or partial larval descriptions available. These descriptions were analysed and zoeal characters compared, in order to assess diagnostic characters for their identification. An identification key is provided for family level and identification keys to species level are provided for most families. These keys were constructed using external morphological characters whenever possible, to decrease the need for dissection and make identification as easy as possible. Only the first zoeal stage was considered, as many descriptions only consider this stage.

Keywords: Crustacea; Brachyura; larvae; morphology; key; first stage zoeas

Introduction

Brachyuran crabs are one of the major and most successful animal groups in coastal ecosystems, with 6793 species (Ng *et al*., 2008), and are one of the most abundant macroinvertebrate groups in tropical regions, in habitats such as mangroves and tidal flats (Clark and Paula, 2003). Four hundred and thirty species of brachyuran crabs have been identified as inhabiting the Western Indian Ocean (Barnard, 1950; Kensley, 1981; Emmerson, 2016).

The geographical area of this study is the Western Indian Ocean (WIO), covering the eastern coast of Africa from Somalia to Port Elizabeth in South Africa (including Kenya, Tanzania and Mozambique), and the WIO island states of Madagascar, Seychelles, Comoros, Reunion (France) and Mauritius. There is a lack of identification tools for the identification of larval crustaceans in the plankton of the WIO region, including the brachyuran crabs.

The aims of this study are to compile the available larval descriptions and produce identification keys for the families, and whenever possible for species within each family. The basic structure of the identification keys is based on the works of Rice (1980) and Clark and Cuesta (2015). The keys include the available published descriptions and unpublished descriptions from laboratory rearing of a number of species, which include *Dotilla fenestrata*, *Chaenostoma boscii*, *Macrophthalmus depressus*, *M. grandidieri*, *Astruca annulipes*, *Gelasimus vocans, Paraleptuca chlorophthalmus* and *Tubuca urvillei* (Paula *et al.*, in prep.).

Materials and methods

The list of species in the WIO (see Table 1) area was constructed mainly using the works of Barnard (1950), Kensley (1981) and Emmerson (2016) and using information from the online database GBIF (http://www.gbif.org). The structure of the identification key at family level was primarily based on the works of Rice (1980) and Clark and Cuesta (2015). The keys for individual families were based on published descriptions and own unpublished work (Paula *et al.*, in prep.). Taxonomic information from Ng *et al.* (2008) and the online database WoRMS (http://www.marinespecies.org) was revised. The identification key of families does not reflect taxonomic groupings; however, the

individual family keys are organized taxonomically according to Ng *et al.* (2008).

Whenever possible external morphological characters of brachyuran zoeal stage I (see Fig. 1) were used to build the keys, however due to the restricted number of morphological features used for brachyuran larval identification some characters require dissection to be observed, such as appendage setation (see Fig. 2). This requires dissection and observation under a compound microscope.

The freshwater family Potomonautidae has been excluded from this study as only salt and brackish water species have been considered, and due to the fact that species of this family have direct development.

Identification keys

Identification Key for brachyuran families

1. Antennal exopod flat and scale-like 2
   Antennal exopod rod-like, reduced or absent, but never a flat scale 8

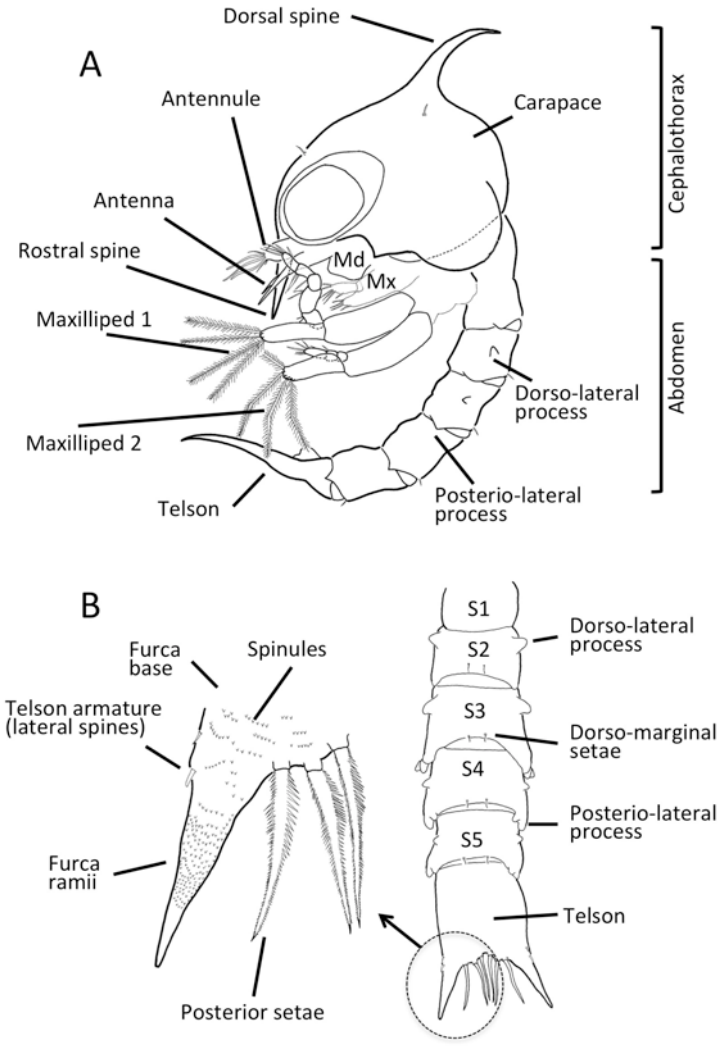

Figure 1. Main characters used in the identification keys for the first zoeal stage – external. (A) lateral view; (B) dorsal view of abdomen and detail of telson (Sesarma leptosoma, adapted from Flores et al., 2003).

2. Carapace without spines 3
   Carapace with spines 4

3. Telson not furcated, triangular shaped, with long marginal plumose setae and spines on posterolateral margins DYNOMENIDAE
   Telson furcated with long terminal, serrulate setae along the inner and apical part of the furcal rami HOMOLODROMIIDAE

4. Rostral spines anteriorly directed 5
   Rostral spines ventrally directed 7

5. Telson furcated with long terminal, serrulate setae along the inner and apical part of the furcal rami DROMIIDAE
   Telson not furcated, triangular shaped, with long marginal plumose setae and spines on posterolateral margins 6

6. Carapace lateral spines present; pleonites with dorsolateral and posterolateral processes HOMOLIDAE
   Carapace lateral spines absent; pleonites without dorsolateral and posterolateral processes LATREILLIIDAE

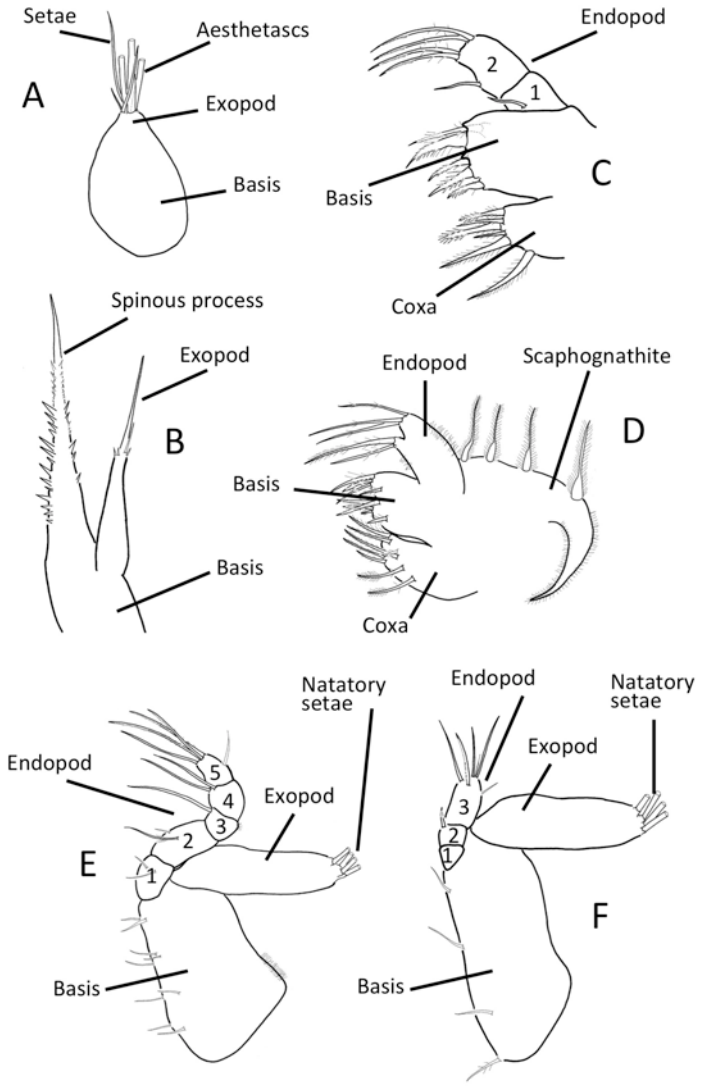

Figure 2. Main characters used in the identification keys for the first zoeal stage – appendage setation. (A) antennule; (B) antenna; (C) maxillule; (D) maxilla; (E) first maxilliped; (F) second maxilliped (Sesarma leptosoma, adapted from Flores et al., 2003).

7. Telson furcated with long terminal, serrulate setae along the inner and apical part of the furcal rami; maxillule endopod bilobed with 1+3 setae CYMONOMIDAE
   Telson not furcated, triangular shaped, with long marginal plumose setae and spines on posterolateral margins; maxillule endopod bilobed with 0+(4/5) setae RANINIDAE

8. Two zoeal stages, that is never with more than 6 natatory setae on the exopods of the maxillipeds. In stage I (with 4 natatory setae) the scaphognathite has at least 9 marginal setae. In stage II (with 6 natatory setae) there are well-developed pleopods on pleonites 2 – 5, at least as long as their respective somites. Basal segment (ischium) of endopod of first maxilliped always with 2 medial setae 9 (MAJOIDEA)
   Almost always with more than two zoeal stages, so that there may be 8 or more natatory setae. In stage I the scaphognathite almost always has less than 9 marginal setae (usually 3 or 4); if there are more than 9 marginal setae in stage I, the basal segment of the first maxilliped carries 3 medial setae. Pleopods never well-developed in zoeae with 6 natatory setae on the exopods of the maxillipeds 13

9. Antennal exopod equal or longer than protopod 10
   Antennal exopod shorter than protopod 12

10. Maxilla endopod with 2+2 or 3+(2/3) setae MAJIDAE (Genera *Micippa* and *Schizophrys*)
    Maxilla endopod with 3+6 setae 11

11. Basis of second maxilliped with 2-3 setae (0/1,1,1); endopod of second maxilliped 3-segmented with 1,1, (4/6) setae EPIALTIDAE
    Basis of second maxilliped with 0-3 setae (0/1,0/1,0/1); endopod of second maxilliped 3-segmented with 0,1, 4 setae INACHIDAE

12. Maxilla endopod not bilobed with 5 setae MAJIDAE (Genera *Eurynome* and *Maja*)
    Maxilla endopod bilobed OREGONIIDAE

13. Telson furcated; constriction in proximal part and strong lateral spines in some cases; conspicuously long and unarmed furcal rami 14
    Telson furcated or not; telson not constricted 15

14. Maxilulle endopod with 0+4 setae; maxilla endopod with 1+3 setae DORIPPIDAE
    Maxilulle endopod with 0+6 setae; maxilla endopod with 1+5 setae ETHUSIDAE

15. Antennal exopod absent or present but reduced 16
    Antennal exopod present, well developed 23

16. Telson not furcated and triangular in shape with 1 to 3 small spines at each posterolateral margin LEUCOSIIDAE
    Telson furcated 17

17. Maxillule endopod with 4 or less setae; basis of first maxilliped with 10 setae 18
    Maxillule endopod with 5 or more setae; basis of first maxilliped with 10 setae or less 19

18. Pleonites 3-5 with posterolateral processes, maxilla endopod with 2+3 setae DOTILLIDAE (part)
    Pleonites without posterolateral processes, maxilla endopod with 1+2 setae PINNOTHERIDAE

19. Antennal exopod absent 20
    Antennal exopod present but reduced 22

20. Telson furcal rami armed with dorsal and lateral spines; basis of first maxilliped with 10 setae MATUTIDAE
    Telson furcal rami armed with lateral spines; basis of first maxilliped with 9 setae or less 21

21. Basis of first maxilliped with 9 setae (2,2,2,3) PALICIDAE
    Basis of first maxilliped with 8 setae (2,2,2,2) GRAPSIDAE (*Metopograpsus* spp.)

