

Diversity and distribution of cardinal fishes in Indian coastal waters with an occurrence report of spot fin cardinal fish *Apogon queketti* from Central south west coast of India



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312

Table.1 Diversity of Apogonidae fishes from Indian seas

<i>Apogon andhrae</i> Dutt&Rao,1980	<i>Cheilodipterus quinquelineatus</i> Cuvier, 1828
<i>Apogon coccineus</i> Rüppell, 1838	<i>Foa brachygramma</i> (Jenkins, 1903)
<i>Apogon ellioti</i> Day, 1875	<i>Fowleria aurita</i> (Valenciennes, 1831)
<i>Apogon hyalosoma</i> Bleeker, 1852	<i>Fowleria marmorata</i> (Alleyne & MacLeay, 1877)
<i>Apogon lineatus</i> Temminck & Schlegel, 1842	<i>Fowleria punctulata</i> (Rüppell, 1838)
<i>Apogon multitaeiniatus</i> Cuvier, 1828	<i>Glossamia sandei</i> (Weber, 1907)
<i>Apogon nitidus</i> (Smith, 1961)	<i>Glossamia trifasciata</i> (Weber, 1913)
<i>Apogon poecilopterus</i> Cuvier, 1828	<i>Holapogon maximus</i> (Boulenger, 1888)
<i>Apogon queketti</i> Gilchrist, 1903	<i>Lepidamia kalosoma</i> (Bleeker, 1852)
<i>Apogon quinquestratus</i> Regan, 1908	<i>Neamia octospina</i> Smith & Radcliffe, 1912
<i>Apogon sangiensis</i> Bleeker, 1857	<i>Nectamia bandanensis</i> (Bleeker, 1854)
<i>Apogon septemstriatus</i> Günther, 1880	<i>Nectamia fusca</i> (Quoy & Gaimard, 1825)
<i>Apogon smithi</i> (Kotthaus, 1970)	<i>Nectamia savayensis</i> (Günther, 1872)
<i>Apogon truncatus</i> Bleeker, 1855	<i>Ostorhinchus apogonoides</i> (Bleeker, 1856)
<i>Apogonichthoides erdmanni</i> Fraser & Allen, 2011	<i>Ostorhinchus aureus</i> (Lacepède, 1802)
<i>Apogonichthoides heptastigma</i> (Cuvier, 1828)	<i>Ostorhinchus chrysaena</i> (Bleeker, 1851)
<i>Apogonichthoides nigripinnis</i> (Cuvier, 1828)	<i>Ostorhinchus compressus</i> (Smith & Radcliffe, 1911)
<i>Apogonichthoides pseudotaeniatus</i> (Gon, 1986)	<i>Ostorhinchus cookii</i> (MacLeay, 1881)
<i>Apogonichthoides sialis</i> (Jordan & Thompson, 1914)	<i>Ostorhinchus cyanosoma</i> (Bleeker, 1853)
<i>Apogonichthoides taeniatus</i> (Cuvier, 1828)	<i>Ostorhinchus dispar</i> (Fraser & Randall, 1976)
<i>Apogonichthoides umbratilis</i> Fraser & Allen, 2010	<i>Ostorhinchus endekataenia</i> (Bleeker, 1852)
<i>Apogonichthys ocellatus</i> (Weber, 1913)	<i>Ostorhinchus fasciatus</i> (White, 1790)
<i>Apogonichthys perdix</i> Bleeker, 1854	<i>Ostorhinchus fleurieu</i> (Lacepède, 1802)
<i>Archamia fucata</i> (Cantor, 1849)	<i>Ostorhinchus hoeverii</i> (Bleeker, 1854)
<i>Archamia lineolata</i> (Cuvier, 1828)	<i>Ostorhinchus lateralis</i> (Valenciennes, 1832)
<i>Archamia macroptera</i> (Cuvier, 1828)	<i>Ostorhinchus moluccensis</i> (Valenciennes, 1832)
<i>Archamia zosterophora</i> (Bleeker, 1856)	<i>Ostorhinchus nigrofasciatus</i> (Lachner, 1953)
<i>Cheilodipterus arabicus</i> (Gmelin, 1789)	<i>Ostorhinchus novemfasciatus</i> (Cuvier, 1828)
<i>Cheilodipterus artus</i> Smith, 1961	<i>Pristiapogon fraenatus</i> (Valenciennes, 1832)
<i>Cheilodipterus lachneri</i> Klausewitz, 1959	<i>Pristiapogon kallopterus</i> (Bleeker, 1856)
<i>Cheilodipterus macrodon</i> (Lacepède, 1802)	<i>Pristicon trimaculatus</i> (Cuvier, 1828)
	<i>Sphaeramia orbicularis</i> (Cuvier, 1828)
	<i>Zoramia fragilis</i> (Smith, 1961)

Introduction

The family Apogonidae is a specious family with 346 species, in which most of them marine and some thrive in brackish water. These are commonly referred to as cardinal fishes, which seldom reaches a maximum size of 20cm . Sixty five species of this family have been reported from Indian waters. *Apogon queketti* is a valid species and two taxa have been synonymized with this viz., *Apogonichthys queketti* and *Jaydia queketti*. The genus *Apogon* which contains 108 valid species are mostly marine, living on sandy and muddy bottom of the continental shelf. Nearly 15 species of Apogonidae have been reported from the Minicoy Atoll ecosystem. However *Apogon queketti* has not so far been reported there.