22. Telson rectangular; maxilla endopod with 2+2 setae GRAPSIDAE (excluding *Metopograpsus* spp.)
    Telson elongate trapezoidal, wider anteriorly; maxilla endopod with 2+3 setae HYMENOSOMATIDAE

23. Antennal exopod well developed, similar in size or longer than protopod and with medial setae 24
    Antennal exopod shorter than protopod, with terminal setae and spines 33

24. Telson furca unarmed 25
    Telson furca armed 26

25. Pleonal lateral expansions on pleonite 5 MACROPHTHALMIDAE

Pleonal lateral expansions on pleonites absent VARUNIDAE

26. Telson furca armed with dorsal and lateral spines 27
Telson furca armed with either dorsal or lateral spines 29

27. Posterolateral processes present on pleonites 2-5 GONEPLACIDAE
Posterolateral processes present on pleonites 3-5 28

28. Dorsolateral processes present on pleonites 2-3 PILUMNIDAE
Dorsolateral processes present on pleonites 2-4 GERYONIDAE

29. Pleonal lateral expansions present on pleonite 4 CRYPTOCHIRIDAE
Pleonal lateral expansions present on pleonites absent 30

30. Dorsolateral processes present only on pleonite 2 HEXAPODIDAE
Dorsolateral processes present on pleonites 2-3 or 2-4 31

31. Dorsolateral processes on pleonites 2-4 CAMPTANDRIIDAE
Dorsolateral processes on pleonites 2-3 32

32. Basis of second maxilliped with 4 setae; telson furca with lateral spines; maxilla endopod bilobed with 3+5 setae EURYPLACIDAE
Basis of second maxilliped with 3 setae; telson furca with lateral or dorsal spines; maxilla endopod bi-lobed with 2+3 setae DOTILLIDAE (part)

33. Dorsolateral processes only on pleonite 2 34
Dorsolateral processes on pleonites 2-3 or 2-5 38

34. Telson furcal rami armed with either dorsal spines or lateral spines 35
Telson furcal rami armed with dorsal and lateral spines 36

35. Telson furcal rami armed with dorsal spines CORYSTIDAE
Telson furcal rami armed with lateral spines MENIPPIDAE

36. Carapace lateral spines absent CARCINIDAE
Carapace lateral spines present 37

37. Posterolateral processes on pleonites 2-4 ATELECYCLIDAE
Posterolateral processes on pleonites 3-5 CANCRIDAE

38. Pleonite 1 with middorsal process 39
Pleonite 1 without any processes 40

39. Two pairs of carapace lateral spines; maxilla endopod with 3+5 setae TRAPEZIIDAE
One pair of carapace lateral spines; maxilla endopod with 1+2 setae OCYPODIDAE (*Ocypode ceratophthalmus*)

40. Dorsolateral processes on pleonites 2-5 41
Dorsolateral processes on pleonites 2-3 44

41. Telson furcal rami armed with only lateral spines 42
Telson furcal rami armed with lateral and dorsal spines 43

42. Basis of first maxilliped with 8 setae arranged 2,2,2,2 PLAGUSIIDAE
Basis of first maxilliped with 9 setae arranged 2,2,3,2 PERCNIDAE

43. Carapace lateral spines present ERIPHIIDAE
Carapace lateral spines absent CARPILIIDAE

44. Posterolateral processes on somites 2-5 or absent 45
Posterolateral processes on somites 3-5 48

45. Telson furcal rami either unarmed or armed with dorsal spines
OCYPODIDAE (except *Ocypode ceratophthalmus*)

Telson furcal rami armed with dorsal and lateral spines 46

46. Ventral spines on telson furcal rami present PANOPEIDAE
Ventral spines on telson furcal rami absent 47

47. Maxilla endopod with 2+5 setae; basis of first maxilliped with 8 setae (2,2,2,2); maxillule endopod with 0+6 setae CALAPPIDAE
Maxilla endopod with 3+5 setae; basis of first maxilliped with 10 setae (2,2,3,3); maxillule endopod with 1+6 setae OZIIDAE

48. Telson furcal rami unarmed or armed with either dorsal or lateral spines 49
Telson furcal rami armed with dorsal and lateral spines 51

49. Carapace lateral spines absent SESARMIDAE
Carapace lateral spines present 50

50. Maxillule endopod with 0+4 setae; basis of second maxilliped with 3 setae (1,1,1); endopod of second maxilliped with 0,1,6 setae DOTILLIDAE (part)
Maxillule endopod with 1+5 setae; basis of second maxilliped with 4 setae (1,1,1,1); endopod of second maxilliped with 1,1,6 setae GECARCINIDAE

51. Proximal segment of maxilla endopod with 2 setae 52
Proximal segment of maxilla endopod with 3 setae 54

52. Maxillule endopod bilobed with 1+5 setae; distal segment of maxilla endopod with 3 setae TETRALIIDAE
Maxillule endopod bilobed with 1+6 setae; distal segment of maxilla endopod with 4 or more setae 53

53. Basis of first maxilliped with 10 setae; distal segment of maxilla endopod with 4 setae PORTUNIDAE
Basis of first maxilliped with 8 setae; distal segment of maxilla endopod with 5 setae PARTHENOPIDAE

54. Basis of first maxilliped with 9 setae or less 55
Basis of first maxilliped with 10 setae 56

55. Basis of first maxilliped with 8 setae (2,2,2,2); endopod of first maxilliped 5-segmented with 2,2,1,2,5 setae POLYBIIDAE
Basis of first maxilliped with 9 setae (2,2,3,2); endopod of first maxilliped 5-segmented with 3,2,1,2,5 setae AETHRIDAE

56. Endopod of first maxilliped 5-segmented with 2,2,1,2,5 setae OVALIPIDAE
Endopod of first maxilliped 5-segmented with 3,2,1,2,5 setae 57

57. Maxilla endopod bilobed with 3+5 setae XANTHIDAE
Maxilla endopod bilobed with 3+3 setae DAIRIDAE

Identification Key for:

Dromiidae

The family Dromiidae has 28 species in the WIO region, distributed in 16 genera all belonging to the subfamily Dromiinae: *Ascidiophilus caphyraeformis*, *Barnardromia bituberculata*, *B. hirsutimana*, *Conchoecetes artificiosus*, *Cryptodromia bullifera*, *C. fallax*, *Dromia dormia*, *Dromidia aegibotus*, *D. cornuta*, *D. dissothrix*, *D. hirsutissima*, *D. lepidota, Eudromidia frontalis*, *E. hendersoni*, *Exodromidia spinosa*, *E. spinosissima*, *Hemisphaerodromia monodous*, *Lauridromia dehaani*, *L. intermedia*, *Lewindromia unidentata*, *Metadromia wilsoni*, *Platydromia spongiosa*, *Pseudodromia cacuminis*, *P. latens*, *P. rotunda*, *P. trepida*, *Speodromia platyarthrodes* and *Tumidodromia dormia*. This family occupies a diverse range of habitats, from the intertidal to depths of 600 meters. The zoeae of this family present a furcated telson with long terminal, serrulate setae along the inner and apical part of the furcal rami, and the rostral spine is anteriorly directed. Of the 28 species identified only two have larval descriptions: *Conchoecetes artificiosus* and *Lauridromia dehaani* by McLay *et al.* (2001).

Antennule exopod with 1 plumose seta and 6 aesthetascs; basis of first maxilliped with 12 plumose setae (arranged 3,3,3,3); coxa of first maxilliped with 2 plumose setae *Conchoecetes artificiosus*

Antennule exopod with 1 plumose seta and 5 aesthetascs; basis of first maxilliped with 11 plumose setae (arranged 2,3,3,3); coxa of first maxilliped with 1 plumose seta *Lauridromia dehaani*

Homolidae

The family Homolidae has 10 species in the WIO region distributed in seven genera, *Homola barbata, H. orientalis, Homolochunia valdividae, Ihlopsis multispinosa, Lamoha murotoensis, Latreillopsis bispinosa, L. tetraspinosa, Mohola alcocki, M. alisae* and *Paromola cuvieri*. This family is often reef-associated and it also occupies benthic habitats within the depth range 38 meters to 700 meters, although some *Paramola cuvieri* have been captured at 1212 meters (Fischer *et al*., 1981). Of the 10 species identified only 2 have larval descripitons: *Homola barbata* by Rice and Provenzano Jr. (1970) and Clark and Cuesta (2015), and *Paromola cuvieri* by Samuelsen (1976). The zoeae of this family present an anteriorly directed rostral spine and lateral spines in the carapace, and dorsolateral and posterolateral processes in the pleonites.

Antennal exopod with 9 long plumose setae; endopod of first maxilliped 5-segmented with 1,1,1,2,5

setae; exopod of first maxilliped with 4 natatory setae *Homola barbata*

Antennal exopod with 5 or 6 long setae; endopod of first maxilliped 5-segmented with 1,1,1,2,4 setae; exopod of first maxilliped with 3 natatory setae *Paromola cuvieri*

Raninidae

The family Raninidae has five species in the WIO region distributed in four subfamilies, Lyreidinae, Notopodinae, Ranininae and Raninoidinae. The Lyreidinae subfamily is represented by one species, *Lyreidus brevifrons*; the Notopodinae subfamily is represented by two species, *Cosmonotus grayii* and *Notopus dorsipes*; the Ranininae subfamily is represented by one species, *Ranina ranina*; the Ranioidinae subfamily is represented by one species, *Raninoides barnardi*. This family, commonly known as frog crabs due to their elongated cephalothorax, consists of reef-associated and borrowing species, preferring sandy substrates. The zoeae of this family present a ventrally directed rostral spine and a non furcated telson, triangular, with long marginal plumose setae and spines on posterolateral margins. Of the five species identified, only one has a larval description: *Ranina ranina* by Sakai (1971).

Aethridae

The family Aethridae has three species in the WIO region, *Actaeomorpha erosa*, *Aethra scruposa* and *A. seychellensis*. This family is reef-associated and can be found in a depth range of 0 meters to 40 meters. The zoeae of this family have long lateral carapacae spines, one-half the length of the width of the carapace, and telson usually with 2 or 3 spines on each furca. Of the three species identified, only one has a larval description: *Aethra scruposa* by Clark (in press).

Calappidae

The family Calappidae has 12 species in the WIO region distributed in two genera, *Calappa africana, C. gallus¸C. guerini, C. hepatica, C. japonica, C. lophos, C. pustulosa, C. woodmasoni, Mursia africana, M. armata, M. cristiata* and *M. flamma*. The genus *Calappa* inhabits sandy and muddy substrates at depths of 30 meters to 380 meters, with most species inhabiting the 40-72 meters range, except for *C. hepatica* which is present in inter-infratidal habitats; while the genus *Mursia* inhabit sandy and muddy substrates at depths of 10 meters to 510 meters, mostly below the 200 meters range. The zoeae of this family present a ventrally curved rostral spine with pointed spinules along anterior half, furcated telson with 2 lateral spines on furcal rami and maxilla endopod with 2+5 setae. Of the 12 species identified only three have larval descriptions: *Calappa gallus, C. japonica* by Taishaku and Konishi (1995), and *C. lophos* by Seridji (1993) and Taishaku and Konishi (1995).

1. Rostral carapace spine with 6-10 pointed spinules along its anterior half *Calappa gallus*
Rostral carapace spine with 4-5 pointed spinules along its anterior half 2

2. Endopod of second maxilliped 3-segmented with 1,1,3 setae *Calappa japonica*
Endopod of second maxilliped 3-segmented with 1,1,4 setae *Calappa lophos*

Matutidae

The family Matutidae has one species in the WIO region, *Ashtoret lunaris*. This family, commonly known as the moon crabs, is found in sandy or muddy shores, with a preference for seagrass beds, reaching depths of up to 50 meters. The zoeae of this family do not have an antennal exopod and have a furcated telson armed with dorsal and lateral spines. The larvae of this species has been described by Seridji (1993) and Taishaku and Konishi (1995).

Atelecyclidae

The family Atelecyclidae has one species in the WIO region, *Atelecyclus rotundatus*. This family has benthic and demersal species, with depth ranges from 0 to 1200 meters. The zoeae of this family present an antennal exopod shorter than the protopod, with terminal seate and spines, the carapace presents lateral spines and the furcated telson is armed with dorsal and lateral spines, and the pleonites 2 to 4 present posterolateral processes. The larvae of this species has been described by Hong and Ingle (1987).

Carpiliidae

The family Carpillidae has two species in the WIO region, both belonging to the genus *Carpilius*; *C. convexus* and *C. maculatus*. These species inhabit rocky or coraline substrates in the littoral to sublittoral zones (depths of 0-35 meters). The zoeae of this family present short dorsal and rostral carapace spines and the first pleonite with 4 setae. Both species have larval descritions: *Carpilius convexus* and *C. maculatus* by Clark *et al.* (2005).

Carapace with 9 pairs of anterodorsal setae and lateral spines absent; endopod of maxillule 2-segmented

with 1+4 setae; scaphognathite (maxilla exopod) with 15 marginal setae; coxa of maxilla bilobed with 6+4 setae *Carpilius convexus*

Carapace with 4 pairs of anterodorsal setae and lateral spines absent; endopod of maxillule 2-segmented with 1+5 setae; scaphognathite (maxilla exopod) with 17 marginal setae; coxa of maxilla bilobed with 7+4 setae *Carpilius maculatus*

Dairidae

The family Dairidae has one species in the WIO region, *Daira perlata*. This family occupies benthic habitats reaching maximum depths of 6 meters. The genus *Daira* is the only one in this family and is considered a living fossil (Busulini *et al*., 2006). The zoeae of this family present a furcated telson with dorsal and lateral spines on furcal rami, the basis of first maxilliped with 10 setae and maxilla endopod bilobed with 3+3 setae. The larvae of *D. perlata* has been described by Clark (in press).

Dorippidae

The family Dorippidae has four species in the WIO region distributed by three genera, *Dorippe frascone*, *D. quadridens*, *Dorippoides midipes* and *Medorippe lanata*. The genus *Dorippe* inhabits bethic areas between 0-73 meters (with *D. quadridens* sometimes reaching depths of 415 meters); *Dorippoides nudipes* between depths of 2-77 meters; and *Medorippe lanata* inhabits muddy detritic areas between 10-250 meters. The zoeae of this family present long dorsal and rostral carapace spines, telson bifurcated with conspicuously long and unarmed furcal rami, with a constriction in proximal part and strong lateral spines in some cases, and maxilla endopod with 1+3 setae. Of the four species identified only two have larval descriptions: *Dorippe frascone* by Quintana (1987) and *Medorippe lanata* by Paula (1991).

Coxal endite of maxillule with 6 setae; coxal endite of maxilla with 3 setae; basial endite of maxilla bilobed with 5+5 setae *Dorippe frascone*

Coxal endite of maxillule with 5 setae; coxal endite of maxilla with 2 setae; basial endite of maxilla bilobed with 4+4 setae *Medorippe lanata*

Eriphiidae

The family Eriphiidae has three species in the WIO region, all belonging to *Eriphia* genus, *E. scabricula*, *E. sebana* and *E. smithii*. These species are intertidal and associated with reefs or rocky substrates. The zoeae of this family present dorsal and rostral carapace spines of approximately the same length, lateral carapace spine present and furcated telson with lateral and dorsal spines on each rami. All three species have larval descriptions: *Eriphia scabricula* by Clark and Paula (2003), *E. sebana* and *E. smithii* by Ko (2005).

1.Ventral margin of carapace without tubercles and setae *Eriphia scabricula*
Ventral margin of carapace with 2 small tubercles posteriorly and without setae 2

2. Antennal exopod with 3 terminal simple setae *Eriphia sebana*
Antennal exopod with 4 terminal simple setae *Eriphia smithii*

Menippidae

The family Menippidae has three species in the WIO region, *Menippe rumphii*, *Myomenippe fornasinii* and *Sphaerozius nitidus*. This family occupies several habitats: benthic, demersal, some species are reef-associated, others prefer muddy or rocky substrates and has a depth range from 0 to 800 meters. The zoeae of this family present an antennal exopod shorter than the protopod, with terminal setae and spines, the furcated telson presents lateral spines and only the second pleonite has dorsolateral processes. Of the three species identified, two have larval descriptions: *Sphaerozius nitidus* by Ko (2005) and *Menippe rumphii* by Clark (in press).

Ventral margin of carapace without setae; antennal exopod with one long terminal seta *Menippe rumphii*
Ventral margin of carapace with 2 small tubercules posteriorly; antennal exopod with two terminal simple setae *Sphaerozius nitidus*

Oziidae

The family Oziidae has four species in the WIO region, distributed by 3 genera, *Epixanthus dentatus*, *E, frontalis*, *Lydia annulipes* and *Ozius rugulosus.* This family has a varied habitat range, from demersal species to brackish and reef-associated species, within a depth range of 0 to 6 meters. The zoeae of this family present a ventrally curved rostral spine with pointed spinules along anterior half, furcated telson with 2 outer spines and ventral spines absent on furcal rami and maxilla endopod with 3+5 setae. Of the four species identified, all have larval descriptions: *Lydia annulipes*, *Epixanthus dentatus* by Clark and Paula (2003), *E. frontalis* by Clark

and Paula (2003) and by Al-Aidaroos *et al*. (2014), and *Ozius rugulosus* by Kakati and Nayak (1977).