Materials and methods

The apogonidae diversity was assessed from various publication available on this group in the national and international repository and they have been compiled in the present study (Dutt and Rao, 1980; Ranjith et. al.2016; Govindarao et.al. 2016a&b; Muddulakrishna et.al.2015; Smith ,1961; Suresh &Thomas, 2006; Hashim, et. al. 2012; Nagakrishnaveni et. al. 2014; Joshi et.al.2016; and Venkataraman et.al. 2012). A single specimen of *Apogon queketti* was collected from the commercial trawl operated off the coast of Murudeshwar at 60m depth. Meristic characters of the specimen were measured with a digital caliper (to the nearest 0.01mm) as per Gon and Randall(2003).

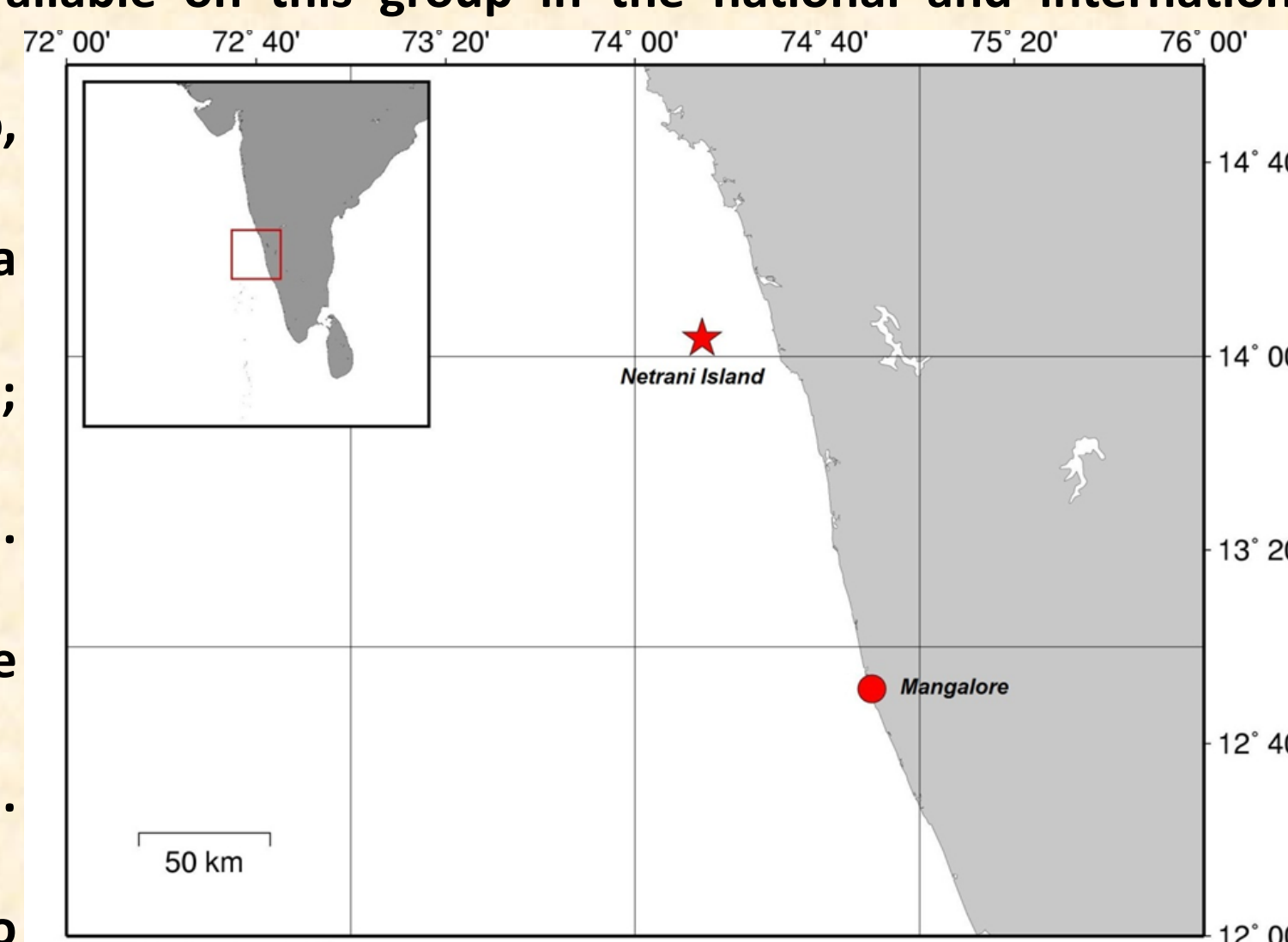


Fig.1 Map Showing the area of collection of *Apogon queketti*

Results and Discussion

- Among the 38 genera of the family Apogonidae, sixty five species from seventeen genera have been reported from Indian waters .
- Comparison of morphometric measurements of Murudeshwar specimen (*Apogon queketti*) deviated from the range of measurement given by the different authors elsewhere in the Red sea and Mediterranean specimens.