1. Basial endite of maxillule with 7 setal processes *Epixanthus dentatus*
Basial endite of maxillule with 5 setal processes 2

2. Coxal endite of maxilla bilobed with 7+4 setae *Lydia annulipes*
Coxal endite of maxilla bilobed with 5+4 setae 3

3. Exopod of antennule with 2 aesthetascs and 1 seta *Ozius rugulosous*
Exopod of antennule with 5 aesthetascs and 1 seta *Epixanthus frontalis*

Goneplacidae

The family Goneplacidae has nine species in the WIO region distributed in six genera, *Carcinoplax ischurodous*, *C. longimanus*, *Entricoplax vestita*, *Goneplax clevai*, *G. rhomboides*, *Ommatocarcinus pulcher*, *Psopheticus crosnieri*, *P. stirdulans* and *Pycnoplax coryphaea*. This family is mostly benthic and demersal in depths ranging from 3 to 800 meters. The zoeae of this family present a well developed antennal exopod, similar in size or longer than protopod, telson furca armed with dorsal and lateral spines, and posterolateral processes on pleonites 2 to 5. Of the nine species identified only two have larval descriptions: *Carcinoplax longimanus* by Terada (1984) and *Goneplax rhomboides* by Ingle and Clark (1983).

Coxal endite of maxillule with 7 setae; coxal endite of maxilla bilobed with 1+3 setae *Carcinoplax longimanus*

Coxal endite of maxillule with 6 setae; coxal endite of maxilla bilobed with 4+4 setae *Goneplax rhomboides*

Hexapodidae

The family Hexapodidae has two species in the WIO region, *Hexapus stebbing* and *Spirolax spiralis*. This family is benthic with a depth range from 0 meters to 50 meters. The zoeae of this family present a well developed antennal exopod, similar in size or longer than protopod, and dorsolateral processes only on the second pleonite. Of the 2 species identified, only 1 has larval descriptions: *Spirolax spiralis* by Pereyra Lago (1988).

Leucosiidae

The family Leucosiidae has 28 species in the WIO region belonging to three subfamilies, Cryptocneminae, Ebaliinae and Leucosiinae. The Cryptocneminae subfamily is represented by two species, *Cryptocnemus holdsworthi* and *Leucisca squalina*; the Ebaliinae subfamily is represented by 24 species distributed in 13 genera, *Afrophila punctata*, *Arcania cornuta*, *A. septemspinosa*, *A. undecimspinosa*, *Ebalia agglomus*, *E. barnardi*, *E. glomus*, *E. pondoensis*, *E. tuberculata*, *E. tuberculosa*, *Heternonucia angulata*, *Hiplyra michellinae*, *H. platycheir*, *Lithadia barnardi*, *Lyphira matalensis*, *Myra fugax*, *M. subgranula*, *Nucia speciosa*, *Nursilia dentata*, *Philyra globus*, *P. samia*, *P. scabriuscula*, *Ryphila cancellus* and *Tanaoa pustulosus*; the Leucosiinae subfamily is represented by two species, *Soceulia marmorea* and *Urnalana whitei*. This family occupies a varied range of habitats, from reef-associated species to demersal and benthic species, with a depth range of 1 to 420 meters. The zoeae of this family present a non-furcated telson and the antennal exopod is absent. Of the 28 species identified only six have larval descriptions and all belong to the Ebaliinae subfamily: *Arcania septemspinosa, A. undecimspinosa*, *Hiplyra platycheir*, *Myra fugax* by Ko (2000), *Philyra globus* by Krishnan and Kannupandi (1990b) and *P. scabriuscula* by Rajabai (1960).

1. Carapace without dorsal spine 2
Carapace with dorsal spine 3

2. Basis of first maxilliped with 8 setae, arranged 2,2,2,2 *Hiplyra platycheir*
Basis of first maxilliped with 10 setae, arranged 2,2,3,3 *Philyra globus*

3. Coxal endite of maxillule with 5 setae 4
Coxal endite of maxillule with 6 setae 5

4. Endopod of maxillule 2-segmented with 2+2 setae *Arcania septemspinosa*
Endopod of maxillule 2-segmented with 0+4 setae *Myra fugax*

5. Endopod of first maxilliped 5-segmented with 2,2,1,2,5 setae *Arcania undecimspinosa*

Endopod of first maxilliped 5-segmented with 4,0,1,0,3 setae *Philyra scabriuscula*

Epialtidae

The family Epialtide has 22 species in the WIO region distributed in 13 genera, belonging to 3 subfamilies, Epialtinae, Pisinae and Tychinae. In the subfamily Epialtinae are 11 species distributed in 6 genera, *Acanthonyx dentatus*, *A. quadridentatus*, *A. scutellatus*,

A. undulatus, *Antilibinia smithii*, *Huenia heraldica*, *Menaethiops delagoae*, *M. fascicularis*, *M. natalensis*, *Menaethius monoceros* and *Xenocarcinus tuberculatus*; in the subfamily Pisinae are 10 species distributed by six genera, *Cyphocarcinus capreolus*, *Doclea muricata*, *Hyastenus convexus*, *H. diacanthus*, *H. spinosus*, *H. uncifer*, *Naxioides hirtus*, *Rochinia natalensis*, *R. pulchra* and *Tiarinia cornigera*; the subfamily Tychinae in the WIO area is only represented by one species, *Stilbognathus cervicornis*. This family occupies a wide range of habitats: subfamily Epialtinae mostly intertidal reaching depths of 290 meters; subfamily Pisinae intertidal, subtidal, with a depth range of 23 meters to 636 meters; subfamily Tychinae reaching depths of 62 meters. The zoeae of this family only present two zoeal stages (as do all species belonging to the superfamily Majoidea), the antennal exopod is similar in size or longer than protopod and endopod of second maxilliped three-segmented with 1,1,4/6 setae. Of the 22 species identified only three have larval descriptions: *Huenia heraldica*, *Menaethius monoceros* by Colavite *et al*. (2014) and *Doclea muricata* by Krishnan and Kannupandi (1987).

1. Carapace with dorsal spine *Doclea muricata*
   Carapace without dorsal spine 2

2. Endopod of first maxilliped 5-segmented with 3,2,1,2,4 setae *Menaethius monoceros*
   Endopod of first maxilliped 5-segmented with 3,2,1,2,5 setae *Huenia heraldica*

Inachidae

The family Inachidae has 22 species in the WIO region, distributed in 12 genera, *Achaeopsis spinulosa*, *Achaeus barnardi*, *A. curvirostris*, *A. lacertosus*, *A. laevioculis*, *A. spinossisimus*, *Camposcia retusa*, *Chorinachus dolichorhynchus*, *Cyrtomaia murrayi*, *Dorhynchus thomsoni*, *Inachus dorsettensis*, *I.guentheri*, *Macropodia falcifera*, *M. formosa*, *M. intermedia*, *M. rostrata*, *Oncinopus neptunus*, *Paratymolus barnardi*, *P. pubescens*, *Platymaia alcocki*, *P. turbynei* and *Sunipea indicus*. It has to be taken into account that recent research suggests that the genera *Cyrtomaia* and *Platymaia* could actually belong to the Oregoniidae family (Marco-Herrero *et al.*, 2013). This family is found in benthic habitats, mostly in the 0 to 200 meter range, although *Dorhynchus thomsoni* has been found at 2080 meters (Rice and Hartnoll, 1983). The zoeae of this family only present two zoeal stages (as do all species belonging to the superfamily Majoidea), the antennal exopod is similar in size or longer than protopod and endopod of second maxilliped three-segmented with 0,1,4 setae. Of the 22 species identified only three have larval descriptions: *Dorhynchus thomsoni* by Williamson (1982), *Inachus dorsettensis* by Lebour (1927) and by Ingle (1977), and *Macropodia rostrata* by Ingle (1982).

1. Endopod of first maxilliped 5-segmented with 3,2,1,2,3 setae *Dorhynchus thomsoni*
   Endopod of first maxilliped 5-segmented with 3,2,1,2,5 setae 2

2. Distal segment of endopod of maxillule with 4 setae; basis of second maxilliped without setae *Inachus dorsettensis*
   Distal segment of endopod of maxillule with 3 setae; basis of second maxilliped with 1 seta *Macropodia rostrata*

Majidae

The family Majidae has 12 species in the WIO region, distributed in nine genera, *Choniognathus elegans*, *Entomonyx soinosus*, *Eurynome aspera*, *Maja cornuta*, *M. squinado*, *Majella brevipes*, *Micippa philyra*, *M. thalia*, *Prismatopus longispinus*, *P. tosaensis*, *Sakaija africana* and *Schizophrys aspera*. This family occupies various habitats, such as benthic, demersal and reefs. The zoeae of this family only present two zoeal stages (as do all species belonging to the superfamily Majoidea), anterior seta on inner lateral margin of carapace. Of the 12 species identified five have larval descriptions: *Eurynome aspera* by Salman (1982), *Maja squinado* by Lebour (1927) and by Guerao *et al.* (2008), *Micippa philyra* by Ko (1995b), *M. thalia* by Gore *et al*. (1982), and *Schizophrys aspera* by Ghory (2012).

(Genera *Micippa* and *Schizophrys*)

1. Antennule with 6 aesthetascs and 1 seta *Schizophrys aspera*
   Antennule with 3 aesthetascs and 1 seta 2

2. Antennal spinous process slightly longer than exopod *Micippa philyra*
   Antennal spinous process slightly shorter than exopod *Micippa thalia*

(Genera *Eurynome* and *Maja*)

1. Lateral spines of carapace absent; basis of first maxilliped with 10 setae, arranged 2,2,3,3 *Eurynome aspera*
   Lateral spines of carapace present; basis of first maxilliped with 9 setae, arranged 2,2,2,3 *Maja squinado*

Pilumnidae

The family Pilumnidae has 14 species in the WIO region belonging to three subfamilies, Eumodoninae, Pilumninae and Xenophthalmodinae. The Eumodoninae subfamily is represented by two species, *Eumedonus niger* and *Gonatonotus granulosus*; the Pilumninae subfamily is represented by nine species distributed in five genera, *Actumnus setifer*, *Benthopanope indica*, *Eurycarcinus natalensis*, *Pilumnus dofleini*, *P. longicornis*, *P. minutus*, *P trichophoroides*, *P. vespertilio* and *Serenepilumnus pisifer*; the Xenophthalmodinae subfamily is represented by three species belonging to the genus *Xerophthalmodes*, *Xerophthalmodes brachyphallus*, *X. dolichophallus* and *X. moebii*. This family includes demersal, benthic and reef-associated species and occurs within a depth range of 0 meters to 33 meters. The zoeae of this family present a well developod antennal exopod, similar in size or longer than protopod, a furcated telson armed with dorsal and lateral spines and dorsolateral processes on pleonites 2 and 3. Of the 14 species identified only six have larval descriptions, all belonging to the Pilumninae subfamily: *Actumnus setifer* by Clark and Ng (2004), *Benthopanope indica* by Ko (1995a), *Eurycarcinus natalensis*, *Pilumnus longicornis* by Clark and Paula (2003), *P. minutus* by Ko (1994), and *P. vespertilio* by Lim and Tan (1979) and by Clark and Paula (2003).

1. Antennule with 3 aesthetascs 2
   Antennule with 4 aesthetascs 3

2. Right molar process of mandible with 5 teeth *Benthopanope indica*
   Right molar process of mandible with 4 teeth *Pilumnus minutus*

3. Dorsal carapace spine slightly longer than rostral spine *Pilumnus longicornis*
   Dorsal carapace spine at least 2 times longer than rostral spine 4

4. Dorsal carapace spine 2 times longer than rostral spine *Actumnus setifer*
   Dorsal carapace spine 3 times longer than rostral spine 5

5. Third maxilliped present and biramous *Pilumnus vespertilio*
   Third maxilliped absent *Eurycarcinus natalensis*

Ovalipidae

The family Ovalipidae has three species in the WIO region, *Ovalipes iridescens*, *O. punctatus* and *O. trimaculata*. This family is benthic and occurs within the 0 meters to 50 meters depth range, although some species occur at 580 meters. As part of the Portunoidea superfamily these species are commonly known as swimming crabs. The zoeae of this family present a furcated telson with dorsal and lateral spines on furcal rami, the basis of first maxilliped with 10 setae and maxilla endopod bilobed with 3+4 setae. Of the three species, one has a larval description: *Ovalipes trimaculata* by Schoeman and Cockcroft (1996).

Portunidae

The family Portunidae has 38 species in the WIO region distributed in six subfamilies, Caphyrinae, Carupinae, Lupocyclinae, Podophthalminae, Portuninae and Thalamitinae. The Caphyrimae subfamily is represented by five species distributed in three genera, *Caphyra alata*, *C. unidentata*, *Coelocarcinus foliatus*, *Lissocarcinus laevis* and *L. orbicularis*; the Carupinae subfamily is represented by one species, *Carupa tenuipes*; the Lupocyclinae subfamily is represented by one species, *Lupocyclus tugelae*; the Podophthalminae subfamily is represented by one species, *Podophthalmus vigil*; the Portuninae subfamily is represented by 10 species distributed in four genera, *Carupella natalensis*, *Cycloachelous granulatus*, *C. orbicularis*, *Portunus argentatus*, *P. gladiator*, *P. hastatoides*, *P. pelagicus*, *P. sanguinolentus*, *P. segnis* and *Scylla serrata;* the Thalamitinae subfamily is represented by 20 species distributed in two genera, *Charybdis africana*, *C. annulata*, *C. feriata*, *C. hellerii*, *C. natator*, *C. orientalis*, *C. smithii*, *C. variegata*, *Thalamita admete*, *T. bevisi*, *T. bouvieri*, *T.crenata*, *T. danae*, *T. delagoae*, *T. helleri*, *T. integra integra*, *T. picta*, *T. prymna*, *T. sima* and *T. woodmasoni*. This family is benthic and is found on sandy or muddy substrates, as long as some rocks are nearby for shelter, these crabs are mostly found in the intertidal zone within the depth range of 0 - 70 m (although some species have been found at depths of 400m). As part of the Portunoidea superfamily these species are commonly known as swimming crabs. The zoeae of this family present a furcated telson with dorsal and lateral spines on furcal rami, the basis of first maxilliped with 10 setae and maxilla endopod bilobed with 2+4 setae. Of the 38 species identified, 11 have larval descriptions: *Portunus pelagicus* by Shinkarenko (1979) and by Josileen and Menon (2004), *P. sanguinolentus*, *Scylla serrata* by Naidu (1955), *Charybdis annulata*, *C. natator*, *C. orientalis*, *C. variegata* by Islam *et al.* (2000), *C. feriata* by Motoh and Villaluz (1976) and by Fielder *et al.* (1984), *C. hellerii* by Dineen *et al.* (2001), *Thalamita crenata* by Krishnan and Kannupandi (1990a), and *T. danae* by Krishnan and Kunnapandi (1988b).

1. Basial endite of maxillule with 4 setae *Thalamita crenata*
   Basial endite of maxillule with *5* or more setae 2

2. Exopod of antennule with *5* aesthetascs *Thalamita danae*
   Exopod of antennule with 2 or 3 aesthetascs 3

3. Exopod of antennule with 2 aesthetascs 4
   Exopod of antennule with 3 aesthetascs 6

4. Basis of first maxilliped with 4 setae *Scylla serrata*
   Basis of first maxilliped with 8 or 10 setae *5*

5. Basis of first maxilliped with 8 setae *Portunus sanguinolentus*
   Basis of first maxilliped with 10 setae *Charybdis helleri*

6. Coxal endite of maxilla bilobed with 3+3 setae 7
   Coxal endite of maxilla bilobed with 2+3 setae 9

7. Endopod of second maxilliped 4-segmented *Portunus pelagicus*
   Endopod of second maxilliped 3-segmented 8

8. Basis of first maxilliped with 10 setae *Charybdis variegata*
   Basis of first maxilliped with 12 setae *Charybdis orientalis*

9. Endopod of second maxilliped with 1,1,5 setae *Charybdis annulata*
   Endopod of second maxilliped with 1,1,4 setae 10

10. Basial endite of maxilla bilobed with *5*+4 setae *Charybdis natator*
    Basial endite of maxilla bilobed with 4+4 setae *Charybdis feriata*

Tetraliidae

The family Tetraliidae has four species in the WIO region distributed in two genera, *Tetralia cinctipes*, *T. glaberrima*, *T. rubridactyla* and *Tetraloides nigrifrons*. This family consists of reef-associated species, all members of this family are obligate associates of cnidarians (Castro, 1997), giving them the common designation of coral crabs. The zoeae of this family present a furcated telson with dorsal and lateral spines on furcal rami, the basis of first maxilliped with 10 setae and maxilla endopod bilobed with 2+3 setae. Of the four species identified two have larval descriptions: *Tetralia glaberrima* by Clark and Galil (1988) and *T. rubridactyla* by Clark and Ng (2006).

Endopod of first maxilliped *5*-segmented with 2,2,1,2,*5* *Tetralia glaberrima*

Endopod of first maxilliped *5*-segmented with 3,2,1,2,*5* *Tetralia rubridactyla*

Trapeziidae

The family Trapeziidae has 12 species in the WIO region distributed in two genera, *Quadrella boopsis*, *Q. coronata*, *Q. maculosa*, *Q. serenei*, *Trapezia bidentata*, *T. cymodoce*, *T. digitalis*, *T. guttata*, *T. lutea*, *T. richtersi*, *T. rufopunctata* and *T. speciosa*. This family consists of reef-associated species, and like the Tetraliidae all members of this family are obligate associates of cnidarians (Castro, 1997), giving them the common designation of coral crabs. The adults are more often identified by the colour patterns than by morphological characters (Castro, 1997). The zoeae of this family present an antennal exopod shorter than protopod and a middorsal process on pleonite 1. Of the 12 species identified six have larval descriptions: *Quadrella maculosa*, *Q. serenei*, *Trapezia richtersi* by Clark and Ng (2006), *T. bidentata*, *T. digitalis* by Al-Aidaroos (1992), and *T. cymodoce* by Clark and Galil (1988).

1. Ventral margin of carapace without denticles or setae 2
   Ventral margin of carapace with minute denticles and without setae 4

2. Dorsal spine of carapace spinulate *Quadrella maculosa*
   Dorsal spine of carapace not spinulate 3

3. Carapace with one pair of lateral spines; maxillule endopod 2-segmented with 1+*5* setae; coxa of first maxilliped with one seta *Trapezia richtersi*
   Carapace with 2 pairs of lateral spines; maxillule endopod 2-segmented with 1+6 setae; coxa of first maxilliped without setae *Quadrella serenei*

4. Antennule with 4 aesthetascs *Trapezia cymodoce*
   Antennule with *5* aesthetascs *5*

5. Prong of telson about twice of length of lateral spine; 3 pairs of inner setae, outer most about 3/4 length of prong *Trapezia bidentata*
   Prong of telson less than twice of length of

lateral spine; 3 pairs of inner setae, outer most about as long as prong *Trapezia digitalis*

Panopeidae

The family Panopeidae has one species in the WIO region, *Panopeus africanus*. This family, commonly known as mud crabs, is benthic and usually occurs in muddy substrates, reaching depths of 20 meters. The zoeae of this family present a furcated telson armed with dorsal, ventral and lateral spines and dorsolateral processes on pleonites 2 and 3. The larvae of *P. africanus* have been described by Rodríguez and Paula (1993).

Xanthidae

The family Xanthidae has 66 species in the WIO region distributed by 11 subfamilies, Actaeinae, Banareiinae, Chlorodiellinae, Cymoinae, Etisinae, Euxanthinae, Kraussiinae, Liomerinae, Polydectinae, Xanthinae and Zosiminae. The Actaeinae subfamily is represented by 13 species distributed in 8 genera, *Actaea polyacantha*, *A. savignii*, *A. spinosissima*, *Actaeodes hirsutissimus*, *A. tomentosus*, *Epiactaea nodulosa*, *Forestiana depressa*, *Gaillardiellus rueppelli*, *Paractaea rebieri*, *P. rufopunctata*, *Psaumis cavipes*, *Pseudoliomera speciosa* and *P. variolosa*; the Banareiinae subfamily is represented by one species, *Banareia parvula*; the Chlorodiellinae subfamily is represented by nine species distributed in five genera, *Chlorodiella laevissima*, *C. nigra*, *Cyclodius obscurus*, *C. ungulatus*, *Luniella pugil*, *Phymodius ungulatus*, *Pilodius areolatus*, *P. melanospinis* and *P. pilumnoides*; the Cymoinae subfamily is represented by three species, *Cymo andreossyi*, *C. melanodactylus* and *C. quadrilobatus*; the Etisinae subfamily is represented by three species, *Etisus anaglyptus*, *E. electra* and *E. laevimanus*. The Euxanthinae subfamily is represented by four species distributed in three genera, *Hypocolpus diverticulatus*, *Medaeops granulosus*, *M. neglectus* and *Monodaeus tuberculidens*; the Kraussiinae subfamily is represented by one species, *Kraussia rugulosa*; the Liomerinae subfamily is represented by eight species distributed in two genera, *Liomera bella*, *L. cinctimanus*, *L. monticulosa*, *L. rugata*, *L. stimpsonii*, *L. tristis*, *Neoliomera sabaea* and *N. themisto*; the Polydectinae subfamily is represented by three species, *Lybia leptochelis*, *L. plumosa* and *L. tessellata*; the Xanthinae subfamily is represented by nine species distributed in five genera, *Lachnopodus subacutus*, *Leptodius exaratus*, *L. sanguineus*, *Macromedaeus quinquedentatus*, *M. voeltzkowi*, *Neoxanthias impressus*, *Xanthias lamarckii*, *X. maculatus* and *X. punctatus*; the Zosiminae subfamily is represented by 12 species distributed in seven genera, *Atergatis floridus, A. granulatus*, *A. ocyroe*, *A. roseus*, *Atergatopsis obesa*, *A. signata*, *Lophozozymus dodone*, *Paratergatis longimanus*, *Platypodia granulosa*, *Zosimus aeneus*, *Zozymodes cavipes* and *Z. xanthoides*. Species belonging to this family are usually reef-associated species, reaching depths of 50 meters, although most are in the 0 meters to 10 meters range; these species are commonly referred to as mud crabs, pebble crabs or rubble crabs. The zoeae of this family present a furcated telson with dorsal and lateral spines on furcal rami, the basis of first maxilliped with 10 setae and maxilla endopod bilobed with 3+5 setae. Of the 66 species identified only 20 have larval descriptions: *Actaeodes hirsutissimus*, *A. tomentosus* by Clark and Al-Aidaroos (1996), *Epiactaea nodulosa, Psaumis cavipes* by Clark (in press), *Pseudoliomera speciosa* by Clark and Galil (1998), *Cymo andreossyi, C. quadrilobatus* by Al-Haj *et al.* (2017), *C. melanodactylus* by Al-Haj *et al.*(2017) and by Clark (in press), *Etisus anaglyptus* by Al-Haj and Al-Aidaroos (2017) and by Clark (in press), *E. electra* by Al-Haj and Al-Aidaroos (2017), *E. laevimanus* by Suzuki (1978), *Medaeops granulosus* by Clark (in press), *Liomera bella* by Yang and Ko (2005) and by Clark (in press), *L. cinctimanus* by Clark (in press), *Lybia plumosa* and *Zozymodes xanthoides* by Clark and Paula (2003), *Lachnopodus subacutus* by Clark (in press), *Leptodius exaratus* by Clark and Paula (2003) and by Al-Aidaroos *et al.* (2017), *L. sanguineus* by Clark (in press), and *Atergatis floridus* by Tanaka and Konishi (2001).

1. Rostral spine equal in length or longer than antennal protopod 2
   Rostral spine shorter than antennal protopod 9

2. Rostral spine equal in length to antennal protopod 3
   Rostral spine longer than antennal protopod 4

3. Endopod of second maxilliped 3-segmented with 1,1,5 setae *Medaeops granulosus*
   Endopod of second maxilliped 3-segmented with 1,1,6 setae *Pseudoliomera speciosa*

4. Basial endite of maxilla with 4+4 setae *Etisus laevimanus*
   Basial endite of maxilla with 5+4 setae 5

5. Coxal endite of maxillule with 8 setae *Epiactaea nodulosa*
   Coxal endite of maxillule with 7 setae 6

6. Antennule exopod with 3aesthetascs and 1 terminal seta *Atergatis floridus*

Antennule exopod with 4 aesthetascs and 1 terminal seta 7

7. Endopod of second maxilliped 3-segmented with 1,1,5 setae *Leptodius exaratus*
   Endopod of second maxilliped 3-segmented with 1,1,6 setae 8

8. Dorsal spine twice as long as rostral spine *Psaumis cavipes*
   Dorsal spine equal in length as rostral spine *Zozymodes xanthoides*

9. Antennal exopod with 1 terminal seta 10
   Antennal exopod with 3 terminal setae 13

10. Antennule exopod with 3 terminal aesthetascs and 2 terminal setae *Actaeodes hirsutissimus*
    Antennule exopod with 4 terminal aesthetascs and 1 terminal seta 11

11. Endopod of second maxilliped 3-segmented with 1,1,6 setae *Etisus anaglyptus*
    Endopod of second maxilliped 3-segmented with 1,1,5 setae 12

12. Antennule exopod with 4 broad and long aesthetascs; antennal exopod ca. 6% length of protopod *Etisus electra*
    Antennule exopod with 2 broad and 2 slender aesthetascs; antennal exopod ca. 14% length of protopod *Leptodius sanguineus*

13. Endopod of second maxilliped 3-segmented with 1,1,5 setae 14
    Endopod of second maxilliped 3-segmented with 1,1,6 setae 16

14. Maxilla endopod bilobed with 2+5 setae *Lachnopodus subacutus*
    Maxilla endopod bilobed with 3+5 setae 15

15. Basial endite of maxillule with 5 setae *Lybia plumosa*
    Basial endite of maxillule with 6 setae *Cymo andreossyi*

16. Antennule exopod with 3 terminal aesthetascs and 3 setae *Actaeodes tomentosus*
    Antunnule exopod with 4 terminal aesthetascs and 1 seta 17

17. Lateral carapace spines short and spinulated 18
    Lateral carapace spines short and not spinulated 19

18. Antennal exopod ca. 24% of protopod/somites 2-5 with short posterolateral spinous processes *Cymo quadrilobatus*
    Antennal exopod ca. 13% of protopod/somites 3-5 with short posterolateral spinous processes *Cymo melanodactylus*

19. Dorsal spine spinulate; antennal exopod ca. 13% of protopod *Liomera bella*
    Dorsal spine not spinulate; antennal exopod ca. 11.2% of protopod *Liomera cinctimanus*

Cryptochiridae

The family Cryptochiridae has two species in the WIO region, *Cryptochirus coralliodytes* and *Hapalocarcinus marsupialis*. This family is reef-associated, living in shallow waters and forms associations with stony corals, causing the formation of galls in the coral structure, earning the common name of gall crabs or coral gall crabs (Johnsson *et al.*, 2006). The zoeae of this family present pleonal lateral expansions on pleonite 4 and a furcated telson armed with lateral spines. Of the two species, one has a larval description: *Hapalocarcinus marsupialis* by Gore *et al*. (1983).

Gecarcinidae

The family Gecarcinidae has one species in the WIO region, *Cardisoma carnifex*. This family, known as land crabs, is terrestrial with spawning and larval development occuring in marine habitats. The zoeae of this family present an antennal exopod shorter than protopod, lateral carapace spines and maxillule endopod with 1+5 setae. The larvae of *C. carnifex* has been described by Flores *et al*. (2003).

Grapsidae

The family Grapsidae has 10 species in the WIO region distributed in five genera, *Geograpsus stormi*, *Grapsus fourmanoiri*, *G. tenuicrustatus*, *Metopograpsus messor*, *M. thukuhar*, *Pachygrapsus minutus*, *P. plicatus*, *Planes major*, *P. marinus* and *P. minutus*. This family is mostly reef-associated, reaching depths of 10 meters (most common range 0-6 meters). The zoeae of this family present a rectangular telson and a maxilla endopod with 2+2 setae. Of the 10 species identified seven have larval descriptions: *Grapsus fourmanoiri*, *G. tenuicrustatus*, *Metopograpsus messor*, *Pachygrapsus minutus*, *P. plicatus* by Flores *et al*. (2003), *Planes marinus* by Wear (1970), and *P. minutus* by Cuesta *et al*. (1997).