- The present record is the first reported occurrence of this species along the southwest coast, and the invasive nature of this species may allow widespread distribution along the coral reef coast of Gulf of Mannar, south east of India.
- Cardinal fishes are generally noted for their resilience and spreading to newer territories. The Suez canal which opens the Red Sea into the Mediterranean paved way for lessepsian migration and *Apogon queketti* has invaded in these new territories.
- The new records of cardinal fishes from Indian coast is increasing in recent times as more attention is paid to these groups. Such studies will help to understand this ecologically important, yet one of the least known among tropical reef fishes.

Acknowledgement

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Fig.2 Taxonomic diversity of Cardinal fishes of Indian Coast

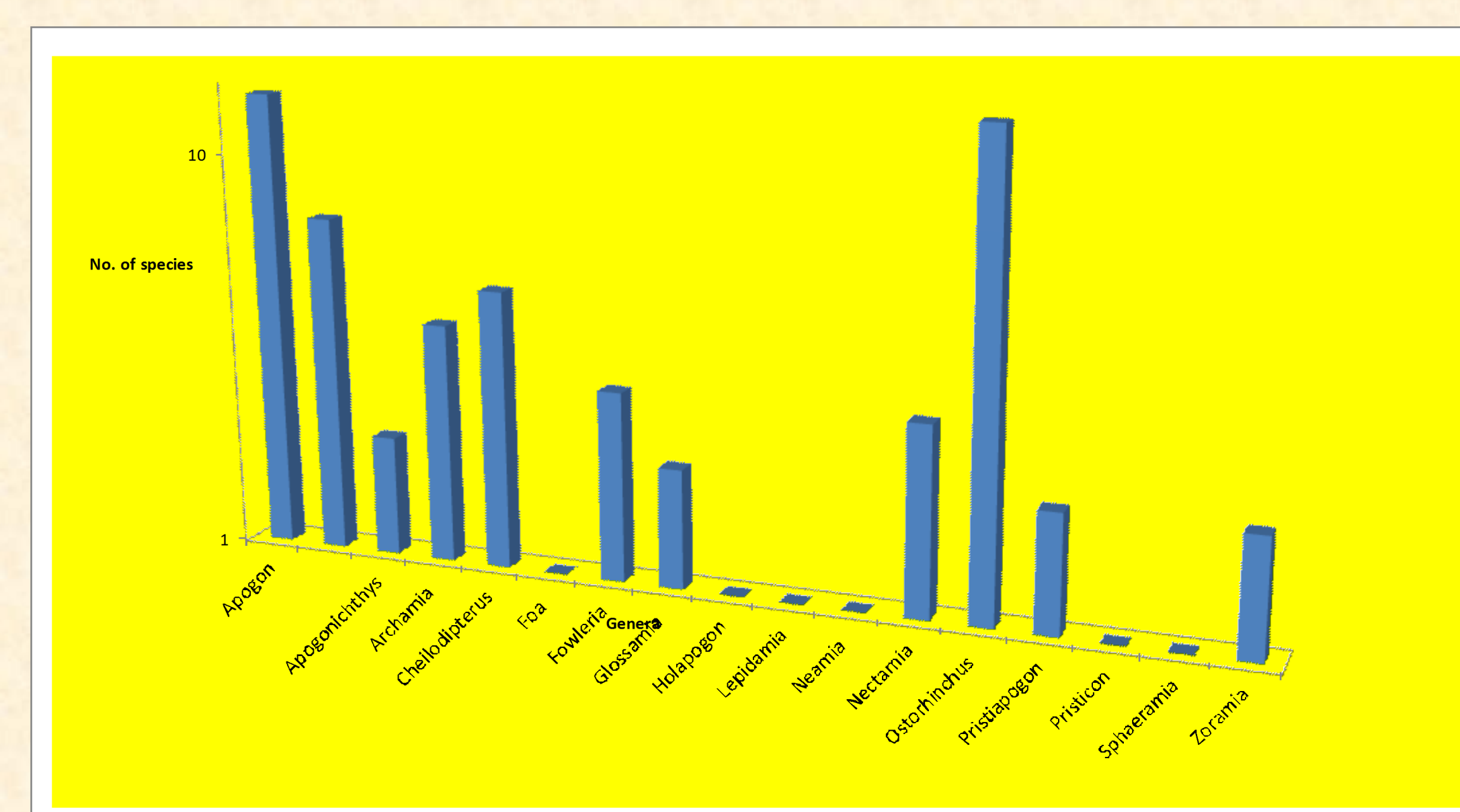


Fig. 3 Spot fin cardinal fish *Apogon queketti*