1. Antennal exopod absent *Metopograpsus* spp
   Antennal exopod present but reduced 2

2. Dorsal carapace spine long *Planes marinus*
   Dorsal carapace spine short 3

3. Lateral carapace spines minute and as small hooked projections *Planes minutus*
   Lateral carapace spines absent 4

4. Coxal endite of maxilla bilobed with 4+5 setae *5*
   Coxal endite of maxilla bilobed with 5+4 setae 6

5. Telson with 2 lateral pairs of spines, the posterior one smaller *Grapsus fourmanoiri*
   Telson with 2 lateral pairs of spines, the posterior one larger *Grapsus tenuicrustatus*

6. Telson with 2 posterolateral pairs of spines of similar size *Pachygrapsus minutus*
   Telson with 2 posterolateral pairs of spines, the posterior one larger *Pachygrapsus plicatus*

Plagusiidae

The family Plagusiidae has five species in the WIO region distributed in 4 genera, *Euchirograpsus polyodous*, *Guinusia chabrus*, *Miersiograpsus kingsleyi*, *Plagusia depressa* and *P. squamosa*. This family occupies mostly intertidal and subtidal habitats. The zoeae of this family present a furcated telson armed with lateral spines and the basis of the first maxilliped with 8 setae. Of the 5 species identified 2 have larval description: *Guinusia chabrus* by Schubart and Cuesta (2010), and *Plagusia depressa* by Wilson and Gore (1980).

Basis of first maxilliped with 8 setae, arranged 2,2,2,2; antennal exopod less than 1/4 length of protopod *Plagusia depressa*

Basis of first maxilliped with 10 setae, arranged 2,2,3,3 antennal exopod less than 1/6 length of protopod *Guinusia chabrus*

Sesarmidae

The family Sesarmidae has 13 species in the WIO region distributed in seven genera, *Chiromantes eulimene*, *C. ortmanni*, *Neosarmatium africanum*, *N. meinerti*, *N. smithi*, *Parasesarma catenatum*, *P. leptosoma*, *P. plicatum*, *Perisesarma guttatum*, *P. samawati*, *Sarmatium crassum*, *Selatium elongatum* and *Sesarmoides longipes*. This family consists of semi-terrestrial and tree-climbing species (some genera like *Sesarma*, *Metopaulias* and *Geosesarma* are true terrestrial crabs and do not need to return to the sea for spawning (Schubart *et al*., 2003)) and can be found mainly in mangroves. The zoeae of this family present an antennal exopod shorter than protopod, lateral carapace spines are absent and maxillule endopod with 1+5 setae. Of the 13 species identified eight have larval descriptions: *Chiromantes eulimene* by Pereyra Lago (1993b), by Flores *et al*. (2003) and by Guerao *et al.* (2011), *C. ortmanni* by Guerao *et al.* (2012), *Neosarmatium meinerti* by Pereyra Lago (1989) and by Flores *et al*. (2003), *Parasesarma catenatum* by Pereyra Lago (1987) and by Flores *et al*. (2003), *P. plicatum* by Selvakumar (1999), *P. leptosoma*, *Sarmatium crassum* by Flores *et al*. (2003), and *Perisesarma guttatum* by Pereyra Lago (1993a).

1. Antennal exopod with 4 or more setae 2
   Antennal exopod with 3 or less setae 4

2. Antennal exopod with 5 setae *Parasesarma leptosoma*
   Antennal exopod with 4 setae 3

3. Antennule with 3 unequal terminal aesthetascs *Sarmatium crassum*
   Antennule with 5 terminal aesthetascs *Chiromantes ortmanni*

4. Antennule with 3 aesthetascs *5*
   Antennule with 4 aesthetascs 6

5. Coxal endite of maxillule with 6 setae; basis of first maxilliped with 8 setae *Parasesarma catenatum*
   Coxal endite of maxillule with 5 setae; basis of first maxilliped with 10 setae *Parasesarma plicatum*

6. Antennal exopod with 2 setae *Perisesarma guttatum*
   Antennal exopod with 3 setae 7

7. Coxal endite of maxillule with 5 setae *Neosarmatium meinerti*
   Coxal endite of maxillule with 6 setae *Chiromantes eulimene*

Varunidae

The family Varunidae has seven species in the WIO region distributed in three subfamilies, Cyclograpsinae, Gaeticinae and Varuninae. The Cyclograpsinae is represented by three species, *Cyclograpsus*

punctatus, *Parahelice balssi* and *Pseudohelice subquadrata*; the Gaeticinae subfamily is represented by one species, *Brankocleistostoma fossulum*; the Varuninae subfamily is represented by three species, *Pseudograpsus elongatus*, *Ptychognathus onyx* and *Varuna litterata*. This family is predominantly found in the intertidal zone, on muddy or rocky substrates. The zoeae of this family present a furcated unarmed telson and an antennal exopod well developed, similar in size or longer than protopod. Of these seven species, one has a larval description: *Cyclograpsus punctatus* by Fagetti and Campodonico (1971).

Dotillidae

The family Dotillidae has two species in the WIO region, *Dotilla fenestrata* and *Lazarocleistostoma dentatum*. This family is found in the intertidal zone on sandy beaches; the genera *Dotilla* and *Scopimera* live in burrows where at high tides they trap air, forming bubbles that allow them to breathe, thus earning them the common name sand bubbler crabs. The zoeae of this family are very diverse and as such it is very difficult to determine defining characters. Of these 2 species, one has a larval description: *Dotilla fenestrata* by Paula *et al.* (in prep.).

Macrophthalmidae

The family Macrophthalmidae has eight species in the WIO region belonging to two subfamilies, Ilyograpsinae and Macrophthalminae. The Ilyograpsinae subfamily is represented by two species *Ilyograpsus paludicola* and *I. rhizophorae*; the Macrophthalminae subfamily is represented by six species distributed in 3 genera, *Chaenostoma boscii*, *C. sinuspersici*, *Macrophthalmus convexus*, *M. depressus*, *M. grandidieri* and *Venitus latreillei*. This family is benthic, reaching depths of 0 to 5 meters and prefers brackish habitats. The zoeae of this family present a furcated unarmed telson, a well developed antennal exopod, similar in size or longer than protopod and pleonal expansions on pleonite 5. Of the eight species identified five have larval descriptions: *Ilyograpsus paludicola* by Flores *et al*. (2003), *Chaenostoma boscii*, *Macrophthalmus depressus*, *M. grandidieri* by Paula *et al.* (in prep.) and *Venitus latreillei* by Selvakumar *et al*. (1988).

1. Dorsal carapace spine absent
   Ilyograpsus paludicola
   Dorsal carapace spine present 2

2. Lateral carapace spine present *Venitus latreillei*
   Lateral carapace spine absent 3

3. Denticles present in pleonite 4
   Macrophthalmus depressus
   Denticles present in pleonites 4 and 5 4

4. Dorsal carapace spine with half the length of carapace; posterolateral margin of carapace without teeth and slightly crenulated; antennal exopod with 1/3 length of protopod
   Chaenostoma boscii
   Dorsal carapace spine with 5/8 length of carapace; posterolateral margin of carapace with a small tooth and slightly crenulated; antennal exopod with 1/4 length of protopod
   Macrophthamus grandidieri

Ocypodidae

The family Ocypodidae has 11 species in the WIO region belonging to two subfamilies, Ocypodinae and Gelasiminae. The Ocypodinae subfamily is represented by four species belonging to the genus *Ocypode*, *Ocypode ceratophthalmus*, *O. cordimana*, *O. madagascariensis* and *O. rydery*; the Gelasiminae subfamily is represented by seven species distributed in five genera, *Astruca annulipes*, *Cranuca inversa*, *Gelasimus hesperiae, G. vocans, Paraleptuca chlorophthalmus*, *P. crassipes* and *Tubuca urvillei*. This family is semi-terrestrial and can be found in mangroves, salt marshes, sandy or muddy beaches, mostly in the intertidal zone. The zoeae of this family are very diverse and as such it is very difficult to determine defining characters. Of the 11 species identified six have larval descriptions: *Ocypode ceratophthalmus*, *O. cordimana* by Jiang *et al.* (2014), *Astruca annulipes*, *Gelasimus vocans*, *Paraleptuca chlorophthalmus* and *Tubuca urvillei* by Paula *et al.* (in prep.).

1. Lateral carapace spine present 2
   Lateral carapace spine absent 3

2. Pleonite 1 without rounded posterolateral processes *Ocypode cordimana*
   Pleonite 1 with rounded posterolateral processes
   Ocypode ceratophthalmus

3. Denticles absent on pleonites 4 and 5 4
   Denticles present on pleonites 4 and 5 5

4. Dorsal spine of carapace 1/3 length of carapace; rostral spine 1/3 bigger than antenna; telson forks with numerous small spines and denticles; basis of first maxilliped with 8 setae (1,2,3,2)
   Astruca annulipes

Dorsal spine of carapace 1/2 length of carapace; rostral spine twice the length of antenna; telson forks with numerous small spines and without denticles; basis of first maxilliped with 9 setae (2,2,3,2) *Tubuca urvillei*

5. Rostral spine with 1/4 length of antenna; dorsal spine of carapace with 1/3 length of carapace; mandible incisive process with 3 teeth projections and 1 subterminal tooth; basis of first maxilliped with 9 setae (2,2,3,2) *Gelasimus vocans*
   Rostral spine with 3/4 length of antenna; dorsal spine of carapace with 1/6 length of carapace; mandible incisive process with 5 teeth projections and 2 subterminal teeth; basis of first maxilliped with 10 setae (3,2,3,2) *Paraleptuca chlorophthalmus*

Hymenosomatidae

The family Hymenosomatidae has six species in WIO region, distributed in five genera, *Elamena mathoei*, *Halicarcinus planatus*, *Hymenosoma geometricum*, *H. orbiculare*, *Neorhynchoplax bovis* and *Trigonoplax unguiformis*. This family occupies a diverse range of habitats, from estuarine to subtidal reaching depths of 270 meters. The zoeae of this family present a reduced antennal exopod and an eloganted trapezoidal telson, wider anteriorly. Of the six species identified four have larval descriptions: *Elamena mathoei* by Krishnan and Kannupandi (1988a), *Halicarcinus planatus* by Boschi *et al.* (1969), *Hymenosoma orbiculare* and *Trigonoplax unguiformis* by Dornelas *et al.* (2003).

1. Dorsal carapace spine absent 2
   Dorsal carapace spine present 3

2. Basial endite of first maxilliped with 9 setae (2,2,2,3) *Halicarcinus planatus*
   Basial endite of first maxilliped with 10 setae (2,2,3,3) *Elamena mathoei*

3. Coxal endite of maxilla with 1 seta *Trigonoplax unguiformis*
   Coxal endite of maxilla with 2 setae *Hymenosoma orbiculare*

Discussion and conclusion

Four hundred and thirty species of Brachyuran crabs have been identified as inhabiting the WIO region, of which 125 (about 29%) have larval descriptions available. The most representative groups present in the WIO region are the families Xanthidae (66 species present), Portunidae (38 species present) and the Leucosiidae (28 species present). The species of some families present in the WIO region, such as Raninidae or Panopeidae, have larval descriptions available for only one of the species. For these families it was not possible to provide specific keys. The families Cyclodorippidae, Dairoididae, Acidopsidae, Chasmocarcinidae, Mathildellidae, Pseudoziidae, Retroplumidae and Trichopeltariidae are not included in the identification key of families because no larval description was found for these families, not allowing determining the diagnostic familial characteristics to be identified. In the case of the families Cymonomidae, Dynomenidae, Homolodromiidae, Latreillidae, Cancridae, Corystidae, Ethusidae, Palicidae, Oregoniidae, Parthenopidae, Carcinidae, Geryonidae, Polybiidae, Percnidae, Camptandriidae and Pinnotheridae there are larval descriptions available but not for species present in the WIO region.

Many challenges arose when developing the identification key for families. For example, separating the families Portunidae, Parthenopidae, Polybiidae, Aethridae, Ovalipidae, Xanthidae and Dairidae was particularly difficult and was only possible using the setation of segments of the first maxilliped and of the maxilla (Clark and Cuesta, 2015). Within the families there is also a high level of intraspecific similarity requiring the use of characters exposed through dissection to differentiate between species. This is a concern in families that have a high percentage of non-described species, as it increases the probability of mistaking a described species for a non-described one.

These keys should be used with caution as only 29% of the species that are present in the WIO region have larval descriptions and because only the first zoeal stage was considered, although most morphological characters used are, in general, conservative throughout the larval series. There is still much descriptive work required for these keys to become more complete as far as the diversity of the brachyuran fauna that inhabits the WIO area is concerned. Most of the species in this geographic area are either non-described or the descriptions available do not meet the standard description requirements defined by Clark *et al.* (1998).

Acknowledgements

The authors wish to thank Carlos Assis (University of Lisbon) for his comments on the structure of the identification keys, and to Paul Clark (The Natural History Museum, London) for providing unpublished larval descriptions.

Table 1. List of Brachyuran species present in the WIO with description references.

List of Brachyuran species in the Western Indian Ocean				
Family	**Subfamily**	**Species**	**Zoeal description**	**Description reference**
Cyclodorippidae	Cyclodorippinae	*Corycodus decorus* Tavares, 1993	No	
Cyclodorippidae	Cyclodorippinae	*Corycodus disjunctipes* (Stebbing, 1910)	No	
Cyclodorippidae	Cyclodorippinae	*Corycodus merweae* Tavares, 1993	No	
Cyclodorippidae	Xeinostomatinae	*Xeinostoma eucheir* Stebbing, 1920	No	
Cymonomidae		*Cymonomus mainbaza* Ahyong, 2014	No	
Cymonomidae		*Cymonomus trifurcus* Stebbing, 1920	No	
Cymonomidae		*Cymonomus valdivae* (Lankester, 1903)	No	
Dromiidae	Dromiinae	*Ascidiophilus caphyraeformis* Richters, 1880	No	
Dromiidae	Dromiinae	*Barnardromia bituberculata* (Stebbing, 1920)	No	
Dromiidae	Dromiinae	*Barnardromia hirsutimana* (Kensley & Buxton, 1984)	No	
Dromiidae	Dromiinae	*Conchoecetes artificiosus* (Fabricius, 1798)	Yes	McLay *et al.* (2001)
Dromiidae	Dromiinae	*Cryptodromia bullifera* (Alcock, 1900)	No	
Dromiidae	Dromiinae	*Cryptodromia fallax* (Latreille in Milberts, 1812)	No	
Dromiidae	Dromiinae	*Dromia dormia* (Linnaeus, 1763)	No	
Dromiidae	Dromiinae	*Dromidia aegibotus* Barnard, 1946	No	
Dromiidae	Dromiinae	*Dromidia cornuta* (Barnard, 1946)	No	
Dromiidae	Dromiinae	*Dromidia dissothrix* Barnard, 1946	No	
Dromiidae	Dromiinae	*Dromidia hirsutissima* Lamarck, 1818	No	
Dromiidae	Dromiinae	*Dromidia lepidota* (Barnard, 1946)	No	
Dromiidae	Dromiinae	*Eudromidia frontalis* (Henderson, 1888)	No	
Dromiidae	Dromiinae	*Eudromidia hendersoni* (Stebbing, 1921)	No	
Dromiidae	Dromiinae	*Exodromidia spinosa (Studer, 1883)*	No	
Dromiidae	Dromiinae	*Exodromidia spinosissima* (Kensley, 1977)	No	
Dromiidae	Dromiinae	*Hemisphaerodromia monodous* (Stebbing, 1918)	No	
Dromiidae	Dromiinae	*Lauridromia dehaani* (Rathbun, 1923)	Yes	McLay *et al.* (2001)

List of Brachyuran species in the Western Indian Ocean				
Family	**Subfamily**	**Species**	**Zoeal description**	**Description reference**
Dromiidae	Dromiinae	*Lauridromia intermedia* (Laurie, 1906)	No	
Dromiidae	Dromiinae	*Lewindromia unidentata* (Rüppell, 1830)	No	
Dromiidae	Dromiinae	*Metadromia wilsoni* (Fulton & Grant, 1902)	No	
Dromiidae	Dromiinae	*Platydromia spongiosa* (Stimpson, 1858)	No	
Dromiidae	Dromiinae	*Pseudodromia cacuminis* Kensley, 1980	No	
Dromiidae	Dromiinae	*Pseudodromia latens* Stimpson, 1858	No	
Dromiidae	Dromiinae	*Pseudodromia rotunda* (MacLeay, 1838)	No	
Dromiidae	Dromiinae	*Pseudodromia trepida* Kensley, 1978	No	
Dromiidae	Dromiinae	*Speodromia platyarthrodes* (Stebbing,1905)	No	
Dromiidae	Dromiinae	*Tumidodromia dormia* (Linnaeus,1763)	No	
Dynomenidae		*Dynomene pilumnoides* Alcock, 1900	No	
Homolodromiidae		*Homolodromia bouvieri* Doflein, 1904	No	
Homolidae		*Homola barbata* (Fabricius, 1793)	Yes	Rice & Provenzano (1970)
Homolidae		*Homola orientalis* Henderson, 1888	No	
Homolidae		*Homolochunia valdiviae* Doflein, 1904	No	
Homolidae		*Ihlopsis multispinosa* (Ihle, 1912)	No	
Homolidae		*Lamoha murotoensis* (Sakai, 1979)	No	
Homolidae		*Latreillopsis bispinosa* Henderson, 1888	No	
Homolidae		*Latreillopsis tetraspinosa* Dai & Chen, 1980	No	
Homolidae		*Moloha alcocki* (Stebbing, 1920)	No	
Homolidae		*Moloha alisae* Guinot & Richer de Forges, 1995	No	
Homolidae		*Paromola cuvieri* (Risso, 1816)	Yes	Samuelsen (1976)
Latreilliidae		*Eplumula phalangium* (De Haan, 1839)	No	
Latreilliidae		*Latreillia metanesa* Williams, 1982	No	

List of Brachyuran species in the Western Indian Ocean				
Family	**Subfamily**	**Species**	**Zoeal description**	**Description reference**
Latreilliidae		*Latreillia pennifera* Alcock, 1900	No	
Latreilliidae		*Latreillia valida* De Haan, 1839	No	
Raninidae	Lyreidinae	*Lyreidus brevifrons* Sakai, 1937	No	
Raninidae	Notopodinae	*Cosmonotus grayii* Adams in Belcher, 1848	No	
Raninidae	Notopodinae	*Notopus dorsipes* (Linnaeus, 1758)	No	
Raninidae	Raninidae	*Ranina ranina* (Linnaeus, 1758)	Yes	Sakai (1971)
Raninidae	Raninoidinae	*Raninoides barnardi* Sakai, 1974	No	
Aethridae		*Actaeomorpha erosa* Miers, 1877	No	
Aethridae		*Aethra scruposa* (Linnaeus, 1764)	No	
Aethridae		*Aethra seychellensis* Takeda, 1975	No	
Calappidae		*Calappa africana* Lai & Ng, 2006	No	
Calappidae		*Calappa gallus* (Herbst, 1803)	Yes	Taishaku & Konishi (1995)
Calappidae		*Calappa guerini* Brito Capello, 1871	No	
Calappidae		*Calappa hepatica* (Linnaeus, 1758)	No	
Calappidae		*Calappa japonica* Ortmann, 1892	Yes	Seridji (1993); Taishaku & Konishi (1995)
Calappidae		*Calappa lophos* (Herbst, 1782)	Yes	Taishaku & Konishi (1995)
Calappidae		*Calappa pustulosa* Alcock, 1896	No	
Calappidae		*Calappa woodmasoni* Alcock, 1896	No	
Calappidae		*Mursia africana* Galil, 1993	No	
Calappidae		*Mursia armata* de Haan, 1837	No	
Calappidae		*Mursia cristiata* H. Milne-Edwards, 1837	No	
Calappidae		*Mursia flamma* Galil, 1993	No	
Matutidae		*Ashtoret lunaris* (Forskål, 1775)	Yes	Seridji (1993); Taishaku & Konishi (1995)
Atelecyclidae		*Atelecyclus rotundatus* (Olivi, 1792)	Yes	Hong & Ingle (1987)
Cancridae		*Platepistoma seani* Davie & Ng, 2012	No	
Carpiliidae		*Carpilius convexus* (Forskål, 1775)	Yes	
Carpiliidae		*Carpilius maculatus* (Linnaeus, 1758)	Yes	Clark *et al.* (2005)

Corystidae		*Gomeza bicornis* Gray 1831	No	

List of Brachyuran species in the Western Indian Ocean

Family	Subfamily	Species	Zoeal description	Description reference
Dairidae		*Daira perlata* (Herbst, 1790)	No	
Dorippidae		*Dorippe frascone* (Herbst, 1785)	Yes	Quintana (1987)
Dorippidae		*Dorippe quadridens* (Fabricius, 1793)	No	
Dorippidae		*Dorippoides nudipes* Manning & Holthuis, 1986	No	
Dorippidae		*Medorippe lanata* (Linnaeus, 1767)	Yes	Paula (1991)
Ethusidae		*Ethusa machaera* Castro, 2005	No	
Ethusidae		*Ethusa sinespina* Kensley, 1969	No	
Ethusidae		*Ethusa zurstrasseni* Doflein, 1969	No	
Ethusidae		*Ethusina challengeri* (Miers, 1886)	No	
Ethusidae		*Ethusina longipes* Chen, 1987	No	
Ethusidae		*Ethusina somalica* (Doflein, 1904)	No	
Dairoididae		*Dairoides kusei* (Sakai, 1938)	No	
Dairoididae		*Dairoides margaritatus* Stebbing, 1920	No	
Eriphiidae		*Eriphia scabricula* Dana, 1852	Yes	Clark & Paula (2003)
Eriphiidae		*Eriphia sebana* (Shaw & Nodder, 1803)	Yes	Ko (2005)
Eriphiidae		*Eriphia smithii* MacLeay, 1838	Yes	Ko (2005)
Menippidae		*Menippe rumphii* (Fabricius, 1798)	No	
Menippidae		*Myomenippe fornasinii* (Bianconi, 1851)	No	
Menippidae		*Sphaerozius nitidus* Stimpson, 1858	Yes	Ko (2005)
Oziidae		*Epixanthus dentatus* (White, 1848)	Yes	Clark & Paula (2003)
Oziidae		*Epixanthus frontalis* (H.Milne-Edwards, 1834)	Yes	Al-Aidaroos, Al-Haj & Kumar (2014); Clark & Paula (2003)
Oziidae		*Lydia annulipes* (H. Milne-Edwards, 1834)	Yes	Clark & Paula (2003)
Oziidae		*Ozius rugulosus* Stimpson, 1858	Yes	Kakati & Nayak (1977)
Acidopsidae	Acidopsinae	*Parapilumnus pisifer* (MacLeay, 1838)	No	
Acidopsidae	Raouliinae	*Caecopilumnus piroculatus* (Rathburn, 1911)	No	
Chasmocarcinidae	Chasmocarcininae	*Camatopsis rubida* Alcock & Anderson, 1899	No	

List of Brachyuran species in the Western Indian Ocean				
Family	**Subfamily**	**Species**	**Zoeal description**	**Description reference**
Euryplacidae		*Eucrate sulcatifrons* (Stimpson, 1858)	No	
Goneplacidae	Goneplacinae	*Carcinoplax ischurodous* (Stebbing, 1923)	No	
Goneplacidae	Goneplacinae	*Carcinoplax longimanus* (de Haan, 1833)	Yes	Terada (1984)
Goneplacidae	Goneplacinae	*Entricoplax vestita* (de Haan, 1835)	No	
Goneplacidae	Goneplacinae	*Goneplax clevai* Guinot & Castro, 2007	No	
Goneplacidae	Goneplacinae	*Goneplax rhomboides* (Linnaeus, 1758)	Yes	Ingle & Clark (1983)
Goneplacidae	Goneplacinae	*Ommatocarcinus pulcher* Barnard, 1950	No	
Goneplacidae	Goneplacinae	*Psopheticus crosnieri* Guinot, 1990	No	
Goneplacidae	Goneplacinae	*Psopheticus stridulans* Wood-Mason, 1892	No	
Goneplacidae	Goneplacinae	*Pycnoplax coryphaea* Castro, 2012	No	
Mathildellidae		*Beuroisia duhameli* Guinot & Richer de Forges, 1981	No	
Mathildellidae		*Neopilumnoplax heterochir* (Studer, 1883)	No	
Hexapodidae		*Hexapus stebbingi* Barnard, 1947	No	
Hexapodidae		*Spiroplax spiralis* (Barnard, 1950)	Yes	Lago (1988)
Leucosiidae	Cryptocneminae	*Cryptocnemus holdsworthi* Miers, 1877	No	
Leucosiidae	Cryptocneminae	*Leucisca squalina* (MacLeay, 1838)	No	
Leucosiidae	Ebaliinae	*Afrophila punctata* (Bell, 1855)	No	
Leucosiidae	Ebaliinae	*Arcania cornuta* (MacGilchrist,1905)	No	
Leucosiidae	Ebaliinae	*Arcania septemspinosa* (Fabricius, 1787)	Yes	Ko (2000)
Leucosiidae	Ebaliinae	*Arcania undecimspinosa* de Haan, 1841	Yes	Ko (2000)
Leucosiidae	Ebaliinae	*Ebalia agglomus* Barnard, 1955	No	
Leucosiidae	Ebaliinae	*Ebalia barnardi* Stebbing, 1914	No	
Leucosiidae	Ebaliinae	*Ebalia glomus* Stebbing, 1921	No	
Leucosiidae	Ebaliinae	*Ebalia pondoensis* Barnard, 1955	No	
Leucosiidae	Ebaliinae	*Ebalia tuberculata* Miers, 1881	No	
Leucosiidae	Ebaliinae	*Ebalia tuberculosa* (A. Milne-Edwards, 1873)	No	

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Family	**Subfamily**	**Species**	**Zoeal description**	**Description reference**
Leucosiidae	Ebaliinae	*Heteronucia angulata* Barnard, 1946	No	
Leucosiidae	Ebaliinae	*Hiplyra michellinae* Galil, 2009	No	
Leucosiidae	Ebaliinae	*Hiplyra platycheir* (de Haan, 1841)	Yes	Ko (2000)
Leucosiidae	Ebaliinae	*Lithadia barnardi* Stebbing, 1920	No	
Leucosiidae	Ebaliinae	*Lyphira natalensis* Galil, 2009	No	
Leucosiidae	Ebaliinae	*Myra fugax* (Fabricius, 1798)	Yes	Ko (2000)
Leucosiidae	Ebaliinae	*Myra subgranulata* Kossman, 1877	No	
Leucosiidae	Ebaliinae	*Nucia speciosa* Dana, 1852	No	
Leucosiidae	Ebaliinae	*Nursilia dentata* Bell, 1855	No	
Leucosiidae	Ebaliinae	*Philyra globus* (Fabricius, 1775)	Yes	Krishnan & Kannupandi (1990)
Leucosiidae	Ebaliinae	*Philyra samia* Galil, 2009	No	
Leucosiidae	Ebaliinae	*Philyra scabriuscula* (Fabricius, 1798)	Yes	Rajabi (1960)
Leucosiidae	Ebaliinae	*Ryphila cancellus* Galil, 2009	No	
Leucosiidae	Ebaliinae	*Tanaoa pustulosus* (Wood-Mason in Wood-Mason & Alcock, 1891)	No	
Leucosiidae	Leucosiinae	*Soceulia marmorea* (Bell, 1855)	No	
Leucosiidae	Leucosiinae	*Urnalana whitei* (Bell, 1955)	No	
Epialtidae	Epialtinae	*Acanthonyx dentatus* H. Milne-Edwards, 1834	No	
Epialtidae	Epialtinae	*Acanthonyx quadridentatus* Krauss, 1843	No	
Epialtidae	Epialtinae	*Acanthonyx scutellatus* MacLeay, 1838	No	
Epialtidae	Epialtinae	*Acanthonyx undulatus* Barnard, 1947	No	
Epialtidae	Epialtinae	*Antilibinia smithii* MacLeay, 1838	No	
Epialtidae	Epialtinae	*Huenia heraldica* (de Haan, 1837)	Yes	Colavite *et al.* (2014)
Epialtidae	Epialtinae	*Menaethiops delagoae* Barnard, 1955	No	
Epialtidae	Epialtinae	*Menaethiops fascicularis* (Krauss, 1843)	No	
Epialtidae	Epialtinae	*Menaethiops natalensis* Barnard, 1955	No	
Epialtidae	Epialtinae	*Menaethius monoceros* (Latreille, 1825)	Yes	Colavite *et al.* (2014)
Epialtidae	Epialtinae	*Xenocarcinus tuberculatus* White, 1847	No	

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Family	**Subfamily**	**Species**	**Zoeal description**	**Description reference**
Epialtidae	Pisinae	*Cyphocarcinus capreolus* (Paul'son,1875)	No	
Epialtidae	Pisinae	*Doclea muricata* (Herbst, 1788)	Yes	Krishnan & Kannupandi (1987)
Epialtidae	Pisinae	*Hyastenus convexus* Miers, 1884	No	
Epialtidae	Pisinae	*Hyastenus diacanthus* (de Haan, 1839)	No	
Epialtidae	Pisinae	*Hyastenus spinosus* A. Milne-Edwards, 1872	No	
Epialtidae	Pisinae	*Hyastenus uncifer* Calman, 1900	No	
Epialtidae	Pisinae	*Naxioides hirtus* A. Milne-Edwards, 1865	No	
Epialtidae	Pisinae	*Rochinia natalensis* Kensley, 1977	No	
Epialtidae	Pisinae	*Rochinia pulchra* (Miers, 1886)	No	
Epialtidae	Pisinae	*Tiarinia cornigera* (Latreille, 1825)	No	
Epialtidae	Tychinae	*Stilbognathus cervicornis* (Herbst, 1803)	No	
Inachidae		*Achaeopsis spinulosa* Stimpson,1857	No	
Inachidae		*Achaeus barnardi* Griffin, 1968	No	
Inachidae		*Achaeus curvirostris* (A. Milne-Edwards, 1873)	No	
Inachidae		*Achaeus lacertosus* Stimpson, 1858	No	
Inachidae		*Achaeus laevioculis* Miers, 1884	No	
Inachidae		*Achaeus spinossisimus* Griffin, 1968	No	
Inachidae		*Camposcia retusa* (Latreille, 1829)	No	
Inachidae		*Chorinachus dolichorhynchus* (Alcock & Anderson, 1894)	No	
Inachidae		*Cyrtomaia murrayi* Miers, 1885	No	
Inachidae		*Dorhynchus thomsoni* Thomson, 1873	Yes	Williamson (1982)
Inachidae		*Inachus dorsettensis* (Pennant, 1777)	Yes	Lebour (1927); Ingle (1977)
Inachidae		*Inachus guentheri* (Miers, 1879)	No	
Inachidae		*Macropodia falcifera* (Stimpson, 1858)	No	
Inachidae		*Macropodia formosa* Rathbun, 1911	No	
Inachidae		*Macropodia intermedia* Bouvier, 1940	No	

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Family	**Subfamily**	**Species**	**Zoeal description**	**Description reference**
Inachidae		*Macropodia rostrata* (Linnaeus, 1761)	Yes	Ingle (1982)
Inachidae		*Oncinopus neptunus* Adams & White, 1848	No	
Inachidae		*Paratymolus barnardi* Loh & Ng, 1999	No	
Inachidae		*Paratymolus pubescens* Miers, 1879	No	
Inachidae		*Platymaia alcocki* Rathbun, 1918	No	
Inachidae		*Platymaia turbynei* Stebbing, 1902	No	
Inachidae		*Sunipea indicus* (Alcock, 1895)	No	
Majidae	Majinae	*Choniognathus elegans* (Stebbing, 1921)	No	
Majidae	Majinae	*Entomonyx spinosus* Miers, 1884	No	
Majidae	Majinae	*Eurynome aspera* (Pennant, 1777)	Yes	Salman (1982)
Majidae	Majinae	*Maja cornuta* (Linnaeus, 1758)	No	
Majidae	Majinae	*Maja squinado* (Herbst, 1788)	Yes	Lebour (1927); Guerao *et al*. (2008)
Majidae	Majinae	*Majella brevipes* Ortmann, 1893	No	
Majidae	Majinae	*Micippa philyra* (Herbst, 1803)	Yes	Ko (1995b)
Majidae	Majinae	*Micippa thalia* (Herbst, 1803)	Yes	Gore *et al*. (1982)
Majidae	Majinae	*Prismatopus longispinus* (de Haan, 1839)	No	
Majidae	Majinae	*Prismatopus tosaensis* (Sakai, 1969)	No	
Majidae	Majinae	*Sakaija africana* (Griffin & Tranter, 1986)	No	
Majidae	Majinae	*Schizophrys aspera* (H. Milne-Edwards, 1834)	Yes	Ghory (2012)
Oregoniidae	Pleistacanthinae	*Pleistacantha moseleyi* (Miers, 1886)	No	
Oregoniidae	Pleistacanthinae	*Pleistacantha ori* Ahyong & Ng, 2007	No	
Oregoniidae	Pleistacanthinae	*Pleistacantha oryx* Ortmann, 1893	No	
Palicidae		*Paliculus kyusyuensis* (Yokoya, 1933)	No	
Palicidae		*Parapalicus elaniticus* (Holthuis, 1977)	No	
Palicidae		*Pseudopalicus sexlobatus* (Kensley, 1969)	No	
Parthenopidae	Daldorfiinae	*Daldorfia horrida* (Linnaeus, 1758)	No	
Parthenopidae	Parthenopinae	*Enoplolambrus carenatus* (H. Milne-Edwards, 1834)	No	

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Parthenopidae	Parthenopinae	*Lambrachaeus ramifer* Alcock, 1895	No	
Pilumnidae	Eumodoninae	*Eumedonus niger* H. Milne-Edwards, 1834	No	
Pilumnidae	Eumodoninae	*Gonatonotus granulosus* (MacGilchrist, 1905)	No	
Pilumnidae	Pilumninae	*Actumnus setifer* (de Haan, 1835)	Yes	Clark & Ng (2004)
Pilumnidae	Pilumninae	*Benthopanope indica* (de Man, 1887)	Yes	Ko (1995a)
Pilumnidae	Pilumninae	*Eurycarcinus natalensis* (Krauss, 1843)	Yes	Clark & Paula (2003)
Pilumnidae	Pilumninae	*Pilumnus dofleini* Blass, 1933	No	
Pilumnidae	Pilumninae	*Pilumnus longicornis* Hilgendorf, 1878	Yes	Clark & Paula (2003)
Pilumnidae	Pilumninae	*Pilumnus minutus* de Haan, 1835	Yes	Ko (1994)
Pilumnidae	Pilumninae	*Pilumnus trichophoroides* de Man, 1895	No	
Pilumnidae	Pilumninae	*Pilumnus vespertilio* (Fabricius, 1793)	Yes	Lim & Tan (1979); Clark & Paula (2003)
Pilumnidae	Pilumninae	*Serenepilumnus pisifer* (MacLeay, 1838)	No	
Pilumnidae	Xenophthalmodinae	*Xenophthalmodes brachyphallus* Barnard, 1955	No	
Pilumnidae	Xenophthalmodinae	*Xenophthalmodes dolichophallus* Tesch, 1918	No	
Pilumnidae	Xenophthalmodinae	*Xenophthalmodes moebii* Richters, 1880	No	
Carcinidae	Carcininae	*Xaiva mcleayi* (Barnard, 1947)	No	
Geryonidae	Geryoninae	*Chaceon collettei* Manning, 1992	No	
Geryonidae	Geryoninae	*Chaceon macphersoni* (Manning & Holthuis, 1988)	No	
Ovalipidae		*Ovalipes iridescens* (Miers, 1885)	No	
Ovalipidae		*Ovalipes punctatus* (de Haan, 1833)	No	
Ovalipidae		*Ovalipes trimaculatus* (de Haan, 1833)	Yes	Schoeman & Cockroft (1996)
Polybiidae		*Parathranites orientalis* (Miers, 1886)	No	
Portunidae	Caphyrinae	*Caphyra alata* Richters, 1880	No	
Portunidae	Caphyrinae	*Caphyra unidentata* Lenz,1910	No	
Portunidae	Caphyrinae	*Coelocarcinus foliatus* Edmonson, 1930	No	
Portunidae	Caphyrinae	*Lissocarcinus laevis* Miers, 1886	No	

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Portunidae	Caphyrinae	*Lissocarcinus orbicularis* Dana, 1852	No	
Portunidae	Carupinae	*Carupa tenuipes* Dana; 1852	No	
Portunidae	Lupocyclinae	*Lupocyclus tugelae* Barnard, 1950	No	
Portunidae	Podophthalminae	*Podophthalmus vigil* (Fabricius, 1798)	No	
Portunidae	Portuninae	*Carupella natalensis* Lenz & Strunck, 1914	No	
Portunidae	Portuninae	*Cycloachelous granulatus* (H. Milne-Edwards, 1834)	No	
Portunidae	Portuninae	*Cycloachelous orbicularis* (Richters, 1880)	No	
Portunidae	Portuninae	*Portunus argentatus* (A. Milne-Edwards, 1861)	No	
Portunidae	Portuninae	*Portunus gladiator* Fabricius, 1798	No	
Portunidae	Portuninae	*Portunus hastatoides* Fabricius, 1798	No	
Portunidae	Portuninae	*Portunus pelagicus* (Linnaeus, 1758)	Yes	Shinkarenko (1979); Josileen & Menon (2004)
Portunidae	Portuninae	*Portunus sanguinolentus* (Herbst, 1783)	Yes	Naidu (1955)
Portunidae	Portuninae	*Portunus segnis* (Forskål, 1775)	No	
Portunidae	Portuninae	*Scylla serrata* (Forskål, 1775)	Yes	Naidu (1955)
Portunidae	Thalamitinae	*Charybdis africana* Shen, 1935	No	
Portunidae	Thalamitinae	*Charybdis annulata* (Fabricius, 1798)	Yes	Islam *et al.* (2000)
Portunidae	Thalamitinae	*Charybdis feriata* (Linnaeus, 1758)	Yes	Motoh & Villaluz (1976); Fielder *et al.* (1984)
Portunidae	Thalamitinae	*Charybdis hellerii* (A. Milne-Edwards, 1867)	Yes	Dineen *et al.* (2001)
Portunidae	Thalamitinae	*Charybdis natator* (Herbst, 1794)	Yes	Islam *et al.* (2000)
Portunidae	Thalamitinae	*Charybdis orientalis* Dana, 1852	Yes	Islam *et al.* (2000)
Portunidae	Thalamitinae	*Charybdis smithii* MacLeay, 1838	No	
Portunidae	Thalamitinae	*Charybdis variegata* (Fabricius, 1798)	Yes	Islam *et al.* (2000)
Portunidae	Thalamitinae	*Thalamita admete* (Herbst, 1803)	No	
Portunidae	Thalamitinae	*Thalamita bevisi* (Stebbing, 1921)	No	
Portunidae	Thalamitinae	*Thalamita bouvieri* Nobili, 1906	No	
Portunidae	Thalamitinae	*Thalamita crenata* Rüppell, 1830	Yes	Krishnan & Kannupandi (1990a)

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Portunidae	Thalamitinae	*Thalamita danae* Stimpson, 1858	Yes	Krishnan & Kannupandi (1988b)
Portunidae	Thalamitinae	*Thalamita delagoae* Barnard, 1950	No	
Portunidae	Thalamitinae	*Thalamita helleri* Hoffmann, 1874	No	
Portunidae	Thalamitinae	*Thalamita integra integra* Dana, 1852	No	
Portunidae	Thalamitinae	*Thalamita picta* Stimpson, 1858	No	
Portunidae	Thalamitinae	*Thalamita prymna* (Herbst, 1803)	No	
Portunidae	Thalamitinae	*Thalamita sima* H.Milne-Edwards, 1834	No	
Portunidae	Thalamitinae	*Thalamita woodmasoni* Alcock, 1899	No	
Pseudoziidae		*Pseudozius caystrus* (Adams & White, 1849)	No	
Retroplumidae		*Retropluma planiforma* Kensley, 1969	No	
Tetraliidae		*Tetralia cinctipes* Paul'son, 1875	No	
Tetraliidae		*Tetralia glaberrima* (Herbst, 1790)	Yes	Clark & Galil (1988)
Tetraliidae		*Tetralia rubridactyla* Garth, 1971	Yes	Clark & Ng (2006)
Tetraliidae		*Tetraloides nigrifrons* (Dana, 1852)	No	
Trapeziidae	Quadrellinae	*Quadrella boopsis* Alcock, 1898	No	
Trapeziidae	Quadrellinae	*Quadrella coronata* Dana, 1852	No	
Trapeziidae	Quadrellinae	*Quadrella maculosa* Alcock, 1898	Yes	Clark & Ng (2006)
Trapeziidae	Quadrellinae	*Quadrella serenei* Galil, 1986	Yes	Clark & Ng (2006)
Trapeziidae	Trapeziinae	*Trapezia bidentata* (Forskål, 1775)	Yes	Al-Aidaroos (1992)
Trapeziidae	Trapeziinae	*Trapezia cymodoce* (Herbst, 1801)	Yes	Clark & Galil (1988)
Trapeziidae	Trapeziinae	*Trapezia digitalis* Latreille, 1828	Yes	Al-Aidaroos (1992)
Trapeziidae	Trapeziinae	*Trapezia guttata* Rüppell, 1830	No	
Trapeziidae	Trapeziinae	*Trapezia lutea* Castro, 1997	No	
Trapeziidae	Trapeziinae	*Trapezia richtersi* Galil & Lewinsohn, 1983	Yes	Clark & Ng (2006)
Trapeziidae	Trapeziinae	*Trapezia rufopunctata* (Herbst, 1799)	No	
Trapeziidae	Trapeziinae	*Trapezia speciosa* Dana, 1852	No	
Trichopeltariidae		*Trichopeltarion glaucus* (Alcock & Anderson, 1899)	No	
Panopeidae	Panopeinae	*Panopeus africanus* A. Milne-Edwards, 1867	Yes	Rodrígues & Paula (1993)

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Xanthidae	Actaeinae	*Actaea polyacantha* (Heller, 1861)	No	
Xanthidae	Actaeinae	*Actaea savignii* (H. Milne-Edwards, 1834)	No	
Xanthidae	Actaeinae	*Actaea spinosissima* Borradaile, 1902	No	
Xanthidae	Actaeinae	*Actaeodes hirsutissimus* (Rüppell, 1830)	Yes	Clark & Al-Aidaroos (1996)
Xanthidae	Actaeinae	*Actaeodes tomentosus* (H. Milne-Edwards, 1834)	Yes	Clark & Al-Aidaroos (1996)
Xanthidae	Actaeinae	*Epiactaea nodulosa* (White, 1848)	Yes	Clark (in press)
Xanthidae	Actaeinae	*Forestiana depressa* (White, 1848)	No	
Xanthidae	Actaeinae	*Gaillardiellus rueppelli* (Krauss, 1843)	No	
Xanthidae	Actaeinae	*Paractaea rebieri* Guinot, 1969	No	
Xanthidae	Actaeinae	*Paractaea rufopunctata* (H. Milne-Edwards, 1834)	No	
Xanthidae	Actaeinae	*Psaumis cavipes* (Dana, 1852)	Yes	Clark (in press)
Xanthidae	Actaeinae	*Pseudoliomera speciosa* (Dana, 1852)	Yes	Clark & Galil (1998)
Xanthidae	Actaeinae	*Pseudoliomera variolosa* (Borradaile, 1902)	No	
Xanthidae	Banareiinae	*Banareia parvula* (Krauss, 1843)	No	
Xanthidae	Chlorodiellinae	*Chlorodiella laevissima* (Dana, 1852)	No	
Xanthidae	Chlorodiellinae	*Chlorodiella nigra* (Forskål, 1775)	No	
Xanthidae	Chlorodiellinae	*Cyclodius obscurus* (Hombron & Jacquinot, 1846)	No	
Xanthidae	Chlorodiellinae	*Cyclodius ungulatus* (H. Milne Edwards, 1834)	No	
Xanthidae	Chlorodiellinae	*Luniella pugil* (Dana, 1852)	No	
Xanthidae	Chlorodiellinae	*Phymodius ungulatus* (H. Milne-Edwards, 1834)	No	
Xanthidae	Chlorodiellinae	*Pilodius areolatus* (H. Milne-Edwards, 1834)	No	
Xanthidae	Chlorodiellinae	*Pilodius melanospinis* (Rathbun, 1911)	No	
Xanthidae	Chlorodiellinae	*Pilodius pilumnoides* (White, 1848)	No	
Xanthidae	Cymoinae	*Cymo andreossyi* (Audouin, 1826)	Yes	Al-Haj *et al.* (2017)
Xanthidae	Cymoinae	*Cymo melanodactylus* Dana, 1852	Yes	Al-Haj *et al.* (2017); Clark (in press)
Xanthidae	Cymoinae	*Cymo quadrilobatus* Miers, 1884	Yes	Al-Haj *et al.* (2017)

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Xanthidae	Etisinae	*Etisus anaglyptus* H. Milne-Edwards, 1834	Yes	Al-Haj and Al-Aidaroos (2017); Clark (in press)
Xanthidae	Etisinae	*Etisus electra* (Herbst, 1801)	Yes	Al-Haj and Al-Aidaroos (2017)
Xanthidae	Etisinae	*Etisus laevimanus* Randall, 1840	Yes	Suzuki (1978)
Xanthidae	Euxanthinae	*Hypocolpus diverticulatus* (Strahl, 1861)	No	
Xanthidae	Euxanthinae	*Medaeops granulosus* (Haswell, 1882)	Yes	Clark (in press)
Xanthidae	Euxanthinae	*Medaeops neglectus* (Balss, 1922)	No	
Xanthidae	Euxanthinae	*Monodaeus tuberculidens* (Rathbun, 1911)	No	
Xanthidae	Kraussiinae	*Kraussia rugulosa* (Krauss, 1843)	No	
Xanthidae	Liomerinae	*Liomera bella* (Dana, 1852)	Yes	Yang & Ko (2005); Clark (in press)
Xanthidae	Liomerinae	*Liomera cinctimanus* (White, 1847)	Yes	Clark (in press)
Xanthidae	Liomerinae	*Liomera monticulosa* (A. Milne-Edwards, 1973)	No	
Xanthidae	Liomerinae	*Liomera rugata* (H. Milne Edwards, 1834)	No	
Xanthidae	Liomerinae	*Liomera stimpsonii* (A. Milne-Edwards, 1865)	No	
Xanthidae	Liomerinae	*Liomera tristis* (Dana, 1852)	No	
Xanthidae	Liomerinae	*Neoliomera sabaea* (Nobili, 1906)	No	
Xanthidae	Liomerinae	*Neoliomera themisto* (de Man, 1889)	No	
Xanthidae	Polydectinae	*Lybia leptochelis* (Zehntner, 1894)	No	
Xanthidae	Polydectinae	*Lybia plumosa* Barnard, 1946	Yes	Clark & Paula (2003)
Xanthidae	Polydectinae	*Lybia tessellata* (Latreille in Milbert, 1812)	No	
Xanthidae	Xanthinae	*Lachnopodus subacutus* (Stimpson, 1858)	Yes	Clark (in press)
Xanthidae	Xanthinae	*Leptodius exaratus* (H. Milne-Edwards, 1834)	Yes	Clark & Paula (2003); Al Aidaroos *et al.* (2017)
Xanthidae	Xanthinae	*Leptodius sanguineus* (H. Milne-Edwards, 1834)	Yes	Clark (in press)
Xanthidae	Xanthinae	*Macromedaeus quinquedentatus* (Krauss, 1843)	No	
Xanthidae	Xanthinae	*Macromedaeus voeltzkowi* (Lenz, 1905)	No	

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Xanthidae	Xanthinae	*Neoxanthias impressus* (Latreille in Milbert, 1812)	No	
Xanthidae	Xanthinae	*Xanthias lamarckii* (H.Milne-Edwards, 1834)	No	
Xanthidae	Xanthinae	*Xanthias maculatus* Sakai, 1961	No	
Xanthidae	Xanthinae	*Xanthias punctatus* (H. Milne-Edwards, 1934)	No	
Xanthidae	Zosiminae	*Atergatis floridus* (Linnaeus, 1767)	Yes	Tanaka & Konishi (2001)
Xanthidae	Zosiminae	*Atergatis granulatus* de Man, 1889	No	
Xanthidae	Zosiminae	*Atergatis ocyroe* (Herbst, 1801)	No	
Xanthidae	Zosiminae	*Atergatis roseus* (Rüppell, 1830)	No	
Xanthidae	Zosiminae	*Atergatopsis obesa* (A. Milne-Edwards, 1865)	No	
Xanthidae	Zosiminae	*Atergatopsis signata* (Adams & White, 1849)	No	
Xanthidae	Zosiminae	*Lophozozymus dodone* (Herbst, 1801)	No	
Xanthidae	Zosiminae	*Paratergatis longimanus* Sakai, 1965	No	
Xanthidae	Zosiminae	*Platypodia granulosa* (Rüppell, 1830)	No	
Xanthidae	Zosiminae	*Zosimus aeneus* (Linnaeus, 1758)	No	
Xanthidae	Zosiminae	*Zozymodes cavipes* (Dana, 1852)	No	
Xanthidae	Zosiminae	*Zozymodes xanthoides* (Krauss, 1843)	Yes	Clark & Paula (2003)
Cryptochiridae		*Cryptochirus coralliodytes* Heller, 1861	No	
Cryptochiridae		*Hapalocarcinus marsupialis* Stimpson, 1859	Yes	Gore *et al.* (1983)
Gecarcinidae		*Cardisoma carnifex* (Herbst, 1796)	Yes	Flores *et al.*(2003)
Grapsidae		*Geograpsus stormi* de Man, 1895	No	
Grapsidae		*Grapsus fourmanoiri* Crosnier, 1965	Yes	Flores *et al.* (2003)
Grapsidae		*Grapsus tenuicrustatus* (Herbst, 1783)	Yes	Flores *et al.* (2003)
Grapsidae		*Metopograpsus messor* (Forskål, 1775)	Yes	Flores *et al.* (2003)
Grapsidae		*Metopograpsus thukuhar* (Owen, 1839)	No	
Grapsidae		*Pachygrapsus minutus* A.Milne-Edwards, 1873	Yes	Flores *et al.* (2003)
Grapsidae		*Pachygrapsus plicatus* (H.Milne-Edwards, 1837)	Yes	Flores *et al.* (2003)

List of Brachyuran species in the Western Indian Ocean				
Family	**Subfamily**	**Species**	**Zoeal description**	**Description reference**
Grapsidae		*Planes major* (MacLeay, 1838)	No	
Grapsidae		*Planes marinus* Rathbun, 1914	Yes	Wear (1970)
Grapsidae		*Planes minutus* (Linnaeus, 1758)	Yes	Cuesta *et al.* (1997)
Percnidae		*Percnon guinotae* Crosnier, 1965	No	
Percnidae		*Percnon planissimum* (Herbst, 1804)	No	
Plagusiidae		*Euchirograpsus polyodous* (Stebbing, 1921)	No	
Plagusiidae		*Guinusia chabrus* (Linnaeus, 1758)	Yes	Schubart & Cuesta (2010)
Plagusiidae		*Miersiograpsus kingsleyi* (Miers, 1885)	No	
Plagusiidae		*Plagusia depressa* (Fabricius, 1775)	Yes	Wilson & Gore (1980)
Plagusiidae		*Plagusia squamosa* (Herbst, 1790)	No	
Sesarmidae		*Chiromantes eulimene* (de Man, 1897)	Yes	Pereyra Lago (1993b); Flores *et al.* (2003); Guerao *et al.* (2011)
Sesarmidae		*Chiromantes ortmanni* (Crosnier, 1965)	Yes	Guerao *et al.* (2012)
Sesarmidae		*Neosarmatium africanum* Ragionieri, Fratini & Schubart, 2012	No	
Sesarmidae		*Neosarmatium meinerti* (de Man, 1887)	Yes	Pereyra Lago (1989); Flores *et al.* (2003)
Sesarmidae		*Neosarmatium smithi* (H. Milne-Edwards, 1853)	No	
Sesarmidae		*Parasesarma catenatum* (Ortmann, 1897)	Yes	Pereyra Lago (1987); Flores *et al.* (2003)
Sesarmidae		*Parasesarma leptosoma* (Hilgendorf, 1869)	Yes	Flores *et al.* (2003)
Sesarmidae		*Parasesarma plicatum* (Latreille, 1803)	Yes	Selvakumar (1999)
Sesarmidae		*Perisesarma guttatum* (A. Milne-Edwards, 1869)	Yes	Pereyra Lago (1993a)
Sesarmidae		*Perisesarma samawati* Gillikin & Schubart, 2004	No	
Sesarmidae		*Sarmatium crassum* Dana, 1851	Yes	Flores *et al.* (2003)
Sesarmidae		*Selatium elongatum* (A. Milne-Edwards, 1869)	No	
Sesarmidae		*Sesarmoides longipes* (Krauss, 1843)	No	
Varunidae	Cyclograpsinae	*Cyclograpsus punctatus* H. Milne-Edwards, 1937	Yes	Fagetti & Campodonico (1971)

List of Brachyuran species in the Western Indian Ocean				
Family	**Subfamily**	**Species**	**Zoeal description**	**Description reference**
Varunidae	Cyclograpsinae	*Parahelice balssi* (K. Sakai, Türkay & Yang, 2006)	No	
Varunidae	Cyclograpsinae	*Pseudohelice subquadrata* (Dana, 1851)	No	
Varunidae	Gaeticinae	*Brankocleistostoma fossulum* (Barnard, 1955)	No	
Varunidae	Varuninae	*Pseudograpsus elongatus* (A. Milne-Edwards, 1873)	No	
Varunidae	Varuninae	*Ptychognathus onyx* Alcock, 1900	No	
Varunidae	Varuninae	*Varuna litterata* (Fabricius, 1798)	No	
Camptandriidae		*Danielella edwardsii* (MacLeay, 1838)	No	
Camptandriidae		*Paratylodiplax algoensis* (Barnard, 1954)	No	
Camptandriidae		*Paratylodiplax blephariskios* (Stebbing, 1924)	No	
Dotillidae		*Dotilla fenestrata* Hilgendorf, 1869	Yes	Paula *et al*. (in prep.)
Dotillidae		*Lazarocleistostoma dentatum* (Tesch, 1918)	No	
Macrophthalmidae	Ilyograpsinae	*Ilyograpsus paludicola* (Rathbun, 1909)	Yes	Flores *et al.* (2003)
Macrophthalmidae	Ilyograpsinae	*Ilyograpsus rhizophorae* Barnard, 1955	No	
Macrophthalmidae	Macrophthalminae	*Chaenostoma boscii* (Audouin, 1826)	Yes	Paula *et al*. (in prep.)
Macrophthalmidae	Macrophthalminae	*Chaenostoma sinuspersici* (Naderloo & Türkay, 2011)	No	
Macrophthalmidae	Macrophthalminae	*Macrophthalmus convexus* Stimpson, 1858	No	
Macrophthalmidae	Macrophthalminae	*Macrophthalmus depressus* Stimpson, 1859	Yes	Paula *et al*. (in prep.)
Macrophthalmidae	Macrophthalminae	*Macrophthalmus grandidieri* A. Milne-Edwards, 1867	Yes	Paula *et al*. (in prep.)
Macrophthalmidae	Macrophthalminae	*Venitus latreillei* (Desmarest, 1822)	Yes	Selvakumar *et al*. (1988)
Ocypodidae	Gelasiminae	*Astruca annulipes* (H. Milne-Edwards, 1837)	Yes	Paula *et al*. (in prep.)
Ocypodidae	Gelasiminae	*Cranuca inversa* (Hoffman, 1874)	No	
Ocypodidae	Gelasiminae	*Gelasimus hesperiae* Crane, 1975	No	
Ocypodidae	Gelasiminae	*Gelasimus vocans* (Linnaeus, 1758)	Yes	Paula *et al*. (in prep.)
Ocypodidae	Gelasiminae	*Paraleptuca chlorophthalmus* (H. Milne Edwards, 1837)	Yes	Paula *et al*. (in prep.)

List of Brachyuran species in the Western Indian Ocean				
Family	**Subfamily**	**Species**	**Zoeal description**	**Description reference**
Ocypodidae	Gelasiminae	*Paraleptuca crassipes* (White, 1847)	No	
Ocypodidae	Gelasiminae	*Tubuca urvillei* (H. Milne-Edwards, 1852)	Yes	Paula *et al.* (in prep.)
Ocypodidae	Ocypodinae	*Ocypode ceratophthalmus* (Pallas, 1772)	Yes	Jiang *et al.* (2014)
Ocypodidae	Ocypodinae	*Ocypode cordimana* Latreille, 1818	Yes	Jiang *et al.* (2014)
Ocypodidae	Ocypodinae	*Ocypode madagascariensis* Crosnier, 1965	No	
Ocypodidae	Ocypodinae	*Ocypode ryderi* Kingsley, 1880	No	
Pinnotheridae	Pinnothereliinae	*Pinnixa penultipedalis* Stimpson, 1859	No	
Pinnotheridae	Pinnotherinae	*Ostracotheres tridacnae* (Rüppell, 1830)	No	
Pinnotheridae	Pinnotherinae	*Pinnotheres dofleini* Lenz, 1915	No	
Pinnotheridae	Pinnotherinae	*Pinnotheres globosus* Hombron & Jacquinot, 1847	No	
Pinnotheridae	Pinnotherinae	*Xanthasia murigera* White, 1847	No	
Hymenosomatidae	Hymenosomatinae	*Elamena mathoei* (Desmarest, 1823)	Yes	Krishnan & Kannupandi (1988a)
Hymenosomatidae	Hymenosomatinae	*Halicarcinus planatus* (Fabricius, 1775)	Yes	Boschi *et al.*(1969)
Hymenosomatidae	Hymenosomatinae	*Hymenosoma geometricum* Stimpson, 1858	No	
Hymenosomatidae	Hymenosomatinae	*Hymenosoma orbiculare* Desmarest, 1823	Yes	Dornelas *et al.* (2003)
Hymenosomatidae	Hymenosomatinae	*Neorhynchoplax bovis* (Barnard, 1946)	No	
Hymenosomatidae	Hymenosomatinae	*Trigonoplax unguiformis* (de Haan, 1839)	Yes	Dornelas *et al.* (2003)

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